

**No Exit? A comparative study of material deprivation
in households supporting disabled persons across
thirty-two European countries during the last decade**

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Abstract

This study was motivated by the persistent and ubiquitous link between disability and poverty, guided by the research question: ‘What is the impact of living with a limiting long-term impairment, health problem, or illness, on a household’s experience of material deprivation across different EU countries, and what household, regional and country factors contribute to deprivation in these households?’

Using a mixed methods research strategy, and employing a secondary analysis design of EU-SILC cross-sectional data and United Nations Convention on the Rights of Persons with Disabilities (UNCRPD) compliance reports by Disabled Persons’ Organisations (DPOs), the material deprivation reality of disabled persons and their households were examined in a European comparative study.

Past research reveals a concrete and conceptual link between disability and poverty emanating from decreased employment income potential and increased disability related costs. This reality bears on the capability of those concerned to live an active citizenship.

Using a broad material deprivation conceptualisation of poverty, a composite index comprising 25 EU-SILC deprivation measures was developed to compare households comprising or not comprising an adult member living with a limiting long-term impairment, health problem or illness, in 32 countries between 2013-2019. Sixty-six UNCRPD compliance reports by DPOs from 26 countries were also analysed focusing on Articles 28, 19, and 27 covering 2015-2021.

In all countries throughout the seven years examined, households supporting disabled persons experienced higher unwavering material deprivation compared to other households, across all the income spectrum. Households identifying their housing costs as a heavy burden were associated with higher levels of deprivation. The DPOs’ reports identify the availability of suitable affordable housing as a key issue to their capability to participate as active citizens in society, in addition to adequate social protection benefits compensating for their reduced employment income potential and increased costs, and sufficient, personalised and flexible personal assistance services.

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Preface

I recall nearly a quarter of a century ago, being responsible for leading the setting up of the first social work service focused on supporting disabled persons and their families in Malta. We had, at that time, organised what in contemporary parlance can be termed as an embryonic ‘user-involvement’ consultation meeting, at that time referred to as ‘public participation’, in an attempt to work in partnership with disabled persons and their support networks in developing this new service. Potential service users were asked to identify the hardest and most testing issues they faced living with impairment. “Poverty” was the prevailing consensus without much wavering. “It affects every facet of our life!” We stayed with the discussion for a long while, considering that most of the participants were not what one would deem as typically “poor”. What followed were intricate variations on the theme of poverty and the relationship between poverty and disability, succinctly described by Beresford (1996, p. 553) as “close, complex and multi-faceted”. This exchange was taking place just a few years after the Disabled People International in the 1992 Vancouver Declaration proclaimed disabled persons as the poorest of the poor in their respective countries, a declaration pronounced nearly 25 years after the 1968 disabled persons demonstration against poverty in Trafalgar Square (Barnes, 2016).

There were stories of individuals and families who were living in perpetual material deprivation, families that could not improve their wellbeing inasmuch as the impairment increased their daily household expenditure while impacting their ability to earn an adequate income. And stories of individuals and families trapped in housing conditions not suitable for them, but about which they could do practically nothing. Participants described how their reliance on social protection benefits opened their life to the scrutiny of public bureaucracies and the criticism of public discourse on welfare recipients’ life choices. Moreover, social protection beneficiaries were expected to show indebtedness for the benefits they received, not able to dare contemplate complaining about any shortcomings experienced, rendering themselves submissive in relation to a system that left them with no alternative. Every choice was a difficult one and non-essential extras that colour one’s life, such as going out for a coffee with friends, carried with them the self-reproach of luxury expenditure.

Another predominant theme reflected the conservative approach participants took to managing their money considering their experience of life as unpredictable and insecure; living tight-fisted was not a choice but a requirement to insure against the perceived instability, insecurity and vulnerability resulting from living with impairment and the changeability of their support network. Poverty, asceticism, and vulnerability were intertwined in these stories. They represented what Beresford (1996) termed “disabled people’s diverse experience of poverty” (p. 559), and what Lister (2021) summarised as the picture of deprivation involving “constant restrictions, doing without, running out of money at the end of the week, debt, limited choice, feeling trapped, no room for spontaneity and damaged family relationships” (p. 63). It is a picture of deprivation not unique to disabled persons; yet for disabled persons, poverty and benefit dependency remain top on disabled advocates’ agenda for the 21st Century (European Disability Forum, 2014; Hughes and Avoke, 2010; O’Day and Goldstein, 2005). Moreover, the nature and depth of poverty experienced by disabled persons is rarely a one-off phenomenon considering that the contributory factors to their poverty are, more often than not, deeply rooted in the disabling reality surrounding them. Consequently, disabled persons are “more likely than others to be dependent on the welfare state over a long period of time” (Halvorsen et al., 2018, p. 8).

Poverty moulds every aspect of the lives of disabled persons and their families. Disabled persons continue to be noticeably overrepresented among poor people irrespective of the conceptualisation, definition and measurement of poverty used (Eurostat, 2022a, Heslop, 2013, Palmer, 2011, Braithwaite and Mont, 2009, Beresford, 1996). This reality is true for all disabled persons regardless of the physical, sensory, intellectual, health or mental health impairment they experience (Beresford, 1996). Poverty for persons living with impairment and for their families cannot be constricted within narrow definitions based on absolute or relative material standards. Living without the resources to fully exercise one’s civil rights, living in a state of emotional vulnerability because support structures are unprotected, living without the capability to fulfil one’s responsibilities as an individual or as a parent or as a citizen, are all part of the complex deprivation reality experienced as a consequence of a society that ‘disables’ people living with impairment and their families (Oliver, 2009; Morris, 2005; Barton, 1993). Oliver

(2009, 1996) draws attention to the Union of the Physically Impaired Against Segregation and The Disability Alliance (1975) fundamental principles in which the relationship between one's impairment and disability was articulated as follows: "Disability is something imposed on top of our impairments, by the way we are unnecessarily isolated and excluded from full participation in society" (p. 3), going on to describe disabled persons as "an oppressed group in society" (p. 4). Consequently, Oliver (1996) argues, poverty cannot be divorced from the discrimination and inequality experienced by disabled persons. This understanding of poverty focuses on the disabling impact of poverty and accentuates that the root causes of poverty are in the limitations imposed by society rather than in the limitations resulting from impairment. It highlights the fact that poverty further affects the ability of persons living with impairment to fully participate in society.

There are, of course, multiple other factors that intersect with impairment and poverty with the potential of further 'disabling' one's capability to "participate in the activities and have the living conditions and amenities which are customary, or are at least widely encouraged or approved, in the societies to which they belong" (Townsend, 1979, p. 31); lack of adequate housing, environmental factors, gender, race, are examples of such factors. The complex process through which household income impacts a family living with a long-term impairment is one of this study's focuses. Contextual factors at household and community level can buffer or intensify the impact of income poverty thereby affecting the household's resultant quality of life. Explaining this variance contributes to better understanding the complex manner through which income poverty further 'disables' individuals and households living with a long-term impairment.

An etic or 'outsider' perspective and an emic or 'insider' perspective on such reality can complement each other (Morris et al., 1999). My original intention for this study was to attempt to bring the two approaches together rather than considering the two different viewpoints in tension with each other which the researcher attempts to manage (Patton, 2015). In so doing, the emic reflection on the etic perspectives, through a collaborative and participative process, could provide a level of analysis that potentially better captures the reality of households living with long-term impairments struggling to access "ordinary living patterns and activities"

(Townsend, p. 31). Even if one accepts Yin's (2010) assertion that the outsider and insider outlooks can never be reconciled, the dialogical process between both perspectives could allow for new understandings which neither perspective alone provides; in a dialogical process, the different contributions to the dialogue are not construed as being in contradiction or competition with each other, but rather challenge their respective boundaries in pursuit of attaining a comprehensive grasp of the issue being examined. However, the context within which the study was carried out dictated a different approach. By the time I was ready to start the conversational process with disabled persons to examine and scrutinise the findings from the analysis of loads of data focusing on deprivation and disability, the Covid-19 pandemic had hit all aspects of society's wellbeing, and the priorities of disabled persons' organisations were completely shifted to focus on the compounded impact they were experiencing. The pandemic itself propagated a main theme recurring throughout this study, namely that whatever undesirable, harmful and adverse consequences are experienced by society, disabled persons tend to get more than their fair share of them all. Consequently, I shifted this study to focus primarily on the etic perspective, in full recognition that it is lacking without the emic subjective experience of disabled persons. The original intention to study the results of the analysis carried out in this research together with disabled persons and to reflect their insiders' perspective as the main contribution of this study is, regrettably, missing. In the absence of the opportunity to engage with disabled persons from all the countries covered in this study to interpret and discuss the findings resulting from the analysis of the quantitative data, the indirect input of disabled persons was incorporated through the analysis of extensive reports prepared by Disabled Persons Organisations in relation to their respective country's compliance or otherwise with the United Nations Convention on the Rights of Persons with Disabilities. This insider perspective adds substantial value to this study's outcome.

Poverty is not morally neutral, and the moral imperative of poverty has policy and political implications (Lister, 2021). The policy concern with poverty in the context of disability stems from a recognition of the link between the two. Many societies have responded to the needs of disabled persons initially through the voluntary charity sector and later through a variety of statutory services and benefits (Hampton, 2016; Beresford, 1996). Developments in the welfare state provision for

disabled persons promised to overcome what Beresford referred to as the “individual reliance on charity” (1996, p. 558) that was “personally demeaning, inadequate and unreliable ... out of people’s control, inherently patronising and substitutes personal dependence for disabled people’s individual and collective rights” (1996, p. 558). The extent to which the welfare state has met the citizenship aspirations of disabled persons can only be discussed in the context of the different traditions of welfare regimes spanning a wide range of political spectrum. Referring to the United Kingdom (UK) situation, Hampton argues that by 1981 the welfare state “had actually failed millions of disabled people, not least in respect and acceptance from exclusion” (2016, p. 1). Indeed, the conclusions reached by Hampton that the state had failed to “help disabled people attain ordinary levels of socioeconomic participation ... create equality of opportunity ... experience equality in incomes, outcomes and wealth” (2016, p. 244) have also been shared by Oliver claiming that “the welfare state has failed disabled people” (1991, p. 156) and calling for a “radical restructuring of state welfare” (1991, p.159). Beresford’s (1996) critique of the charity model, Oliver’s (1991) critique of the welfare state, and Beresford’s (2016) more recent analysis of the welfare state from a participatory stance converge in arguing for the central role of marginalised people in articulating and advancing alternatives to both the welfare state and the neo-liberal project for the welfare state. Prandini and Orlandini (2018) put forward the assertion that similar demands can be traced across Europe, especially since the financial crisis of 2008. However, the litmus test of real change depends on the “co-design and co-production of services, i.e. the inclusion and activation of users and clients into the service” (Prandini and Orlandini, 2008, p. 90).

How can social policy be reshaped to address the experience of disabled persons and secure for them a life that is not demeaning, inadequate and unreliable? How can the welfare state secure for disabled persons full active citizenship? At the heart of this question is the disabled person’s experience of deprivation. If this experience is defined in strictly material terms, then the solution is welfare payments. On the other hand, the full deprivation experience of disabled persons referred to above shifts the focus to what it is that disabled persons need to exercise their full rights and full contribution as active citizens.

Disabled persons have fought to acquire their full citizenship status through access to employment and paid work. Yet, this essential avenue does not offer a route out of poverty for many disabled persons on two counts. Disabled persons are more likely to be employed in insecure and low paying jobs, or generally underemployed (van der Zwan and de Beer, 2021; Colella and Bruyère, 2011). Moreover, there are people whose impairment does not allow them to hold paid 'productive' employment. For this latter group of people, the employment route is a nonstarter, and their 'poverty' status will always depend on their informal and formal support structures. The shift towards a social investment policy framework in recent years has further accentuated this limitation. Morel, Palier and Palme (2012) in their seminal work on the shift towards a social investment welfare state overlook disabled persons. Cantillon (2014) argued that the narrow employment-stimulus focus of social investment gives no consideration to the impact of social expenditure on disabled persons' quality of life. Disabled persons for whom the employment route cannot function as an insurance against poverty (or as a route out of poverty) are more dependent on their family, other informal support structures, and social benefits and services for their financial security. Social policies, which shape the benefits and services insuring disabled persons against poverty in its complexity, variety and totality, can be informed by both the generalisations learnt from the collective experiences of disabled persons and, more importantly, by the lived experiences of people with the most complex physical, sensorial, intellectual, health and mental health impairments, and what they identify as beneficial. The focus on those with the most complex needs is necessary to inform a policy that is flexible and comprehensive enough to adequately respond to the individual's needs rather than trying to fit disabled persons in pre-set policy categories that do not respond to their needs.

This research study is a contribution to the description and understanding of the deprivation experience of European households as told by seven years of EU-SILC data and by the experience of disabled persons narrated in reports prepared by their organisations. The focus is primarily a comparative one in which the deprivation reality of households supporting disabled persons is compared with the actuality of other households, looking at the broad picture over 32 countries, but also zooming into the details of the story told by the data to articulate factors that interact with

income to contribute to disabled persons' experience of deprivation. Much more work is necessary following this study; how disabled persons live through 'poverty', their experience of which social policies are effective at countering their 'poverty', and their considerations on how social policy can reshape itself to not only neutralise 'poverty' but to guarantee them full active citizenship. Wanting in this study are the direct voices of people living with impairment, their evaluation and reflection on the reality depicted by the comparative data on deprivation and disability, their personal narratives about the ways the complex relationship between impairment and poverty shapes their disability, and their ideas and proposals on policies and services that can secure for them full active citizenship. Nevertheless, the numbers analysed, and the Disabled Persons Organisations' reports examined, do tell a powerful story of a structural surplus of deprivation and the consequential citizenship deficit that reflect the reality of disabled persons and their households in Europe. Such deprivation surplus and citizenship deficit can only be addressed if they are first fully recognised. This study contributes modestly to such an undertaking.

A note on the terminology used in this dissertation

The general terminology used is congruent with the social model of disability. It distinguishes the impairment experience from the disablement that persons experience due to societal and attitudinal barriers. Persons may have an impairment; however, they are disabled by society.

Unless quoting from sources or reflecting terminology used in the EU-SILC surveys, I use the following terminology:

- person with impairment
- persons with impairment
- disabled person
- disabled persons.

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To all of you my deep and heartfelt gratitude.

Declaration

I declare that this thesis is a presentation of original work and I am the sole author. This work has not previously been presented for an award at this, or any other, University. All sources are acknowledged as References.

A handwritten signature in blue ink that reads "Edgar Galea-Curmi". The signature is written in a cursive style with a long horizontal stroke at the bottom.

Edgar Galea-Curmi

15 June 2023

Disclaimer

Parts of this study are based on data from Eurostat, EU Statistics on Income and Living Conditions 2013-2019. The responsibility for all conclusions drawn from the data lies entirely with the author.

Dedication

This thesis is dedicated to...

- all the disabled persons, their families and their support networks whose stories are buried in the numbers of the EU-SILC data and in the words of the Disabled Persons Organisations' reports analysed in this study,

- and also to those disabled persons whose stories of deprivation are hidden and untold, especially those who have lost their freedom to live an ordinary life in the community,

... with a commitment to carry forth your stories and engage in the social changes necessary that you may rewrite your stories of poverty and deprivation to have the freedom and capability to live all that you aspire to.

"In a country well governed, poverty is something to be ashamed of. In a country badly governed, wealth is something to be ashamed of."

(Confucius, sixth century BCE)

"The proper aim is to try and reconstruct society on such a basis that poverty will be impossible."

(Oscar Wilde, 1891, The soul of man under socialism, para 4)

"For, when you are approaching poverty, you make one discovery which outweighs some of the others. ... the fact that it annihilates the future."

(George Orwell, 1933, Down and out in Paris and London, Chapter III, para 14)

"... being poor is living a life of self-denial. To be poor is to be forced to deny oneself constantly. The poor must deny themselves most trappings of:

- *an adult life (their own apartment, framed pictures on the walls, matching dishes);*
- *a comfortable life (a newish mattress, a comfy couch, good shoes that aren't worn out);*
- *a convenient life (your own car, eating out);*
- *a self-directed life (a job you care for, leisure time, hobbies, money for babysitters);*
- *a life full of small pleasures (lattes, dessert, fresh cut flowers, hot baths, wine);*
- *a healthy life (fresh fruits and vegetables, health care, time for exercise);*
- *and so, so many more things that don't fit into those categories (technological gadgets, organic food, travel, expensive clothes and accessories).*

They have to actively deny themselves these things every day. And, since most poor people remain poor their whole lives, they must be prepared to deny themselves (and members of their families) these things, perhaps, for the rest of their lives."

(Lisa Wade, 2015)

Chapter 1. Contextualising and Conceptualising Poverty and Disability

The policy issue at the heart of this thesis is the link between poverty and disability within a European comparative context. That some link exists between living with an impairment and economic deprivation is evident in that practically all European countries have some form of social protection directed towards disabled persons (Baptista and Marlier, 2022). These are policy provisions which, to different degrees, attend to disabled persons' right "to income support that ensures living with dignity" (European Commission, 2017, Principle 17) and to "the right of persons with disabilities to an adequate standard of living for themselves and their families" (United Nations, 2006, Article 18). Yet, the United Nations Committee on the Rights of Persons with Disabilities (CRPD), concluding its initial report on the European Union (EU) in 2015, noted "with deep concern the disproportionately adverse and retrogressive effect that the austerity measures in the European Union have on the adequate standard of living of persons with disabilities" (United Nations, 2015, para. 66). And in a 2020 study commissioned by the European Parliament's Policy Department for Citizens' Rights and Constitutional Affairs analysing the European Disability Strategy 2010-2020, similar concerns are reiterated (European Parliament, 2020). More recently, in its shadow report on the EU compliance with the CRPD and commenting about the "accelerated poverty among disabled people", the European Network on Independent Living (2022, p. 33) argued that "the austerity measures ... are a clear example of how European policy places disabled citizens at greater risk of poverty ... [having] had a devastating and disproportionate impact on disabled people".

Poverty, for disabled persons, takes a distinctive relative perspective, namely the consequential impoverishment of living with an impairment when compared to non-disabled persons. Studying the link between poverty and disability entails the conceptual complexity shaped by how disability and poverty are defined. Moreover, different research tools provide a pluralism of diverse perspectives on the reality under investigation. This thesis adopts a critical realist epistemology to engage in understanding the consequential deprivation surplus in European households supporting persons living with impairment from two perspectives: the story told

through the 2013-2019 European Union Statistics on Income and Living Conditions (EU-SILC) cross-sectional data and the experiences of disabled persons captured in their organisations' reports on their states' observance of the United Nations Convention on the Rights of Persons with Disabilities (UNCRPD). Chapter one covers the conceptual and contextual foundations within which the research question is developed, positioning the broad introduction to the study.

1.1 Study rationale

The lived experiences of persons with a long-term impairment or health condition are characterised by two main actualities that seem to pervade geographical, cultural and economic boundaries: reduced income potential and increased impairment-related costs (Schuelke, Munford and Morciano, 2021; Mont and Cote, 2020; Morris and Zaidi, 2020; Mitra et al., 2017; MacInnes et al., 2014; Shandra et al., 2012; Cullinan, Gannon and Lyons, 2011; World Health Organization, 2011; Wilkinson-Meyers et al., 2010; Saunders, 2007, 2006; Lustig and Strauser, 2004; Zaidi and Burchardt, 2005, 2003; Smith et al., 2004; Yeo, 2001). The main issues relating disability to poverty and material deprivation were described as follows by Camilleri (J. Camilleri, personal communication, August 28, 2014), one of Malta's most prominent and influential senior disability activists and advocates, echoing Batavia and Beaulaurier (2001) analysis on the financial vulnerability and poverty risks of disabled persons:

1. Of course, they vary a great deal depending on the type and severity of impairment, whether one has good family support (i.e., free support) and whether one is single, in a relationship and especially if one has children.
2. The extra costs of disability are definitely huge considerations. These include the purchase, running costs, maintenance and replacement of assistive technology (lifts, wheelchairs and so on), in cases like mine tailored clothing and bespoke shoes (and their replacement), etc, are a constant expense. Heating, cooling, etc involve higher costs. Transport costs, whether hiring vehicles or driving one's own modified car, are higher than they are for non-disabled people.

3. If you have a chronic condition like mine, medical expenses are a constant and these vary from visits to specialists (our condition usually requires specialist intervention), the regular purchase of medicinals, hospitalisation.
4. Interruptions in one's education and/or employment can mean working at a job below one's real abilities, less income and ultimately a depleted pension.
5. With a chronic condition the ageing process is accelerated often resulting in early retirement and again a depleted pension.
6. If one works and earns an 'average' salary, or even slightly above-average salary, one does not qualify for social services, however, the extra costs of disability reduce one's disposable income quite dramatically when one compares expenses with an average non-disabled person's expenses.
7. Ultimately, the result is a drastic reduction of life-enhancing choices and activities: housing options, family holidays, travel (even in one's own country, however in Malta travel abroad is necessary to remain sane), cultural activities, sporting activities, even what one can afford to watch on television. In the end, the definition of material deprivation and poverty is relative to one's socio-economic background. I think it's disingenuous to reduce everyone to the lowest common denominator¹ of minimum wage poverty line. (J. Camilleri, personal communication, August 28, 2014)

This stark reality permeates all ages, all types of long-term impairment or health condition, and all types of households (Hughes and Avoke, 2010; Emerson, 2007; Saunders, 2007, 2006; Zaidi and Burchardt, 2005, 2003). Families with disabled children (Shahat and Greco, 2021; Ghosh and Parish, 2013; Heslop, 2013; Hatton and Emerson, 2009; Anderson et al., 2007; Dobson, Middleton, and Beardsworth, 2001; Bradshaw, 1975), disabled youth and disabled adults (Shandra et al., 2012; Fremstad, 2009), persons with psychiatric disability (Benbow et al., 2014; Li et al., 2012), all experience income poverty and material deprivation in a greater proportion to the general population. In the majority of situations, the income poverty and material deprivation experienced is as chronic as the long-term

¹ In subsequent discussions, Camilleri explained that what he referred to as the 'lowest common denominator' was in fact better understood as the 'highest common factor'; the 'highest common factor' ignores all the factors that are unique to the individual numbers contributing to the 'common factor', while the 'lowest common denominator' includes all the different factors in their highest power that contribute to the multiple.

impairment or health condition (She and Livermore, 2009, 2007; Yeo, 2001). Lister (2021) frames the experience of poverty in the context of the nature and depth of the deprivation resulting from the duration and incidence of poverty. When poverty intersects with other life course events, such as a long-term impairment, the deprivation experienced is recurrent and prolonged, with no end in sight. To the extent that the impairment or health condition contributes to the poverty or material deprivation, the poverty and material deprivation experienced will persist so long as the impairment or health condition remains, unless mitigating measures are factored in. Increase in income or in-kind resources through employment, social benefits and services, family, other informal sources such as mutual aid or faith groups, or through the voluntary sector, all can alleviate the poverty or material deprivation experienced. In this respect, one may argue that the quality of life of someone with a health condition, illness or impairment adversely affecting one's ability to carry out normal day-to-day activities, is only partially related to one's income. While income contributes to deprivation, family or household, informal support network, formal services, and possible other factors, all impact how income translates into one's quality of life or experience of deprivation. Household, neighbourhood, societal and country contextual factors all impact the quality of life of disabled persons (Ratzka, 2013; Batavia and Beaulaurier, 2001; Sandling, 1992; Batavia, DeJong and McKnew, 1991). Although poverty and material deprivation are here used rather loosely, it is necessary to distinguish these concepts when working to derive prevalence measures of persons or households who are poor; persons and households with low income are not necessarily the same as persons and households experiencing material deprivation (Hick, 2015). This discussion is elaborated in the next chapter.

Concomitant with the decreased earning capacity and the increase in daily living costs, housing factors may further contribute to the level of material deprivation experienced by persons with a long-term impairment or health condition and the families that support them (Schaak et al., 2017; Sylvestre, 2017; Beresford and Rhodes, 2008; Heywood, 2004). There are various dimensions to this issue:

- Those concerned may not have the necessary income to ensure decent rented housing or to afford to buy a house;

- They may not be financially 'eligible' to take a mortgage to buy a house or to insure the mortgage through a life insurance;
- Their condition may limit the kind of housing arrangement that could be considered;
- Their condition may involve additional housing adaptation costs;
- Their condition may constrain the nature and quantity of activity one may engage outside one's home;
- Support services may be necessary for those concerned to be able to access housing provisions in the community.

Consequently, many people with a long-term impairment or health condition experience limited housing choices and are confined to live a substantial proportion of their life with such limited choices.

No doubt, housing affordability is a major determining factor in situations of persons at-risk-of-poverty or experiencing material deprivation (Haffner and Hulse, 2021; Kennedy and Winston, 2019; Borg, 2018). The extent to which this dimension contributes to the level of poverty and material deprivation experienced by persons with a long-term impairment or health condition and the families that support them remains to be seen.

Contemporary research on poverty in the EU is gradually incorporating disability in its focus. Until 2015, there was a dearth in reference to disability in the regular publications related to the EU-SILC. Similarly, Eurostat publications on income, social inclusion and living conditions have paid only scant attention to disability in relation to poverty and material deprivation. Nor has the EU-SILC developed any equivalence scales that reflect the additional costs of disability when estimating population poverty and deprivation patterns. However, within the context of the now expired EU 2020 target to reduce by at least 20 million those people who are either in or at-risk-of-poverty and social exclusion, a new interest and focus on disability statistics emerged (Eurostat, 2022a). This policy target focuses attention on the prevalence of persistent poverty and material deprivation and the multiple factors that contribute to them. For instance, one would expect that the more a country spends on disability related services and benefits, the smaller the prevalence of disabled persons living at-risk-of poverty and material deprivation for

long periods. In 2012, public spending in this area varied between a low 0.7% of GDP in Cyprus to a high 4.4% in Denmark, with an average 2% of GDP in the EU27 (Antón, Braña and Muñoz de Bustillo, 2016). Also, social protection expenditure spent on disability benefits varies considerably across the EU. In 2018, Malta had the lowest percentage at 0.6% of GDP dedicated to disability benefits, comparable to Cyprus (0.7%) and Ireland (0.8%) at the lower end, in contrast with Iceland (3.8%), Norway (4.3%) and Denmark (4.7%) at the high end, with an EU28 average of 2.0% (Eurostat, 2018). Some of this significant variation may be due to how benefits are classified, and caution is necessary in their interpretation. This said, from a policy perspective, it is significant to explore the extent to which high expenditure on social protection in the disability sector in a country like Denmark compared to Malta reduces the pervasiveness of poverty and material deprivation resulting from a long-term impairment or health condition. Even more significant from the service user's perspective is the way persons living with impairment experience the corresponding policies that affect them. Does high expenditure on social protection in the disability sector translate into evident and discernible subjective protection against poverty and material deprivation? And how do disabled persons experience cutbacks in the benefits and services they depend on?

The closure of the Independent Living Fund (ILF) in England and the parallel introduction of Self-Directed Support (SDS) in Scotland present a significant contemporary case study on the potential impact of national policy decisions on the wellbeing of persons with a long-term impairment or health condition and the families that support them. Morris (2013b) describes the ILF as enabling disabled persons “to do the things that non-disabled people take for granted such as engage in voluntary or paid work, leisure and education activities” (para. 9). Without the ILF, funding will only be available for basic activities of daily living, echoing Camilleri's (2014) concern that such policies “reduce everyone to the lowest common denominator of minimum wage poverty line” (J. Camilleri, personal communication, August 28, 2014). The emerging evidence on the impact of these policy decisions on the economic wellbeing of persons living with long-term impairment or health condition and on their families shows that such changes lead to increased insecurity and loss to their quality of life, with some improvements reported by disabled people with an improved care package (Jarrett, 2018; Manji,

2017). Clearly, such policy changes have a major bearing on disabled persons' standard of living and their vulnerability to poverty and deprivation.

In addition to acknowledging poverty and deprivation as intrinsic dimensions of many disabled persons' lives and having pointed out the significant impact policies have in contributing to this reality, there is one final point to address in introducing the rationale to this study. It relates to the moral argument for concerning oneself with poverty and disability. Such arguments, for and against, may take different shapes depending on their position on the ideological political and moral spectrum from where they emanate. There is, however, one fundamental value that transcends or rather pervades all mainstream politics, and that is the value of personal freedom. Poverty reduces freedom and poverty combined with disability traps those concerned in a life of limited choices. As Spicker (2007a, p. 84) eloquently articulated it, "if you believe that people should be free, and able to make choices, you believe that they should not be poor".

1.2 Defining poverty

Any academic work on poverty cannot escape the task of conceptualising and defining poverty, even more so if the task involves any measurement of poverty over different time periods or across different settings, communities or countries. There is also the time dimension of poverty, whether poverty is experienced for a short period or as a long-term condition, and the extent or depth of one's poverty from established thresholds, varying from poverty vulnerability to a poverty significantly below any level of acceptable minimum. These aspects of depicting poverty are briefly addressed later in this section.

There are images of poverty that do not require any semiotic or other analysis; the image of a malnourished child sucking the mother's empty breast would not be contested as a definite example of extreme poverty. Such images are not, however, the expected representation of poverty in the developed world. Following the work of Townsend (1979) poverty has always been defined within the context and culture in which it is being studied. While rates of income poverty are understood to be derived as a function of established thresholds, a deprivation approach to poverty

is necessary to take into consideration the context within which poverty is being studied (Townsend, 1979). Poverty is therefore seen as the condition in which individuals, families and groups do not have the resources to live an ordinary life, like everyone else. One is poor if one is deprived of what one needs to participate fully in society (Townsend, 1993).

This relative definition of poverty takes diverse forms and a thorough review of the different conceptualisations and definitions of poverty is undertaken in the following chapter. At this stage, two points are worth highlighting:

- Townsend's relative deprivation approach to poverty, commonly described quantitatively, does not necessarily reflect the individual's experience of poverty;
- In contrast, a focus on the individual inevitably draws attention to one's specific needs in order to be capable of participating in society, going beyond a relative deprivation approach to poverty understood as a set of 'haves' or 'have nots'.

These two points highlight the tension between an idiographic and nomothetic approach to studying poverty and deprivation; given that this study primarily takes a nomothetic approach, it will not address any of the nuances that colour the unique experience of each disabled person and the disabled person's supporting household. Yet, at no point does this study want to imply that disabled persons are some homogenous group which can easily be categorised through a set of normalised or standardised set of needs.

As shall be discussed later, most definitions of poverty are developed to facilitate measurements of poverty that allow for monitoring of rates of poverty, the development of interventions to address poverty, and the evaluation of such interventions. Any conceptualisation and definition of poverty would be concerned with whether to take a narrow or broad approach to poverty, whether to focus on income or living standards, and whether to address the issue of capabilities (Lister, 2021; 2015). And with few exceptions (see for instance Beresford et al., 1999), most discussions and definitions on poverty have been drawn by experts or by policy makers, lacking the voice of people living in poverty. This limitation, and the

corresponding social policy responses to poverty, are prevalent in mainstream social policy and cross both Fabian and neoliberal perspectives (Beresford, 2016).

Likewise, most conceptualisations and definitions of poverty have failed to capture the subjective experience of persons living with impairment who find themselves in situations of deprivation on which they have minimal choice or control. Moreover, it shall be argued that persons living with impairment and their household families experience a subjective vulnerability to poverty that cannot be measured solely by the proxies of income or expenditure. It is this subjective experience of not being able to stop feeling being poor or deprived that has received minimal attention in academic research. How do persons living with a long-term condition experience poverty, material deprivation, and economic deprivation? What is the role of the social policies that impact on how poverty is experienced? What is the role of the family household in mitigating the impact of economic deprivation? And what is the role of the extended informal support structure? How do people living with impairment and their family households see themselves taking on the full ownership of shaping a better future that overcomes the feeling of perpetual poverty or deprivation?

The subjective experience of living in an enduring state of deprivation goes beyond a study on the cost of disability. The cost of disability focuses on the differential expenses that the impairment implies for those concerned. This issue will be covered in more detail below, drawing the following main conclusions on the extra costs of disability:

- There are significant extra costs as a result of living with impairment;
- The extra costs depend on the severity of the impairment, but they also depend on the individual's support structure and on societal barriers;
- One's household family and one's informal support structure mitigate significantly the extra costs of disability;
- There is no formula that can establish the extra costs of disability given the highly individualised case by case situation;
- The extra costs of disability can be addressed in various manners:
 - a. Provide financial benefits that compensate for the extra costs;

- b. Reduce the need of specialised services by increasing access to regular mainstream services;
- c. Provide free goods and services that meet the needs of living with impairment and that would otherwise have to be bought or financed by those concerned;
- d. Reduce the costs of goods and services that are central to living with impairment.

What is clear from the above is that any policy that aims at providing a 'comprehensive insurance cover' for living with impairment has to be designed in a way that is highly personalised. While a focus on the extra costs of disability can go a long way towards mitigating the financial burden of living with impairment, the pertinent question to ask is whether poverty and material deprivation consequential of living with impairment can be addressed solely and completely by compensating for the extra costs of disability. This question has been raised by various disability activists highlighting the dependability of their support structure as the fundamental factor in determining whether living with impairment is experienced as living with deprivation (Belgrave, 2013; Disabled People Against Cuts, n.d.).

The following reality was shared by a disabled person consulted during the development of this project through an informal small group of disabled advocates and activists colleagues who took a keen interest in the study (described later in the methodology Chapter 4, sec. 4.3). Consider the situation of a person with a severe physical impairment, living in their own home with their partner who is their main source of support in their activities of daily living. This person and their partner have both just retired and are now financially dependent on their pensions. The person drives a specially adapted car. Given this person's income, they are not, statistically, considered to be at-risk-of poverty or materially deprived. On a day-to-day basis, the income supports a good quality of life. Yet, this person lives with the fear of all the possible things that can go wrong in the sensitive support structure that maintains their current quality of life: if their partner had to suffer ill health or not be in a position to continue providing 24 hours personal assistance, the replacement of this support with paid staff would be unaffordable; if the car breaks down, the expenses usually involved in fixing them urgently are exorbitant and

upset the family's current delicate financial balance. At the end of the month, if any surplus is left from the two pensions, the immediate consideration is to put aside the remaining balance to save for a rainy day. So, in this situation, economic deprivation and poverty are experienced not as a list of things that cannot be done but as a cognitive state that sees no exit from "living a life of self-denial" (Wade, 2015, para 2). The issues involved in this case are more than a typical case of risk management or a case of someone financially dependent on one's partner. In the first instance, the daily risk experienced is the danger of one's whole life support structure collapsing, with no affordable replacement possible. It is a tiring risk to manage, and difficult to insure against, unless someone is wealthy enough to afford 24-hour personal assistance service or such service is publicly financed. The disabled person is not financially dependent on their partner but dependent on them for maintaining an active living and quality of life.

This having been said, it is essential to inquire on the extent to which the experience described above is shared by different persons and households living with impairment. And if the study shows that this experience is a common one, the reasonable question to ask would be: 'To what extent can different social policies contribute positively or negatively to elevate this experience and allow persons with a long-term impairment and their families to live without the chronic state of austerity and deprivation?' Identifying such positive policies would necessarily be the 'antimatter' of austerity policies: rather than pushing the message 'life cannot afford you' an anti-austerity message asserts that 'life cannot afford not to afford you'.

Identifying the policies that work for people living with impairment and their families is no easy task given the variability that such situations present; yet a focus on the particular needs and situations does not reduce the importance of recognising the shared dimensions of living with impairment (Barnes, 2011). Policies and services often run the risk of either simplifying the eligibility focus to the highest common factor and therefore significantly limiting the potential positive impact of such policies or, on the other hand, trying to address the full spectrum of needs through unworkable and complicated eligibility assessments that dehumanise the potential beneficiaries. In this respect, this research is interested in

focusing on the perspective of those living with impairments and their support structure. What policies and services do persons living with a long-term impairment and their families consider indispensable to maintain or regain a sense of security, a sense of identity, a sense of belonging, a sense of purpose, a sense of competence, a sense of self-actualisation, ultimately their own self-esteem as full citizens exercising their full rights and contribution? No one study can answer such an intricate and wide-ranging question; however, an understanding of the shared deprivation experience of disabled persons can contribute to unpacking some of its complexity.

1.2.1 Short-term poverty

Short-term poverty, or poverty that is episodic, is highly dependent on one's income volatility and events in one's life that can either reduce one's earning capacity or inflict substantial extra costs. Households with annual income modulating around the poverty line are more at risk of experiencing episodes in poverty. Prevalence rates of poverty include significant proportions moving in and out of poverty. Within the US context for the period covered by their study, Morduch and Siwicki (2017) showed how the duration of most poverty episodes persisted for less than a year. Periods of unemployment, increased dependents on a household income, and periods of serious illness all can contribute to episodes of poverty of different durations. The lengths of such circumstances contribute to the length of the poverty episode. Identifying such determinants and their impact is essential to understanding the dynamics of poverty (Kyzyma and Williams, 2017). Alcock (2006) explains how poverty risks change over one's lifetime, and consequently many people experience poverty for short episodes. Poverty is therefore better understood as a dynamic process responsive to policies that facilitate routes out of poverty. Emerson et al. (2010) studied the poverty transitions amongst families with a child having intellectual impairment and found few differences in exposure to, or impact of, events that precipitated poverty when compared to families with no impairment. At the same time, families supporting children with an intellectual impairment were more likely to be poor or become poor and less likely to break away from poverty. She and Livermore (2009) showed how significantly higher rates of poverty amongst disabled working-age adults was primarily due to long-

term poverty and not short-term poverty. Considering everything, one may therefore conclude that poverty and disability have a more long-term relationship than what is evident in the dynamics of short-term poverty.

1.2.2 Persistent or long-term poverty

Different definitions and measures of poverty establish several lengths by which long-term poverty or persistent poverty is determined. For instance, in the EU-SILC methodology, a household is considered to be in persistent poverty if it is in relative income poverty for three years over a four-year period (in the year of study and at least two of the three preceding years). She and Livermore (2009) found that the long-term poverty prevalence rates of disabled persons compared to non-disabled people are significant higher to the relative short-term poverty rates, concluding that “long-term poverty is particularly prevalent among people with disabilities, and prevalence increases with the duration of disability” (p. 253). Stapleton et al. (2006) attribute the persistent nature of disability related poverty to the lack of systematic reforms that promote economic self-sufficiency for disabled persons. While households living with long-term impairment may experience episodes of reduced income or increased costs, the nature of disability-related poverty is predominantly long-term. Persons and families whose life is conditioned by long-term impairment are more likely to experience poverty that is not temporary in nature (Lister, 2021; MacInnes et al., 2014; Alcock, 2006;).

1.2.3 Vulnerability to poverty

A household’s disposable income, wealth or financial reserves, support structures, and needs, all contribute to the resilience of the household’s buffer against poverty in circumstances that either affect its income or its consumption. These factors contribute to one’s vulnerability to poverty, a vulnerability that can be short-term or persistent, depending on similar factors that affect short-term and long-term poverty. Living with impairment affects one’s financial stability cushion from any unforeseen circumstances. Batavia and Beaulaurier (2001) discuss how financial stability concerns all disabled persons and their ability to continue living a non-institutionalised lifestyle, and not just those living at a subsistence level. Although

this vulnerability is not exclusive to families with impairment, Batavia and Beaulaurier argue that “the high-risk status of this population has a double impact on the potential for financial stability—an effect on income and on expenses” (p. 148).

In addition to the factors that intensify or mitigate the vulnerability to poverty of families living with long-term impairment, it is also necessary to focus on how disabled persons themselves perceive and experience such vulnerability. Heikkilä, Katsui and Mustaniemi-Laakso (2020) elaborated the concept of vulnerability beyond the notion of financial vulnerability, pointing out that while the notion of vulnerability can serve both to empower and disempower disabled persons, the recognition of vulnerability as a universal human condition brings together the ideas of universality and particularity; thus vulnerability serves to underline the responsibility of states to recognise the particularity of disabled persons’ needs, but also their resilience and agency, in the implementation of the universality of human rights addressed at ensuring substantive equality for disabled persons. At a more practical level, Virokannas, Liuski and Kuronen (2020) argue for a shift in focus from vulnerable groups or individuals to vulnerable life situations that have a time dimension, a circumstantial and relational context, and that are perpetuated by structural causes. Such a shift addresses the concern that a focus on vulnerability serves to further disempower disabled persons, while accentuating the vulnerable situations that disabled persons experience in greater proportion than non-disabled persons.

1.2.4 Poverty gap

While measures of poverty prevalence focus on headcounts of people and households living below a poverty line, the poverty gap focuses on how far families experiencing poverty fall below the poverty line. If, for instance, the EU-SILC 60% of household equivalised median income is the poverty line being employed, then poverty gap measures will concern themselves with prevalence rates of individuals and households whose income falls below the 50%, 40%, 30%, etc., of median income thresholds. Households living with impairment are not only more likely than households without impairment to experience poverty, but the extent of the poverty

they experience is also higher (Palmer, 2011). A focus on the poverty gap is also useful in understanding the significance of social transfers in reducing the extent of income poverty for households falling below the poverty threshold. For instance, Hick and Lanau (2019) in their study on the contribution of tax credits and social security in reducing in-work poverty in the UK found that tax credits contributed considerably to reducing the poverty gap of households that benefitted from them.

1.3 Defining disability, mental illness and chronic health conditions

The disability rights movement has actively sought to dissociate disability from a medical model that conceptualised disability as an illness (Oliver, 1996; 1990; 1983). In the social model of disability, disability is conceptualised as the limitations resulting from the way society fails to recognise and adapt to the needs arising from an individual's impairment. Even critics of the social model of disability recognise social change and the removal of barriers as a priority (Shakespeare and Watson, 2002); recognising the intrinsic limitations imposed by one's impairment does not ease the reality of all that is structurally disabling in one's living context. There is no doubt that poverty and deprivation shape the impairment experience of disabled persons and their households (Mont, 2019; Sherry, 2016).

The social model of disability has also found resonance with organisations of mental health service users (Cook and Jonikas, 2002). While the predominant model in mental health has been, and still is, a medical one, and has resisted the 'disabled' label ('We may have a mental illness but we are not disabled' narrative), the development of the mental health survivor or mental health service user movement is recognising the need for a social model of mental illness, "one which prioritises service users' perspectives and puts them and their lives in a wider context" (Beresford, 2010, p. 61). The notion of mental health disability, or the disability arising from a mental illness is also increasingly recognised within disability policy (Drake et al., 2012). Then again, persons living with chronic illness are more likely to identify themselves with the condition than with being ill or being disabled, at least as a first point of reference when developing knowledge of one's condition (Sherry, 2016). Dew, Scott, and Kirkman (2016), however, draw a parallel between

disability and chronic illness in the application of the social model of disability to both.

These respective positions, by the groups referred to above, merit careful consideration in any research study that concerns them. Disabled persons have actively sought to move away from a medical model focused on 'fixing' them to one that emphasises the barriers that society imposes on persons with physical, sensory and intellectual impairments. Persons with mental illness, on the other hand, have been more comfortable with an approach that undertakes to normalise the nature of their illness, which like any other illness can be treated. Yet this medical model focuses on the illness outside the wider social context and has been challenged by mental health service users and mental health survivors (Johnston, 2014; Beresford, 2010). The situation of people with chronic mental illness challenges the medical treatment model considering the more long-term interventions and support required. Noteworthy, people with a severe chronic health condition who argue for the particularity of their condition (for instance fibromyalgia) do so to promote the need for investment in research and treatment of the particular condition or to advocate for benefit entitlements. (During the 2010-2015 Conservative – Liberal Democrat coalition government, a petition was submitted to the UK Government and Parliament asking for fibromyalgia to be recognised as a “real” or “genuine” disability. This petition was concerned with the recognition of fibromyalgia as a condition entitling for the Disabled Living Allowance – see Petitions UK Government and Parliament, 2012). Sherry (2016) explains the political significance of impairment specific emphasis as these provide an identity, guarantee organisation membership, and secure resource allocation.

It is therefore not common for research to consider disabled persons, persons with mental illness and persons with severe chronic health conditions in one study. Sherry (2016) argued for a sociology of impairment that gives careful consideration to the power and politics associated with impairment identification. Among the areas he highlighted, five areas merit careful attention:

- Personal refusal of being identified or associated with an impairment;
- Impact of single-impairment politics on collective organising and resource allocation;

- Difficulties with cross-impairment and multiple-impairment organisations;
- How organisations “of” disabled persons differ from organisations “for” disabled persons;
- Hierarchy of impairments that adopt a neoliberal discourse of deservingness.

Sherry’s (2016) discussion is important as it highlights the difficulties of focusing on single-impairment politics and argues for a move towards the “collective experiences which fundamentally revolve around access and inclusion” (p. 738-739). He argued for a robust theory of impairment that matches “the complexities of such personal and collective identifications and subjectivities” (p. 739).

So how can one understand physical, sensory, and intellectual impairments, mental illness and chronic health conditions in a way that respects the ‘personal and collective identifications and subjectivities’? This study is concerned with the shared experience of being trapped in enduring poverty or material deprivation or austerity or self-denial as a result of one’s limitations in earning an income, ensuing from one’s personal condition that also imposes extra costs. Irrespective of whether one identifies oneself as disabled, as having a specific impairment or health condition, or as living with a chronic mental illness, the fundamental concern of this study is the presence of a personal impairment that limits one’s earning capacity and which is not temporary in nature, and which also increases one’s costs of participation in society. The terms adopted throughout this study are ‘living with a limiting long-term impairment, health problem or illness’, often summarised to ‘living with a limiting long-term condition’. Living with a long-term impairment implies a living condition that is not intermittent and that somehow impacts one’s ability to fully participate in society if the necessary supports and resources are not available. The emphasis on ‘long-term’ should not be conceived as necessarily implying a constant state of affairs; there are various conditions that involve irregular or fluctuating needs of acute or increased support needs that imply the requirement of flexibility in any support structure provided. It does, however, mean that the impairment is not one experienced for a short duration or of a temporary nature.

The basic argument that will subsequently be developed is the following: irrespective of the meanings that individuals and their support networks give to

their impairment or their chronic illness, the focus of this study will address the broader questions on how poverty and economic deprivation experienced by this group transmute their impairments or health conditions or illnesses into further disablement, reducing their capability to participate in society. This perspective is not intended to diminish or devalue the personal identity experience of the different groups involved and what it is that they choose to identify with. Rather, the premise guiding this study is that irrespective of the personal embodiment and identity experience, one's personal experience is impacted by society and policy and that this impact may further disable people (Dew, Scott and Kirkman, 2016). One's experience of poverty and material deprivation is a function of this impact, thereby a contributory factor to disablement.

This approach necessarily includes those older people who develop impairments which limit their ability to participate in society without additional support and resources, with the consequential additional expenses. There is, however, one dissimilarity that distinguishes older people who acquire an impairment to persons who would have lived with an impairment for most of their working life, namely a possible differential in one's lifetime earning potential, in one's support needs, and in one's added impairment related costs, impacting the financial reserves and financial stability acquired throughout one's lifetime. Although a distinction is often drawn between poverty and deprivation in the pre-retirement years and poverty and deprivation in the retirement years because of different risk patterns displayed (see for instance Hick, 2015), this study does not draw such a distinction. Neither does the study distinguish between disabled persons who acquire their impairment later on during their lifetime and those who lived all their life with an impairment.

1.4 Poverty and disability

Disability, mental health and chronic illness are not part of mainstay poverty research (Tapor, Ljungquist and Strandberg, 2016; She and Livermore, 2009). So why is a focus on poverty and disability as previously defined relevant to social policy? What are the paths that connect disability to poverty, mental illness to poverty, chronic illness to poverty?

It has been argued rather conclusively that the relationship between disability and poverty is a two-way complex relationship as “disability adds to the risk of poverty, and conditions of poverty increase the risk of disability” (Elwan, 1999, p. i). Disability and poverty are mutually constitutive; poverty shapes disability and disability shapes poverty. This two-way relationship is often understood within the context of a definition of disability that focuses on impairment. For instance, poverty is known to increase the risk of a wide range of impairments and self-rated health through malnutrition and lack of access to health services (Moor, Spallek and Richter, 2016; Groce et al, 2011; Elwan, 1999). On the other hand, impairment adds to the risk of poverty due to impact on one’s earning capacity and one’s impairment related costs (Zaidi and Burchardt, 2005). Both the impact of impairment on one’s earning capacity and the impact of impairment of one’s living costs will be treated in detail further on in this review (see Chapter 2, sec. 2.5). Focusing back to how the conditions of poverty increase the risk of impairment, this review will not, however, concern itself with the extensive research literature that studied the various pathways through which poverty and material deprivation contribute to one’s risk of ill-health, mental illness, and physical or intellectual impairment. The direct causal links relating poverty to increased risk of ill-health, mental illness and impairment are a conclusive argument for addressing poverty as a public health policy concern, an area of concern that goes beyond the focus of this study. Rather, using broadly the social model of disability (Oliver, 1996; Barnes, 1992; Oliver, 1990), the review will centre on the impact of poverty on the subjective experience of persons living with a long-term impairment or health condition and the experience of their families.

Irrespective of one’s health, physical or mental condition, poverty subjects individuals and families to different levels of deprivation. One can experience deprivation without necessarily being income poor; however, poverty is closely linked to multiple or severe forms of deprivation (Townsend, 1987). No doubt, poverty limits one’s ability to do anything that depends on financial resources or time resources. If financial resources are limited, one’s life choices are restricted (Spicker, 2007a). Moreover, the time available for oneself is also limited as more time is needed to dedicate to paid employment to offset one’s limited financial resources, and “managing poverty can be very time-consuming” (Lister, 2021, p. 70).

The preoccupation with poverty overwhelms one's life (Shah, Shafir and Mullainathan, 2015; Shah, Mullainathan and Shafir, 2012). Shah et al. (2018) showed how poverty conditions the everyday experiences of those living it, arguing that "the poor see an economic dimension to many everyday experiences that to others may not appear economic at all" (p. 4) and that "those who live comfortably often experience a different reality from those struggling to make ends meet" (p. 17).

One may therefore articulate the impact of poverty as having a disabling factor on those concerned. The situation is even more acute when the person concerned has a health, physical or mental condition that further limit one's choices unless the necessary resources are available. Consider, for instance, the situation of a person with a mobility impairment who depends on the services of a personal assistant for community access. If the services of a personal assistant are not available due to financial constraints, the person will be severely disabled from accessing the community as a direct consequence of the financial constraints. In this respect, poverty increases disability. Within the social model of disability, one can understand poverty as increasing the societal barriers that act on persons living with long-term impairments and reducing the means to overcome such societal barriers. Poverty directly shapes one's impairment experience.

Poverty further disables because it reduces choices and disempowers. This reality is not restricted to persons living with impairment. However, it is especially heightened in situations where choices are already limited because one does not live in a body that works in the way society is designed to expect it to work, without the need of extraordinary effort and coping strategies that encompass all of one's life. The themes of choice, power and empowerment further influence the philosophical underpinnings of this study. These themes imply a conceptualisation of poverty that is broad and relative, that is understood at the end of a continuum where the other end is full, active and participative citizenship, discussed in more detail in Chapter 3.

1.5 The policy context of this research

This section briefly discusses the policy context of this study including the age of austerity that shapes contemporary social policy and the modern welfare state, the United Nations Convention for the Rights of Disabled Persons (UNCRDP) with special reference to Article 28 on “Adequate Standard of Living and Social Protection”, the EU2020 strategy’s commitment to the reduction in poverty and social exclusion, and the European Disability Strategy 2010-2020 followed by its 2021-2030 sequel strategy.

1.5.1 Age of austerity

Browne (2012) and Blyth (2013) make the convincing argument that austerity politics affect those at the bottom of the income distribution substantially more than those at the top because of the dependence of those at the bottom on the negatively impacted public spending. Persons who lack financial reserves and depend on Government programmes and benefits are disproportionately affected through any tepid retrenchment or freezing of social spending. Persons living with a long-term impairment are more likely to fall within the category of those most impacted by the age of austerity. In a report assessing the impact of European austerity plans on disabled persons, Hauben et al. (2012) stated that “the progress made by many Member States across the EU in introducing positive actions aimed at enhancing the inclusion of people with disabilities slowed and faltered with the onset of the economic crisis in 2008” (p. 4). One of the main cumulative factors resulting from various austerity measures affecting social services was a negative impact on “promoting and ensuring independent living for persons with disabilities” (p. 57). Cuts in disability related social security benefits were only recorded in a few countries but “indirect reduction of benefits and stricter entitlement conditions are the order of the day in most EU Member States” (p. 86), while two countries (Belgium and France) had increased their disability benefits. Halvorsen et al. (2017), reporting findings from the ‘DISCIT – Making persons with disabilities full citizens’ project covering nine European countries, found no substantiation of a significant austerity shift in the social provision directed towards disabled persons. This conclusion drawn from macro indicators does not account for the possible “negative

effects on the security and autonomy of persons with disability” (p. 24) recognised by Halvorsen et al. (2017) as resulting from austerity politics.

Disabled persons and their households do not only depend on disability related benefits; they are proportionately higher beneficiaries of social protection benefits not specifically addressed towards disabled persons. Anecdotal evidence suggests that people with complex needs live with a heightened sense of vigilance (J. Camilleri, personal communication 2014) leading to a state of permanent sense of austerity, insecurity or hardship in their approach to managing their resources and meeting their needs. However, there remains a lack of research data that show how people with complex needs experienced poverty during the age of austerity. Some of the most compelling testimonies come from personal blogs of disabled persons and dedicated media articles that focused on this sector (see for instance retired academic and activist Jenny Morris’ blog [Morris, n.d.] and activist, journalist, academic and political commentator Frances Ryan in the Guardian [Ryan, n.d.]).

The contextual framework of this study necessarily includes the austerity reality considering its contemporary focus, including the impact of the age of austerity, austerity politics and austerity discourse on people with complex needs whose income, partially or in whole, depends on social benefits. This contextual framework gives rise to some important questions that only those impacted can answer. In particular, two relevant questions derive from this context: To what extent do different social policies manage to protect people with complex needs and their families during the age of austerities? And what roles do the family, the informal support structure, and community play in supporting people with complex needs during times of welfare support retrenchment? Though the active participation of disabled persons in this study is absent, the indirect input of disabled persons through their organisations’ critique of their respective countries’ compliance with the UNCRPD can throw some light on these questions.

1.5.2 United Nations Convention on the Rights of Persons with Disabilities

The post 2008 Great Recession austerity policies and measures materialised at the same time that important developments were taking place at a supranational policy

level; within a human rights framework, developments in disability policy over the past three decades moved in a diametrically opposed direction to the retrenchment characteristic of European welfare states.

The 2006 adoption of the United Nations Convention on the Rights of Persons with Disabilities (UNCRPD) is the first legally binding standard adopted at international level to guarantee the rights of disabled persons worldwide. The UNCRPD is a special 'human rights instrument' designed to protect the universal rights of disabled persons, considering that all previous human rights instruments "had been silent on the issue of disability" (Petman, 2010, p. 25) with the exception of one mention in the Convention of the Rights of the Child. Petman (2010) argued that although the rights conferred in the UNCRPD are universal rights, "any meaningful enjoyment of those rights by persons with disabilities will require their ability to participate actively in their communities" (p. 25). By recognising disability as a function of the social environment, the convention pushes states party to the convention to recognise the systemic and structural barriers that require a political and cultural response. The fundamental implications for the policy context are encapsulated in the following quotation:

by focusing on the need to modify the social practices and institutions that turn disability into disadvantage, the Convention in an important fashion acknowledges that the relationship between people with disabilities and those without them is a relationship of subordination on the one side and domination on the other. Furthermore, and even more importantly, it acknowledges that this relationship is no more natural, no more permanent or unavoidable than any other power relationship. Here, the impact of the Convention's argument that people with disabilities should be seen as citizens and social agents – that is to say, equal bearers of human rights – cannot be over-emphasized. It is this argument that will provide for visibility for disabled people as subjects of rights. (Petman, 2010, p. 27)

The long road to the UNCRPD derived from the experience gained as a result of the 1993 UN Standard Rules on the Equalization of Opportunities for Disabled Persons. The Standard Rules provided a policy framework for promoting equality of opportunity for disabled persons and served as a sound benchmark for national

legislation (United Nations, 2006). However, disability advocates had long argued that these Standard Rules were inadequate in bringing about the intended change as they were not a legally binding instrument. The UNCRPD, on the other hand, is legally binding and enforceable to the extent that international conventions are (Mladenov, 2013). As a legally binding instrument it has the potential “to create a paradigm shift in the manner in which disability policy and practice is formulated and implemented” (Lang et al., 2011, p. 208). Yet this potential depends on effective implementation policies and indicators which are anything but universal.

The preamble of the UNCRPD recognises disability as arising from “the interaction between persons with impairments and attitudinal and environmental barriers that hinders their full and effective participation in society on an equal basis with others” (preamble Article e) and recognises the “full and effective participation and inclusion in society” (Article 3c) as a basic principle of the convention. The embedded ideology here combines the social model of disability with the human rights ‘non-discrimination’ approach (Lang et al., 2011), and applies to all ‘persons with disabilities’ irrespective of the nature of their impairments. Power, Lord and deFranco (2014) highlight the principles of self-determination and personalisation as being enshrined in the Convention, mandating the implementation of policies that enable the full engagement and active participation of disabled persons, what they consider as the ‘active citizenship’ philosophy. The limitations of a rights-based approach that does not recognise the capability of different persons to exercise those rights due to their impairments or their social situation has been recognised by Sen (2005; 2004) and will be discussed in more detail in the next chapter (see Chapter 2, sec. 2.2.3.4). Consequently, Power, Lord and deFranco (2014) argue that a right-based approach only works through the implementation of personalised support.

Of particular relevance to this study is Article 28 of the UNCRPD which articulates the obligations of States party to the Convention to secure an adequate standard of living and social protection for all disabled persons (see Appendix A for full text of Article 28). In brief, Article 28 recognises the right of persons with disabilities to “an adequate standard of living for themselves and their families”, “to the continuous improvement of living conditions”, and to “social protection”, stipulating the

obligations of the State to “take appropriate steps to safeguard and promote the realization of this right without discrimination on the basis of disability”. Also, this Article specifically mentions measures to ensure access to:

- “appropriate and affordable services, devices and other assistance for disability-related needs”;
- “social protection programmes”;
- “poverty reduction programmes”;
- “public housing programmes”;
- “retirement benefits and programmes”.

How would the full implementation of Article 28 of the UNCRPD translate itself in social policy? The reply to this question significantly depends on what society accepts as “adequate standard of living” and “continuous improvement of living conditions”. An alternative way of approaching this question is to ask disabled persons to voice their understanding of, and insight into, how social policy can secure them an adequate and continuously improving standard of living and “full and effective participation and inclusion in society”. Fasciglione (2017, p. 518) pointed out how the monitoring body of the UNCRPD evaluated national austerity measures adopted by State Parties for their consistence with Article 28, often expressing its concern “for the adverse retrogressive effect that such measures usually have on the standards of living of persons with disabilities”, and the discrimination involved in the lack of proportional impact disabled persons suffered because of such measures.

Strongly related to Article 28 are Article 19 and Article 27 (see Appendix A for full text of Articles 19 and 27). Article 19 focuses on disabled persons rights to “live in the community, with choices equal to others ... to facilitate ... their full inclusion and participation in the community”. Such a right cannot be fulfilled without the provision of the full range of support and housing services disabled persons require to be able to exercise autonomy in how, where, and with whom they live. Palmisano (2017, p. 354) described this provision as “the essence of the Convention”; emanating from this article is State Parties’ legal obligation “to respect and facilitate full enjoyment of the primary rights of persons with disabilities to live independently and be included in the life of the community”. Article 27 focuses on

disabled persons' right to "gain a living by work" through employment provisions that are inclusive and accommodate their needs. Access to work provides both income and a means for social participation. As Ventegodt Liisbert (2017, p. 501) argued "access to work and employment is both a goal in itself and a means to facilitate enjoyment of other rights such as independent living and social inclusion ... adequate income, political participation, participation in cultural life". These were critical developments at policy level, not necessarily having the impact expected in the austerity age that followed the UNCRPD's enactment.

1.5.3 The European Union Policy Context

As from January 2011, the UNCRPD became legally-binding on the EU and all its member states. It forms part of the EU legal order, and the EU as an institution and all its member states are required to report periodically on their compliance with all the provisions of the convention. The UNCRPD guided the development of the first disability strategy adopted by the EU covering the 2010-2020 period and the sequel to this first strategy covering the 2021-2030 decade (discussed below).

Within the context of the EU 2020 strategy target to reduce by 25% the number of Europeans living below the national poverty lines (European Commission, 2010a), there were two references to disabled persons reflected in the flagship initiative 'European Platform Against Poverty'. The first mention takes place in the context of the Commission's responsibility to promote social innovation to fight discrimination. The more direct reference declares the member states' responsibility "to define and implement measures addressing the specific circumstances of groups at particular risk" including people with disability (European Commission, 2010a, p. 19). In this context, a more important EU policy document is the European Disability Strategy 2010-2020 (EDS10-20) which was developed as the EU active policy instrument to implement the UNCRDP. This policy document refers to the poverty rate of disabled persons being 70% higher than average (European Commission, 2010b, p. 11) and commits the EU to "establish disability-related indicators linked to the Europe 2020 targets for education, employment and poverty reduction". It identifies employment and social protection as the main policy tools to address disability related poverty. Hvinden et al. (2017,

p. 5) critique the strategy for not making “explicit references to disabled people’s *political participation* or to clear and enforceable *rights to social benefit or services*”.

Referring to the Europe 2020 Strategy and based on an analysis of the 2009 EU-SILC data, Choi and Calero (2013) showed how disabled persons are particularly disadvantaged in achieving the targets of the strategy. In the areas where the EU is making progress, the same progress is not being registered for disabled persons. Choi and Calero (2013) analysed the potential contribution of disabled persons to attaining the Europe 2020 poverty targets if policies had to target and address poverty amongst disabled persons. They concluded that on average a decrease of 0.04% in overall EU poverty rate can be achieved from a 1% reduction of poverty among the population of disabled persons. This impact varies considerably among different EU countries because of the significant variability in the prevalence rates of disabled persons. Even when a similar measure is used to identify disabled persons, such as in the EU-SILC surveys, the variability persists; Choi and Calero (2013) rightly argue that this variability reflects the subjective nature of the measure (see explanation of measure in Chapter 4, sec. 4.5.4 – The EU-SILC measure of activity limitation) and its reliance on the particular context and circumstances of each country. Despite this variability, given the significant higher proportion of disabled persons at-risk-of poverty compared to the general population, Choi and Calero (2013, p. 872) deduced that “this social group could make a major contribution to the achievement of the EU 2020 targets” with targeted policies and programmes. Summarising the EU policy context, Hvinden et al. (2017, p. 5) conclude that the overall European situation for disabled persons is a mixed one with “varying and contradictory developments and uneven achievements regarding Active Citizenship” even though the EDS10-20 had declared that “full economic and social participation of people with disabilities is essential if the EU’s Europe 2020 strategy is to succeed in creating smart, sustainable and inclusive growth” (European Commission, 2010b, p. 4).

In 2017, the European Parliament, the European Council and the European Commission jointly declared in Principle 17 of their ‘European Pillar of Social Rights’ that disabled persons “have the right to income support that ensures living in dignity, services that enable them to participate in the labour market and in society,

and a work environment adapted to their needs” (European Commission, 2017, p. 21). This declaration was reiterated and elaborated in the second European disability strategy covering the period 2021-2030 (EDS21-30). Notwithstanding the legally binding UNCRPD and a decade of the EDS10-20, the poverty and social exclusion reality of disabled persons was still much worse than that of the general population, experiencing a distinct standard of living gap compared to non-disabled persons. This reality is acknowledged in the EDS21-30, recognising insufficient labour market participation, insufficient social protection, and extra costs related to disability as the main factors that contributed to the failure of the first strategy to reach the objective of securing an adequate standard of living for all disabled persons. On the extra costs related to disability, the EDS21-30 commits the EU Commission to study “social protection and services for persons with disabilities to examine good practices ... on extra-costs due to disability” (European Commission, 2021, p. 15) and calls on Member States to “define measures to further tackle gaps in social protection for persons with disabilities to reduce inequalities, including by compensating extra costs related to disability and eligibility for disability benefits” (European Commission, 2021, p. 16). One may argue that this focus on the extra costs of disabled persons goes a step further than the UNCRPD Article 28; recognising that living with impairment contributes to inequality in one’s standard of living and a standard of living gap between disabled and non-disabled persons, the EDS21-30 obligates Member States to address this gap through adequate social protection. While the EDS10-20 included the period covered by this study, the EDS21-30 reflects the EU strategy adopted in response to the “considerable barriers” and “higher risk of poverty or social exclusion” still affecting disabled persons after the EDS10-20; in other words, this new EDS21-30 is partially responding to the reality being examined in this study.

1.6 The current research study

1.6.1 Research question

Considering the contextual and conceptual background described in this introduction, the overarching research question guiding this study is the following:

'What is the impact of living with a limiting long-term impairment, health problem, or illness, on a household's experience of material deprivation across different EU countries, and what household, regional and country factors contribute to deprivation in these households?'

This question will be examined through the quantitative analysis of the 2013-2019 EU-SILC cross-sectional data and through the experiences of disabled persons as reflected in the reports submitted by organisations of disabled persons during the 2015-2021 period in critique of their countries' compliance with the UNCRPD, in particular Article 28 but also including Articles 19 and 27. Further questions emanating from the research question have been developed for each section of the study as explained in detail in the methodology Chapter 4. The terminology 'severe activity limitation' is derived from the EU-SILC surveys as explained in Chapter 4.

1.6.2 Boundaries of the study

This study does not address what Grech (2009) refers to as the 'majority world debate' when highlighting the point that "majority world issues remain at worst excluded or at best included in piecemeal fashion in the mainstream disability studies literature" (p. 771). The perspective is limited to a primarily European outlook. There are also practical restrictions emanating from the nature of the datasets used in the quantitative analysis. These limitations are explained in detail in the methodology chapter. As far as the experiences of disabled persons are concerned, this study rests upon the reality captured and depicted in reports mentioned above and described in more detail further on in Chapter 4. Finally, there are the time dimension and language dimension of the study that determine the boundaries of this study. The EU-SILC datasets used cover the years 2013-2019 while the qualitative data was collected from reports published during years 2015 to 2021 reporting on the previous years. Also, given that all qualitative data was collected using reports published in the English language, disabled persons experiences featuring in reports published in other languages are consequently missing.

1.6.3 Outline of this thesis

The above examination of the contextual and conceptual basis encompassing this study's research question imparts the justification of this study: Despite the fact that contemporary European social policy recognises the depletion in economic wellbeing experienced by disabled persons and their households, this reality of impoverishment continues to feature as a chronic attribute of what it means to live with a limiting long-term impairment. It is as if there is no escaping some form or degree of poverty for disabled persons. This reality is taking place within a developing progressive supranational policy context that recognises disabled persons' right to an equivalised standard of living at the same time that austerity policies have characterised the welfare state of the last decade. Understanding the concomitant deprivation experiences of living with an impairment is indispensable if social policy is to break the link between disability and poverty. Yet, the complex diverse 'living with impairment' experience, the broad range of European country and regional realities, and the intricacy of poverty research limit the extent to which one can aim to achieve a definite complete understanding of this reality. This study brings together two approaches on the link between disability and poverty, perspectives that contribute to a better understanding of the deprivation experience of European households supporting disabled persons during the last decade.

This thesis is structured as follows: Subsequent to this introductory chapter outlining the conceptual and contextual foundations of this study, a detailed review of the research literature follows. Chapter 2 examines different conceptualisations of poverty, the relationship of poverty and deprivation and disability, the experience of living with an impairment in the age of austerity, and the impact of austerity on increasing the vulnerability of persons and families living with a long-term condition. Here, I develop the core argument on why a deprivation conceptualisation of poverty affords an appropriate framework to study the link between poverty and disability, carried out in Chapters 5 and 6. The review also considers the research gap in understanding deprivation in European households supporting disabled persons. This review is followed with an examination of the social policy response to poverty and disability in Chapter 3, with an in-depth critique of the notion of citizenship, conceptualising active citizenship as the

contrasting inverse of the limitations imposed by poverty and deprivation. This Chapter elaborates on the question of why addressing poverty is critical for any progress in disabled persons' right to full and active citizenship. It contextualises the analysis of the DPOs' reports examined in Chapter 8. Chapter 4 details the methodological options of this study, covering both the theoretical and practical considerations that influenced the choices involved and their implementation. Chapter 5 and Chapter 6 present the results of the quantitative analysis, starting with the summary findings from the descriptive analysis of the EU-SILC 2013-2019 data followed by a more detailed analysis of 2018 to explore explanatory factors that contribute to deprivation. Chapter 7 discusses the results from the quantitative analysis in the context of literature reviewed and further comparative studies. Chapter 8 introduces the experiences of disabled persons through a selective analysis of a comprehensive array of DPOs' reports, identifying the contribution of this perspective to better understand the deprivation reality of disabled persons and their households. Chapter 7 and Chapter 8 should be read as providing two different partial transitive perspectives on the deprivation intransitive reality of households supporting disabled persons. The rational evaluation of these two distinct perspectives provide an insight into the compounded deprivation resulting from living with an impairment. The concluding Chapter 9 reflects on the impact of this study for social policy and the disability sector in general, while identifying further areas for future related research.

Chapter 2. Poverty, Deprivation, Austerity, Vulnerability and Disability

2.1 Introduction

This chapter reviews the research literature related to the different conceptualisations, definitions, and measurement of poverty, and the parallel implications of such different approaches for the disability sector. The strengths and limitations of the various approaches and the contribution of each approach to understanding the experience of poverty and disability are discussed in depth, leading to the conclusion that a subjective understanding of the lived experience of poverty and disability is essential to value the full experience of impairment in one's life and the implications of living with a limiting, long-term impairment on one's wellbeing and the wellbeing of one's family household. Such a conclusion highlights the limitation of a study, such as this one, that focuses on the aggregate experiences of deprivation of households, with or without a disabled person; and consequently, any general conclusions drawn can only be considered as partial and incomplete. This notwithstanding, the understanding of a shared deprivation story has important policy implications, especially if such knowledge is also informed by the convergence of communal experiences of disabled persons, as endeavoured in the latter part of this study.

Arguing that poverty is both "culture-bound" and "universal", Øyen (1996, p. 4) reasoned that any discussion of poverty benefits from drawing a distinction between causes and manifestations of poverty that are universal and those that are culture-bound. This argument assumes that certain sequences generate poverty irrespective of the cultural context. Although disability is universal, disabled persons experience their disablement within the cultural, political and policy context they live in. This chapter's review is primarily influenced by a European perspective and constrained by its reliance on English texts. In examining different concepts of poverty and their relevance to the experience of disabled persons, the review is therefore limited by "cultural-specific perceptions of values and human life" (Øyen, 1996, p. 16) and what Grech (2009, p. 772) refers to as a "Eurocentric construction of 'poverty'" and the western construct of disability. Barnes and

Sheldon also recognise the fact that attention given to disability and poverty in the 'majority' world is scarce, especially considering the impact of globalisation on increased inequality, with disabled persons getting its worse brunt, referred to as the "poorest of the poor in all societies" (2010, p. 771). However, Barnes and Sheldon (2010) differ from Grech (2009) by arguing for the relevance of the social model of disability to analyse the politics of poverty and disability in the non-western world. Globalisation is replicating the same disabling structures of the western sphere throughout the whole world; yet, even in areas not marked by globalisation, the experience of disabled persons is one of "marginalisation and powerlessness" (Barnes and Sheldon, 2010, p. 775). In such context, the social model of disability forces the attention on the structural reasons behind this poverty experience. Barnes and Sheldon (2010, p. 776) further maintain that "the link between disability and poverty is unequivocal and internationally recognised" concluding that "Western notions of impairment and disability are now commonplace across much of the 'developing' world" (2010, p. 779).

This chapter's review does not overcome Øyen's (1996, p. 16) concern that "Western thought has dominated and almost monopolised poverty thinking". However, it does attempt to meet his call for an approach that links "the universal with the particular ... tying the micro perspective to the macro perspective". In particular, Narayan et al.'s (2000) extensive participatory research with over 40,000 poor people from 50 countries demonstrates the unique and irreplaceable contribution to poverty knowledge not captured by mainstream poverty research when it excludes the direct input of those living the reality it is trying to understand, describe, and explain. The review in this chapter attempts to bring together an understanding of mainstream poverty research grounded in the reality of disabled persons and their family households.

2.2 Conceptualising and defining poverty

The way poverty is conceptualised and defined reflects the value base through which it is perceived, the understanding and explanations one has of poverty, and the policy directions that can address poverty (Lister, 2021). Policy responses to poverty denote a characterisation of poverty, even when not explicitly stated. Any

definition of poverty serves many functions, political, social, practical, and also personal. Walker (2014, p. 2) explains how the meaning of poverty has “changed over time, varies by place and culture, and remains contested — shaped by ideology and politics”. Saunders, while arguing that poverty in simple terms implies shortage or absence of resources required for basic needs, points out that there are various different ways of understanding this simple meaning of poverty, spanning “a broad spectrum of normative and ideological positions” (2004, p. 1). This inability to meet basic needs has to be defined in relative terms, considering the customary community quality of life. Consequently, Saunders argues that a poverty line conceptualisation of poverty is still essential “despite its many conceptual limitations and practical imperfections” (2004, p. 17). Representing a different approach to understanding poverty, Lister (2007) advocates for a conceptualisation of poverty that recognises the humanity and dignity of poor people and their struggle for recognition and respect.

This tension between technical approaches to defining poverty, principally representing a measurement of material poverty, in contrast with a relational and symbolic comprehension of poverty based on the experiences of those living in poverty (Lister, 2015), characterises what Spicker (2007b, p. 242) refers to as two schools of thought representing “a unified understanding of poverty” as distinguished from “a flexible approach to a wide range of problems”. Walker (2014, p. 25) sees different definitions as being “partial, reflecting different conceptions of poverty and exhibiting particular strengths and limitations”. Walker recognises that diverse conceptions of poverty imply different measures of poverty which point toward divergent policy responses, arguing for different measures to be incorporated together to yield “a richer understanding of the experience and complex social construction that is poverty” (2014, p. 30). Hick (2015) showed how the two most common approaches to measuring poverty, the low-income analysis of poverty and material deprivation analysis of poverty, diverge on both the households they identify as poor and in the trends they describe over time, while converge on the at-risk-of material poverty groups they identify.

While Lister (2021) draws a clear distinction between concepts, definitions and measures of poverty, such a distinction is far from clear in the poverty research

literature. Meanings of poverty that allow us to define who is and who is not poor, which are then operationalised in measures for empirical work, all get muddled. Novak (1995, p. 58) critiqued what he referred to as a century of poverty thinking “stuck within an empiricist framework that has concentrated on the measurement of poverty to the neglect of theory and explanation”. This neglect of theory and explanation results in substituting the definition with the measurement and “to be poor is to have less than a certain level of income” (1995, p. 59). Novak further maintains that:

The poverty line, wherever it is drawn, thus defines what is poverty and who is poor, and all that is left is an endless argument as to where the line should be drawn. As a consequence our understanding and definition of poverty becomes arbitrary, partial and inadequate. This concentration on achieving an operational definition of poverty – a definition that can immediately be used to measure and quantify poverty to the neglect of an analytical definition is the greatest hall-mark, and limitation, of most literature on the subject. (1995, p. 59)

This critique is partially addressed in Lister’s (2015) call for a focus on the experience of poverty; however, incorporating the experience of poor people in poverty research alone does not address Novak’s (1995) concern on the absence of theory and explanation.

Some of the concerns raised by Novak (1995) are dealt with by Spicker (2007b) who grouped definitions of poverty in twelve clusters of meaning in an attempt to explicate what the different definitions imply and the theory behind them. Spicker (2007b) argues that no one definition of poverty can explain poverty as the concept of poverty does not have a single meaning. Spicker’s (2007b) structure will be used to discuss the main conceptualisations and definitions of poverty and their application to disability. This structure does not attempt to capture an understanding of poverty in one integrated theoretical perspective; rather, it impels us to understand poverty as a composite of variations on the theme of unacceptable hardship because of one’s material conditions, economic circumstances or social position; each variation is distinct but related to the other, and together form the multifactorial poverty construct.

2.2.1 Poverty as a material concept

The first cluster of poverty definitions groups conceptualisations of poverty that focus on the absence of material necessities. Within this cluster, poverty is considered as a situation in which due to lack of material resources basic needs are not met. This approach covers centuries of basic poverty definitions, from Adam Smith's focus on what is necessary to avert the 'disgraceful state of poverty', through to Seebohm Rowntree's emphasis on 'minimum necessities of merely physical efficiency', William Beveridge's consideration for 'subsistence during interruption of earnings', Peter Townsend's emphasis on resources required 'to obtain the types of diet, participate in the activities and have the living conditions and amenities' typical of particular social contexts, and Joanna Mack and Stewart Lansley's 'lack of socially perceived necessities' (Saunders, 2004). Spicker (2007b) differentiates three approaches to poverty definitions that focus on the absence of material necessities.

2.2.1.1 Need

Poverty is here contemplated as the privation of goods and services considered either basic or necessary to maintain life. This approach may take a narrow or broad approach (Lister, 2021). Commonly, a distinction between absolute poverty and relative poverty is made leading to theoretical disputes on absolute versus relative deprivation. Townsend (1962, p. 210) argued that all measures of poverty are relative concepts because "they can only be defined in relation to the material and emotional resources available at a particular time to the members either of a particular society or different societies". Sen (1983, p. 153) however, while recognising that a relative view of poverty is better than a "simplistic absolute conceptualisation of poverty", argues for an absolute notion of poverty because relative notions of poverty measure inequality rather than poverty. Sen distinguishes between capabilities (what one is effectively able to do, to be, to achieve) and commodities (goods and services or the means to achieve), insisting for "an absolute approach in the space of capabilities" (1983, p. 167) which leads to a "relative approach in the space of commodities" (1983, p. 168). This distinction is discussed further later on in this chapter because of its importance for comprehending disability related poverty. Spicker (2007a) considers much of the

relative/absolute views of poverty to be related to one's views of what constitutes needs and wellbeing. A focus on needs is pertinent to disability poverty because persons living with a limiting long-term impairment may have additional or different needs that lead to additional costs (Zaidi and Burchardt, 2005; 2003).

2.2.1.2 *A pattern of deprivation*

Townsend (1987, p. 125) defines deprivation as “a state of observable and demonstrable disadvantage relative to the local community or the wider society or nation to which an individual, family or group belongs”. It is distinguished from the concept of ‘poverty as need’ because it focuses on conditions rather than resources. Lack of resources may lead to deprivation. But deprivation also depends on other factors such as one's capability of using the resources available (Sen, 2004). Multiple deprivations can lead to poverty and someone can be income poor without experiencing deprivation due to availability of additional resources, while income poverty alone does not account for multiple deprivations (Mitra and Brucker, 2017). Moreover, measures of income poverty and measures of deprivation do not identify the same individuals and households (Hick, 2015). This distinction is particularly important for research on disability poverty considering that the probability of experiencing multiple deprivations is higher for disabled persons. In fact, Mitra and Brucker (2017) found higher prevalence rates of multiple deprivation for disabled persons even in groups that experienced multiple deprivation without being income poor. A fuller discussion of the deprivation conceptualisation of poverty is developed later in this chapter (sec. 2.10).

2.2.1.3 *Limited resources*

The distinction drawn by Spicker (2007b) between needs and resources is an interesting one as it highlights the fact that poverty may be defined as an unmet need or as unavailability of a resource, or a need arising from limited resources. A disabled person may experience poverty because of lack of resources to lead a decent ordinary life through the procurement of personal assistance services. The need for support itself is not a definition of poverty but the reality of not having the resources to meet that need contributes to deprivation from the opportunity to lead an ordinary life.

2.2.2 Poverty as economic circumstances

The second cluster groups definitions of poverty that focus on the lack of financial resources (Spicker, 2007b). In a way, these definitions can be considered as a subset of conceptualisations of poverty that focus on lack of resources.

2.2.2.1 Standard of living

The standard of living definition of poverty does not escape the absolute/relative debate. For instance, the World Bank defines extreme poverty as anyone living on less than \$1.90 (2011 PPP) a day, adjusted for purchasing power parity, adopting an absolutist view. This poverty line was updated in September 2022 to \$2.15 per person per day. The EU adopts a relativist approach, defining someone to be at-risk-of poverty if their equivalised income is less than 60% of the country's median income. Lister (2021; 2015) criticises such definitions because they are measurements of poverty and not clear conceptualisations of what poverty means. They serve a policy purpose; yet, "measures are but imperfect attempts to operationalise definitions" (Lister, 2015, p. 140). The poverty line falls within this notion of poverty definitions. Atkinson (1987) pointed out that variations in prevalence rates of poverty are subject to variations in how the poverty line is drawn. Income based definitions of poverty do not account for different consumption needs (Zaidi and Burchardt, 2005; 2003) or different capabilities to meet needs with one's income (Sen, 2005; 2004).

2.2.2.2 Inequality

An inequality approach to defining poverty focuses on one's disadvantage when compared to others in society (Spicker, 2007b). As already highlighted above, Sen (1983) rejects the idea of a relativist view of poverty because he considers such an approach as focusing on inequality and not poverty. This criticism helps articulate the weakness of operationally defining poverty relative to median income; theoretically, people can move in and out of poverty not because of any change in their quality of life but because of changes in the median income, for instance in time of an economic downturn or economic depression. Inequality approaches to defining poverty are useful in subgroup analysis, such as when we compare households comprising a disabled person with other households.

2.2.2.3 Economic position

Income determines economic groupings of people. One's income, more often than not, determines one's economic position, in society. Townsend (1993) makes the argument that wage and pay structures and other allocation mechanisms in society maintain the privileges of rich and replicate income and wealth inequalities. This approach to understanding poverty highlights the relationship between low income and poverty, especially with the rising prevalence of in-work poverty (Lohmann and Marx, 2018). Whelan, Nolan and Maître (2013) identified clear intergenerational influences in the economic vulnerability transmitted from one generation's poverty to the following generation. Measures capturing poverty at 30% or 40% or 50% of median income tap into more severe economic circumstances. In such measures, the extent of poverty is assessed as the economic position in relation to the poverty line. To the extent that disabled persons and their households feature on the lower end of the household income spectrum their economic position in society is correspondingly subordinate to other households. Moreover, disabled persons also experience low employment opportunities or what is left over, rendering their economic position a marginal one (Waddington and Priestley, 2018).

2.2.3 Poverty as social circumstances

Poverty can also be defined and explained by reference to the particular social circumstance of the group being considered to be in poverty. For instance, one pertinent issue when dealing with eligibility to disability benefits and services is the category of 'types of disability' that either do not meet the eligibility criteria or are categorised in a one-size-fits-all benefit which does not recognise the needs arising from the severity of their impairment (Morris, 2014). Such social circumstances might explain the poverty experienced by the disabled persons who find themselves in bureaucratic or administrative circumstances that exclude them from benefits or services which could make a significant difference to their lives.

2.2.3.1 Social class

A social class understanding of poverty focuses on the socio-economic status of poor persons (Spicker, 2007b). The emphasis on class underlines the structural factors that sustain poverty. Novak (1995, p. 63) insists on a meaning of poverty that

recognises class as an important part of “the context of the power relationships ... that structure people’s access to income and wealth”. Townsend (1986) focuses on class to describe the structures and processes that generate poverty and contribute to its growth. There is, however, a negative consequence to this understanding of poverty because it reinforces the process of ‘othering’ (Lister, 2021) and the risk of describing poor persons as pertaining to an underclass in terms of their socio-economic status (Spicker, 2007b). Involving people with experience of poverty in policy making has shown that some people resist being identified as poor (Lister, 2007). Similarly, a social class understanding of disability poverty has both positive and negative implications. On the one hand, it recognises the fight against discrimination as a political struggle (Oliver, 2013). In contrast, it may reinforce the ‘othering’ of disabled persons by stereotyping them as “pitiable and pathetic ... an object of violence ... laughable ... having a chip on their shoulder ... a burden/outcast ... non-sexual or incapable of having a worthwhile relationship ... incapable of fully participating in everyday life” (Rieser, 2006, p. 152).

2.2.3.2 Dependency

The expression ‘a culture of dependency’ is synonymous with public perceptions of poverty. Using the 2008 data of the European Social Survey of 29 European countries, Likki and Staerklé (2014, p. 147) concluded that culture of welfare dependency opinions were associated with the increased presence of “negative attitudes toward welfare policies in favor of groups traditionally considered undeserving (the unemployed), but also toward policies in favor of deserving groups (the sick and the old)”. Even if disabled persons had to be perceived as deserving of welfare benefits, a dependency conceptualisation of poverty, similar to the social class definition, may contribute to their further ‘othering’.

The association of poverty with a dependency conceptualisation plays into the popular construction of the ‘deserving’ and ‘undeserving’ poor. Katz (2013) discussed the historical developments in how America has viewed poverty, focusing on ideas on who deserved assistance and the development of the culture of poverty mindset involving dysfunctional families, immoral behaviour, indolence and other inherited deficiencies. Romano (2018), taking a wider perspective, argued that while the idea of who deserves to be helped by society has undergone and continues

to undergo transformations, it continues to persist in public perception and in public policy, taking on different narratives in different contexts, but being “instrumental to the achievement of social order and productivity goals” (p. 28) as determined by the non-poor. Lister (1999) attributes to Murray’s (1994/1999; 1990/1999) two essays the popularisation of the ‘underclass’ idea in the British political, academic and media discourse, arguing that the concept cannot now be ignored. For Murray (1990/1999), ‘underclass’ described a social category of poverty rather than the extent of poverty. Murray’s concept of the ‘underclass’ also includes the notion of ‘dependency’, focusing on a poor person “defined not by his condition, e.g. long-term unemployed, but by his deplorable behaviour in response to that condition, e.g. unwilling to take the jobs that are available to him” (Murray, 1999, p. 83). Murray’s contribution draws a focus on poverty problems that cannot be solved by money or in-kind resources, asking some pertinent questions: “Which segments of the poor population ‘repeat the pattern of disadvantage’? Are they randomly scattered throughout people below a certain income level, or are there common elements among them?” (1999, p. 84). Having given a detailed analysis of the aetiology of the ‘underclass’ construct, Lister (1999, p. 10) rejects it because the “language of disease and contamination associated with the ‘underclass’ conveys a pathological image of people in poverty”. Instead of contributing “to make the case for the restoration of full citizenship rights to the poor” (1999, p. 10), the conceptualisation of poverty as ‘underclass’ risks promoting “writ[ing] them off as beyond the bonds of common citizenship” (1999, p. 10). Consequently, this concept obscures “the structural forces which are pushing more and more people into poverty and ... the resourcefulness and resilience with which many of these ‘victims’ respond” (1999, p. 12). It is interesting to point out that even though in theory disabled persons would not fit Murray’s notion of ‘underclass’, changes in policies and political rhetoric do not spare disabled persons from becoming the new ‘folk devils’ with a noticeable upsurge in public language that focuses on disability benefit fraud that portrays disabled persons negatively, especially for people with mental health conditions (Ryan, 2016b; Briant, Watson and Pilo, 2013; 2011) as shall be discussed in more detail later on in this chapter when examining the effect of austerity on disabled persons.

2.2.3.3 *Lack of basic security*

Poverty can also be experienced as lacking the basic security and peace of mind that allows someone to function 'normally'. Spicker (2007b) discusses definitions that depict poverty in terms of the ongoing struggle to make both ends meet or the prolonged insecurity that interferes with one's rights and responsibilities. By this definition someone can experience poverty although not necessary lacking the basic day-to-day needs. This conceptualisation of poverty is akin to the concept of financial vulnerability as developed by Batavia and Beaulaurier (2001) to understand disability poverty risk. Given the importance of vulnerability for understanding disability poverty, it is discussed in greater detail further on in this chapter (sec. 2.8).

2.2.3.4 *Lack of entitlement*

Under the lack of entitlement definition of poverty, Spicker (2007b) categorises Amartya Sen's approach to poverty, arguing rather sketchily that for Sen people are poor if they lack entitlements rather than if they lack essential items. Sen's theory of poverty, however, cannot be reduced to a mere focus on entitlements. His approach focuses on the poor rather than on poverty, focusing on the capability that an individual requires to do or be whatever they aspire for (Sen, 1999; 1995). Addressing poverty means enhancing human capabilities, the "overall capability that any person has to lead the kind of life she has reason to want to lead" (Sen, 2004, para. 11). Fighting poverty implies enhancing people's freedom through the development of people's capabilities, and people's capabilities are enhanced by removing the unfreedoms they experience, a paradigm shift from a focus on economic growth to the so-called 'human development approach'. Implied in Sen's approach is a normative theory of justice; everyone should have the freedom to achieve wellbeing as reflected in one's capability, one's actual possibilities and opportunities, to lead the kind of life one has reason to want to lead.

Hick (2012) sees in Sen's capability approach a potential conceptual framework that reproaches the common notions of poverty and deprivation with the expansive multidimensional concept of social exclusion. This approach focuses on the factors that limit one's capabilities to live one's life, and one's resources are only part of such factors. For Hick (2012), deprivation in its broad sense should focus on the

capabilities (or lack of capabilities) that condition people's lives; in this approach, the lack of means normally associated with material poverty is only of one, albeit important, constraint that affects one's capability. There are many other constraints that lead to destitute lives and the capability approach pushes poverty analysis to focus on multiple deprivations. As an example, Hick (2012) mentions the discrimination that constrains disabled persons from participating in society. Such a broad approach to poverty analysis corresponds to the social model understanding of disability as arising in the constraints society imposes on persons living with impairment, discussed in more detail in the next paragraph which focuses on Sen's (2004) application of his understanding of poverty in relation to disability.

Sen (2004) points out that a disabled person experiences a number of constraints or 'handicaps' to achieve the same outcome akin to a non-disabled person which he terms 'earning handicap' and 'conversion handicap'. An 'earning handicap' includes all the well documented barriers a disabled person experiences to keep a fair-earning employment; a 'conversion handicap' groups the barriers the disabled person experiences to convert the earnings into a comparable quality of life to the non-disabled person. For Sen (2004), this example highlights why income-based definitions of poverty are inadequate and why a focus on the inadequacy of basic capabilities is necessary:

With the same level of income a disabled person may be able to do far fewer things, and may be seriously deprived in terms of the capabilities that he or she has reason to value. For the same reason for which disability makes it harder to earn an income, disability also makes it harder to convert income into the freedom to live well. (para. 13)

... a disabled person may need more resources and primary goods to achieve the same capabilities, even if he or she has exactly the same conception of the good as others have. People with physical or mental disabilities have to incur extra costs to do the same things that others do with ease (such as walk, talk, or see) ... (para. 19)

Sen (2004) applies his notion of 'conversion handicap' also to the barriers that disabled persons experience in accessing social facilities and converting them into

opportunities that they use. A focus on assets and resources that are external to the disabled person does not necessarily reflect the ability of that person to convert such assets and resources to quality living. The only way to address disability poverty is therefore to focus on individual capabilities, a focus that takes into consideration the family and community context as intrinsic to the personal, social and environmental conversion factors.

Amartya Sen's capabilities definition of poverty, though not applicable only to the disability sector, provides a powerful conceptual framework to study the relationship between income and deprivation for persons living with a limiting long-term impairment, health problem or illness, and their families, namely by focusing on all the contextual factors that may impact one's capability to live an ordinary life and reach one's potential. Moreover, the capability definition of poverty as applied to disabled persons draws the focus on critical factors that disabled persons require to be able to participate in community and not to feel shamed in public, two essential capabilities that Sen identifies as fundamental for the avoidance of poverty (Peacock, 2017).

2.2.3.5 Exclusion

The concept of exclusion eludes any clear agreement in both academic circles and public discourse (Lister, 2021; Bryne, 2005; Atkinson and Davoudi, 2000). It has been used to explain a broad concept of poverty (see for instance Howarth et al., 1998, and subsequent 'Monitoring poverty and social exclusion' New Policy Institute/Joseph Rowntree Foundation reports) or to differentiate poverty from accounts of deprivations beyond financial means (Duffy, 1995). Spicker (2007b) makes the point that the use of the exclusion paradigm at EU level has provided an acceptable discourse to debate poverty in a broad sense, paralleling Atkinson and Davoudi's (2000) earlier point that the concept had contributed to keeping the issues of poverty and inequality on the EU policy agenda. An exclusion definition of poverty underscores its multidimensional nature (Kakwani and Silber, 2007). Hick (2012) critiques social exclusion's lack of conceptual clarity on whether it represents "an outcome or a process" (p. 297) and on whether it also includes voluntary social exclusion (because of voluntary social exclusion's possible negative effect on social cohesion). Decancq et al. (2014) critique the concept of social

exclusion as compared to the notion of poverty because of its “wide scope and vagueness” which make it “encompass many different concerns and fit into divergent, even conflicting, political agendas” (2014, p. 62). This critique parallels Hills (2009) concern with the way ‘social exclusion’ is used to mean diverse social issues and their possible causes. As a consequence, its analytical usefulness is limited. Such conceptual unclarity and ambiguity is also evident in the way the EU-SILC employs poverty, material deprivation and work intensity measures to define at-risk-of-poverty-or-social-exclusion rates (see sec. 4.5.3).

2.2.4 Poverty as a moral judgement

In an argument against Townsend’s quest for a scientific and objective measurement of relative poverty, Piachaud (1981) differentiated poverty from any notion of objectively measuring inequality between and within countries, the main difference being that the term poverty implied a “moral imperative that something must be done about it” (1981, p. 421). Poverty for Piachaud is a value judgement and seems to imply that it cannot be scientifically measured, although he does later favour “a unique and scientific and objective measurement of poverty” (Piachaud, 1987, p. 161) clearly referring to a measurement of absolute poverty. In his reply to Piachaud’s (1981) critique, Townsend (1981) does not engage the ‘moral imperative’ argument but instead explains why a democratic approach to understanding relative deprivation is better than an expert-defined threshold reflecting preconceived social perceptions of helping poor people. The argument implied in this exchange is that while poverty is never morally neutral, a scientific approach to understanding poverty is still necessary to develop the policy approaches that can address poverty. The moral judgement definition of poverty is not helpful in increasing an understanding of poverty or policy solutions to poverty; however, it depicts the unacceptability of poverty. It would be unlikely, for instance, to see the explicit promotion of increased poverty in a political manifesto!

The moral judgement definition of poverty also plays an important role in the operationalisation of the consensual definition of poverty which involves the development of a list of deprivation indicators through a democratic consultative approach, namely the consensual definition of poverty pioneered by Mack and

Lansley (1985) and which now forms the basis of the EU-SILC measurements of material deprivation. Although Spicker (2007b) points out that the moral nature of this approach to defining poverty does not lend itself to fostering an agreement on what constitutes poverty, the consensual approach to defining deprivation is one attempt at overcoming this difficulty.

2.2.5 Poverty defined by poor people

How is poverty experienced, understood and explained by people who experience it?

In one of the first studies involving poor people in articulating their experience of poverty, Narayan et al. (2000) identified five categories of poor people's definitions of poverty:

1. Complex multidimensional phenomenon, meaning different things to different people depending on their context, gender, status, experience and other social factors;
2. Lack of multiple resources necessary for material wellbeing, the absence of which leads to physical deprivation;
3. The psychological state of powerlessness, lacking voice and independence, being vulnerable to exploitation, rudeness, humiliation and inhumane treatment, not being able to be part of community life, and experiencing a breakdown in social structures;
4. Absence of roads, transport, water, health facilities and other basic public infrastructure, with some reference to education;
5. Lack of physical, human, social and environmental assets.

These understandings of poverty by poor people illustrate a complex subjective picture. While definitions categorised 1, 2, 4, and 5 above have their parallel in the conceptualisations discussed in the previous sections, the definition of poverty in terms of the psychological state it involves is particularly illuminating. A poor man from Kenya described poverty as "humiliation, the sense of being dependent on them, and of being forced to accept rudeness, insults, and indifference when we seek help" (Narayan et al., 2000, p. 26). This understanding conceptualises poverty in

terms of the emotional and spiritual state of being poor. It also includes the lack of choice and restriction on one's ability (or capability in Sen's terms) to be part of community life.

Beresford et al. (1999) engaged people with a direct experience of poverty in articulating their own definitions of poverty. The responses were categorised in three groups:

1. Definitions based on financial and material considerations;
2. Definitions based on restricted choices;
3. Definitions based on psychological and spiritual attributes.

While the first two categories have similar definitions in mainstream understanding of poverty, definitions comprehending poverty as a psychological or spiritual state do not have a counterpart in poverty research. It represents a notion of poverty more attune to mindfulness or spirituality.

Embarrassment, shame, comparing oneself to someone in a better situation, experiencing negative categorisations and feeling judged by others, were all part of the experience of families living everyday life on a low income (Daly and Kelly, 2015). People who blamed themselves for their situation were more likely to experience both shame and embarrassment while those that saw their situation as resulting from external circumstances were more likely to report situations of embarrassment than shame.

People experience poverty also in terms of insecurity and dependence (Dagdeviren, Donoghue, and Meier, 2017). Poverty narratives from nine EU countries distinguished how material hardship was experienced by people who became poor as a result of the 2008 crisis, as compared to those who were already poor prior to the crisis. People experienced poverty in relation to what they were used to. Those who became poor understood the impact of their new deprivation in relation to loss of status and were less equipped to deal with their new situation. This finding highlights the importance of recognising the dynamic and subjective nature of poverty. Dagdeviren et al. (2017) point out that contrary to the 'dependency' neoliberal discourse characteristic of current political debate, participants experienced poverty as distressing because of the related dependency and

insecurity. Being dependent on welfare benefits did not give participants the ability and security “to plan future and live with autonomy” (2017, p. 382).

2.3 Measuring poverty and disability research

Measurements of poverty theoretically follow from clear conceptualisations of poverty; yet, as previously highlighted, some operational definitions of poverty do not have a clear conceptual basis (Lister, 2021). The preceding review of different definitions of poverty underscores some of the challenges in studying poverty through its measurement, and in measuring poverty outside a theoretical framework, a point argued strongly by Novak (1995). Measurement runs the risk of becoming devoid of any substantial meaning in relation to the experience of poverty. It has an important role in poverty research especially in providing macro perspectives on trends and impact of policies (Lister, 2015). On the other hand, the experience of poor people provides the living embodiment of poverty missing in poverty statistics.

Having reviewed different conceptualisations of poverty, some important considerations emerge in the context of disability poverty research, although not exclusive to disability:

1. A focus on income poverty alone cannot capture the reality of disability poverty and wider dimensions are needed. This point emerges distinctly in Sen’s capability conceptualisation of the experience of poor people;
2. Poverty is not static. Even in disability poverty, a distinction between persistent, recurrent and transitory poverty is necessary. Lister cited in Hills et al. (2000, p. 294) points out the need for “a more dynamic approach to the understanding of poverty which looks at different kinds of poverty trajectories ... poverty research [will be] about processes and not just outcomes”;
3. A democratic poverty or deprivation standard, though valuable in determining concepts of socially perceived needs (Hills et al, 2000), do not necessarily account for non-mainstream basic essentials of disabled persons;
4. Using poverty research to map out poverty and describe its impact portrays people experiencing poverty as a homogenous group of passive victims.

- Disabled persons demand to be active participants in research that concerns them (Hills et al., 2000) and cannot be considered as one homogenous group;
5. The perspective and experiences of people in poverty is essential for poverty research to concern itself with policy and what works in what circumstances.

Palmer (2011) critiqued different definitions of poverty and their application to disability, pointing out that irrespective of how poverty is conceptualised, a strong link emerges between poverty and disability. Research based on income poverty does not account for the extra costs of disability, thereby underestimating the prevalence of disability related poverty; standard of living approaches based on consumption patterns give an aggregate indirect account of disability-related extra costs, undermining the heterogeneity of such costs; equivalence scales based on consumption patterns also depend on an aggregate proxy of disability related costs; economic resources approaches to poverty research aimed at estimating one's capability to meet one's needs underestimate needs, possibly because disabled persons and their families adjust to lower expectations. Consequently, Palmer (2011, p. 216) concludes that "a comprehensive approach to the measurement of disability and poverty is required". Such an approach cannot be achieved in one study; therefore, any one study on disability and poverty (such as this study) is necessarily partial and its results are therefore part of an incomplete picture.

More recently, Heslop (2013) identified a number of methodological problems in disability poverty research, namely: variability in measuring disability; the limitations of direct income comparisons as they do not account for the extra costs of disability and the possible use of equivalence scales to adjust for these costs; and the importance of using additional poverty indicators recognising disability poverty as a unique type of poverty and not just about low income. Heslop's (2013) and Palmer's (2011) conclusions converge on the importance of using a broad perspective to researching and understanding disability poverty. On the variability in measuring disability, Heslop's (2013) recommendation is a self-reporting measure combining a question addressing the presence of a long-standing illness, disability or infirmity, and a second question asking whether the impairment limits one's activity in any way. These recommendations approach the measure adopted by the EU-SILC for health and activity limitation (see Chapter 4, sec. 4.5.4).

2.4 Poverty, financial hardship, and living with a limiting long-term impairment, health problem or illness

So, what does the research literature tell us about poverty, financial hardship, and living with a limiting long-term impairment, health problem or illness? In the introduction to this study, the main points that characterise this relationship were summarised as follows:

- Disabled persons and their households commonly experiencing a reduced employment earning potential, or what Sen (2004) refers to as an “earning handicap”;
- Social protection benefits are generally not adequate to cover the reduced employment earnings of disabled persons but are more likely to provide solely for basic maintenance;
- Living with a long term activity limitation impairment or health condition frequently contributes to increased costs, or what Sen (2004) refers to as a “conversion handicap”;
- Households with disabled persons are more likely to experience poverty compared to other households;
- Poverty shapes the impairment experience and the consequential disablement;
- Disabled persons are not a homogenous group and their ‘poverty experience’ depends on various factors, not least their formal and informal support structures.

The above summary points towards the assumption that disability cannot be considered simply as just one other factor that may contribute to poverty; in other words, there is a link between disability and poverty that cannot be discarded as incidental, inessential or peripheral to the nature of both living with a long-term impairment and experiencing long-term poverty. But does the research literature support the notion of a structural yoke between disability and poverty? To what extent do disabled persons navigate a world that is designed by and for the non-disabled male archetype as its expected default person, thereby experiencing a gap that has a structural deprivation dimension?

2.4.1 Disability and poverty

In a comprehensive review of the research literature on disability and poverty, Elwan (1999) identified a close association between disability and poverty; disability contributed to poverty and poverty contributed to disability. The focus here is the impact of living with a limiting long-term condition and associated poverty and deprivation. Noting that disabled persons are poorer as a group than the general population in both their income and assets, Elwan (1999) identified three ways in which disability impacts financially: loss of employment related earnings; additional direct and indirect costs; exclusion from mainstream public and community services. These factors affected both the individuals concerned and their families, especially family members with reduced earnings because of care responsibilities, a factor impacting women disproportionately. Lower education and lower employment status were common amongst disabled persons. Disabled women experienced additional disadvantage because of their gender (Sépulchre, Schuller et al., 2018; Hanna and Rogovsky, 2006); income, education and employment indicators consistently showed an unfavourable gap between disabled women and disabled men (Cambois, Solé-Auró, and Robine, 2019; Reine, Palmer and Sonnander, 2016). Older persons who developed impairments were also more likely to experience poverty compared to other older persons, contributing to old age being identified as a poverty risk group in national prevalence studies (Elwan, 1999).

A more recent review (Heslop, 2013) focusing on disability and poverty related research in the UK context identified similar strong associations between disability and poverty. Using income poverty measures without factoring in the extra costs of disability, children or adults living in a household with a disabled member experienced poverty at a significantly higher rate to other households. The situation was even worse in households not receiving any disability benefits or where one of the household members took on carer responsibilities. Even when not experiencing poverty, the household median income was significantly less than that of comparable other households. Similar results were found using deprivation measures. Heslop (2013) associates the overall higher prevalence of disability related poverty and deprivation to the extra costs of disability, pointing out that

these factors had an impact on both the prevalence of poverty and its duration. Disability-related benefits reduced disability related poverty; however, the coverage and targeting of these benefits left significant numbers without any benefits. In families without benefits, the incidence of poverty is higher. Activation measures supporting disabled persons in employment may contribute positively to the financial standing of those who can benefit from such measures; however, they risk further stigmatising the residual group who will continue to depend solely on disability benefits. Heslop (2013) concludes that disability poverty related research needs to better distinguish between the impact of temporary disability and the long-term impact of living with an impairment. Further, disability intersects with gender, race, locality, and other factors, and these factors shape the poverty and deprivation experienced (Maroto, Pettinicchio and Patterson, 2019).

Another review by Tinson et al. (2016) on the situation of disability and poverty in the UK concluded that a reduction in poverty of disabled persons and their families was necessary to have a significant reduction in the overall poverty rates in the UK. This conclusion arises from the nature of disability related poverty which is more long-term than transitory. Choi and Calero (2013) made a similar argument in relation to the Europe 2020 strategy and its poverty reduction targets. Tinson et al. (2016) further conclude that a social investment approach alone will not reduce disability poverty, highlighting the impact of the renting housing market, disability benefits eligibility and high insurance costs as contributing to disability poverty and deprivation.

Nys, Meeusen and Corluy (2015) used the 2005-2009 EU-SILC data to study the impact of disability on the work intensity of a household. The lower work intensity rates in households with a disabled member was only partially explained by the employment status of the disabled household member. Effectively, the low work intensity rates of the disabled household member contributed to part and not all of the low work intensity rate of the household. Not surprisingly, the authors concluded that the employment levels of the non-disabled household members are affected by the presence of a disabled member in the household. In the same study, comparing EU countries with similar disability policy orientations, Nys, Meeusen, and Corluy (2015) factored in the possible impact of social benefits that can serve

as a replacement to paid employment (such as a variable carer's allowance which depends on the hours of care given to the disabled person) on the choice that household family members have in deciding on the extent to which they would engage in paid employment. This focus is important when studying the economic status of a household. Work intensity is highly related to level of economic wellbeing; households with low work intensity are more likely to be at-risk-of poverty. It is logical therefore to argue for policies that increase the work intensity of households. Yet, Nys, Meeusen, and Corluy's (2015) study shows that lower work intensity can be a positive choice by households where social benefits recognise the caring role household members accomplish with their disabled members. It is pertinent to point out that if for statistical purposes the caring role of household members (which is recognised through the payment of social security benefits) had to be defined as work, the work intensity rates in such families would better reflect what is happening in terms of work that is not remunerated.

At EU level, data collected through EU-SILC annual surveys has since 2015 provided a preliminary overview of the impact that activity limitation (the EU-SILC measure for disability, discussed later on in Chapter 4, sec. 4.5.4) has on one's risk of poverty and social exclusion. The published data from the 2021 EU-SILC data (Eurostat, 2022a), highlights the following salient points:

- Comparing individuals with some or severe activity limitation to individuals without activity limitation in the EU-27, 29.7% vs 18.8% were at-risk-of poverty or social exclusion (AROPE). The EU-SILC defines at-risk-of poverty or social exclusion as a summary statistic of individuals who live in households that are either at-risk-of poverty (AROP), or households with severe material and social deprivation (SMSD), or households with very low work intensity (LWI), (explained in more detail in Chapter 4, sec. 4.5.3); 21.1% compared with 14.9% were AROP; 10.9% vs 4.9% experienced SMSD; and 18.5% vs 6.6% lived in households with LWI (Eurostat, 2022a);
- There are significant differences in the AROPE between the two subgroups of households across all countries and these differences cannot be explained without considering the sub-indicators (AROP, SMSD and LWI) making up the AROPE and the performance of the different countries on each sub-indicator. The difference in the at-risk-of-poverty rate between those with and without

activity limitation is not necessarily paralleled by an equivalent difference at the level of material deprivation. So, for instance, Luxembourg's 2021 percentage indicators for households with and without activity limitation are the following: AROPE 24.7% vs 17.3%, AROP 19.2% vs 14.7%, SMSD 3.8% vs 1.5%, LWI 12.0% vs 3.7%; or France, AROPE 28.1% vs 15.9%, AROP 18.6% vs 12.1%, SMSD 11.2% vs 4.1%, LWI 22.0% vs 7.0%; or Italy, AROPE 27.1% vs 24.3%, AROP 19.2% vs 19.6%, SMSD 8.3% vs 5.2%, LWI 19.7% vs 9.8% (Eurostat, 2022a) – in each case the AROPE rate is telling (or hiding) a different story and does not reflect either the AROP difference or the SMSD difference between the two subgroups of households. In actual fact, the AROPE composite measure is not helpful in describing the nature of poverty or deprivation experienced by disabled persons and their households;

- People with activity limitation depend significantly and disproportionately on social transfers. Without social transfers, 68.2% of persons with some or severe activity limitation would have been at-risk-of poverty in 2021 compared to 45.3% of persons without activity limitation, a difference of 22.9%. After social transfers, the difference goes down to 4.3% (21.1% compared to 16.8%) (Eurostat, 2022a);
- There is an overall reduction in AROP for persons who are in employment; in-work poverty rates are significantly lower than general poverty rates. However, similar to the general trend, there are more people with activity limitation in employment who are at-risk-of poverty (10.7%) than people without activity limitation who are in employment and still at-risk-of poverty (8.7%) (Eurostat, 2022a).

These summary aggregate statistics follow general similar trends throughout all the different countries; they point towards similar patterns of association between poverty and disability throughout the EU, albeit with variations. This association between disability (operationalised as 'activity limitation') and poverty and deprivation appears to be a substantial one and is analysed in detail as part of this study.

Some researchers have made the argument that it is the socioeconomic position of families and not the presence of impairment that accounts for the higher prevalence

of income poverty and hardship in families supporting a child with impairment (see for instance Shahtahmasebi et. al., 2011; Emerson et al., 2010). Such an argument shifts the focus from the impact on the household of living with a limiting long-term condition to other factors that contribute to their risk of poverty. Irrespective of the direct impact of the impairment on a household's risk of poverty, the level of financial hardship resulting from the impairment is definitely a factor of a household's socioeconomic position; evidently, those with least resources will experience the greatest hardship with any reduction in income and increase in expenditure. In this respect, poverty can be seen as the reality at the most severe end of the financial hardship continuum. Understanding poverty and disability necessitates that we understand also the relationship between financial hardship and poverty, and financial hardship as a form of material deprivation.

2.4.2 Limiting long-term health problem or illness and poverty

A limiting long-term health problem or illness has detrimental socioeconomic impact on those who experience it and their families. The nature of this impact depends, in part, on the availability or otherwise of accessible health services. The situation is extremely different for persons living with a long-term health problem or illness who do not have their health costs covered by some form of health insurance. Moreover, not all long-term health problems or illnesses condition one's activity to the same degree. Poverty also intersects with all determinants of health and mental health and is considered a key contributory factor to all ill-health (Simon, Beder and Manseau, 2018). Prior and Manley (2018, p. 219), focusing on the past 30 years in the UK, discounted the hypothesis of ill-health as a cause of poverty; on the contrary, they concluded that "the poor are more likely to suffer worse general health ... and have a poorer mental health state or longstanding mental health condition". Disregarding the impact of a limiting longstanding ill-health on a household's resources ignores part of the reality. Ridley et al. (2020) explored the causal evidence for why persons on low income are more likely than rich persons to experience depression and anxiety, arguing for a bidirectional relationship. Assuming that the relationship between illness and poverty is nonlinear and bidirectional, and that poverty and long-term illness accompany each other, the following brief review focuses on poverty as a concomitant factor to living with a

limiting long-term health problem or illness, while passing over research on the social determinants of ill-health resulting from living in poverty.

Van Agt, Stronks, and Mackenbach (2000) surveyed the prevalence of poverty amongst persons with chronic illness in Netherlands, a country with a well-developed National Health Service, health insurance and social security system. The prevalence rate of poverty amongst chronically ill persons was three times the rate where no chronic illness was present. The authors account for this higher rate as resulting from both lower incomes and higher expenses. Although some of the findings could have been related to the demographic profile of people with chronic illness, the study supports the association of poverty with chronic illness. In a UK based study on the impact of long-standing or chronic illness on household work intensity and income, Booker et al. (2020) found few associations between the development of a household member's illness and household income in situations where the household served as a buffer to reduced working hours and corresponding reduction in income. The point was made that such findings reflect the comprehensive provision of national health care in the UK and would be different in contexts where a limited provision of health care would imply significant additional health related costs for the household. The authors recognise the fact that their findings do not identify those factors that increase the vulnerability to an economic fall of households experiencing long-term illness.

The financial impact of living with a chronic mental illness was identified by Kilian, Matschinger and Angermeyer (2001) as a distinguishing factor of living with a mental illness when compared with the general population and hospital inpatients with somatic diseases. More recently, Jeon et al. (2009) studied the economic impact of chronic illness through a qualitative inquiry with 66 persons in Australia who lived with their family carers. The study found economic hardship to be intertwined with the daily challenge of living with a chronic illness. In spite of a national health insurance system, medical and care expenses not covered by the insurance, inflexibility of services and difficulties in managing the health service system, all contributed to additional negative economic impact. In situations where employment was not possible, families suffered significant economic hardship,

forcing families to make difficult choices between expenses related to the chronic illness and its care and other daily living expenses.

Sépulchre, Lindqvist et al. (2018), in a study with persons having mental health problems and their work-related experiences, reported that even in countries known for their well-developed and generous social benefits (namely Scandinavian countries), the persons interviewed reported living on a tight budget, had difficulties to access and maintain benefits, and had no exit from the benefit trap because accessing work would lead to their loss of benefits. Arguing that the relationship between poverty and mental health is a complex one, Forchuk et al. (2017) studied poverty trajectories experienced by a small group of persons with mental illness, described by participants as “a cycle or trap that was difficult to escape” (2017, p. 253). Among the main factors that contributed to the participants’ difficult financial situation were the cost of housing and concomitant housing issues, and the susceptibility associated with their dependence on social benefits. Ridley et al.’s (2020) extensive review on the relationship between poverty and mental illness described how mental illness compounds poverty in an interactive causal relationship that requires economic interventions in addition to therapeutic ones to break the cycle. Using monetary, basic needs, and capabilities conceptualisations of poverty in the context of serious mental illness and poverty, Sylvestre et al. (2018) make the interesting point that when mental illness leads to those affected losing the support of family and other support networks, their monetary costs to have the capability of meeting their basic needs increase, thereby contributing to a higher risk of poverty and deprivation. The financial hardship associated with a long-term limiting health condition or illness will be discussed further in the following section focused on the extra costs of living with a limiting long-term impairment, health problem or illness.

Not surprising, the emerging picture from research on the impact of long-term illness is similar to what results from research with disabled persons and their families suggest. The increased costs and the decreased employment earning potential of the family household increases the household’s financial exposure and poverty risk. Where the illness damages the household’s support network, the resultant isolation further contributes to decreased resources and increased costs.

These studies, despite their limitations, seem to indicate that even well-developed welfare states with comprehensive health and social care coverage, are somewhat limited in their ability to adequately buffer families living with a limiting long-term health problem or illness from experiencing economic hardship.

2.5 Extra costs of impairment and extra cost of disability

Analyses of additional costs resulting from living with a limiting condition for the persons concerned and their households are central to any study of the consequential poverty, financial hardship, and deprivation; moreover, such analyses are also essential to inform the development of social protection systems targeting such persons. As previously discussed, Sen (2004) referred to these extra costs as the “conversion handicap” as distinguished from the “earning handicap” which describe the difficulties disabled persons face in getting and keeping employment and the lower income derived from employment. A “conversion handicap” signifies “the disadvantage that a disabled person has in converting money into good living” (sec. 2, para. 7) given that doing “the same things as an able-bodied person, a person with physical disability may need more income than the able-bodied person” (sec. 2., para. 7). Consequently, Sen (2004) makes the strong argument that it is “not sufficient to be concerned only with earning handicap, since disabled persons tend to suffer also from conversion handicaps” (sec. 2, para. 7).

Tibble (2005) differentiated between the special and the additional extra costs; the special costs are related to expenditure incurred only by disabled persons while the additional costs are expenditures which everyone has but which disabled persons have more of. Extra costs arise from one’s impairment (MacInnes et al., 2014). But there are also extra costs that arise from the disabling barriers that society imposes on people living with a limiting long-term condition (Hirsch and Hill, 2016). At a theoretical level, extra costs can be viewed as one of the main disabling barriers conceivably experienced due to a limiting condition (for instance, the impairment related costs of aides and services that may be required); or it can be viewed as a magnifying factor of other possible barriers such as when mainstream services are not universally designed, a kind of a ‘disability premium’ (for instance, inaccessible public transport and higher insurance costs).

Various methods have been used to measure the extra costs of disability with each approach providing a different perspective on this complicated task. Hirsch and Hill (2016) used an adaptation of the consensual minimum income standard approach to study the extra costs of living with a sensory impairment. The study highlighted the considerable extra costs resulting from living with the sensory impairment, namely costs related to maintaining a household, travelling and social participation, in addition to the large expenditure involved when impairment specific equipment is required. This study again highlights the recurring theme in all research on the extra costs of disability, namely that such extra costs fluctuate according to one's impairment, its nature and its severity, not to mention one's social situation and one's social support structure, in addition to the resources required to function in a society with all the barriers it imposes on persons living with impairment. An important conclusion drawn by Hirsch and Hill (2016) is that the bulk of costs incurred as a result of living with impairment are a consequence of daily living expenditure, more than expenditure required for assistive technology equipment. While specialised equipment like wheelchairs and modified cars can be extremely expensive, the focus on the expenses related to such equipment tends to overshadow the many direct and indirect costs relating to the day-to-day routine to live a socially active life. In this respect, the researchers argue that any standardised measure for assessing the extra cost of impairment fails to address the extra cost of the disability resulting from the way one experiences social barriers. The actual extra costs are subjective and depend on one's life situation. Not least of the factors that influence the subjective extra costs is one's family situation and the support received from family members that would otherwise have to be factored in as a cost. Costs cannot be narrowly defined by what people can and cannot do but have to take into consideration how people live (Hill, et al., 2016; Hill et al., 2015).

The bottom line in any policy that supports persons in meeting the extra costs of disability is whether or not such policies recognise the full participation of persons with limiting long-term conditions as their ultimate objective. Hirsh and Hill (2016) argue that in order for such participation to be supported, the needs of those concerned cannot be limited to physical aids and personal care. Rather, a focus on the full range of expenses arising from active participation in society is basic, maintaining that the development of policy which "genuinely seeks to promote

active and independent lifestyles among disabled people will need to understand the cost of disability in this wider context” (2016, p. 911). In practice, the assessment of the needs arising from impairment is more often than not determined by the resources available (Slasberg and Beresford, 2016), thereby limiting any realistic determination of the costs of living with impairment to a service provision or benefit provision perspective. In this respect, although the ILF was an exception and an exceptional policy that worked for disabled persons, the effective coverage of the fund was limited, reaching only 5% of service users (Slasberg and Baresford, 2015).

Within a social model of disability, the extra cost of disability can be conceptualised as the financial barrier that disabled persons face in order to be able to fully participate in society. For instance, Hirsh and Hill (2016, p. 899) defined the cost of disability as the “additional costs that people with given impairments must incur in order to reach an equivalent living standard to those without these impairments”. Zaidi and Burchardt (2005; 2003), Morciano, Hancock and Pudney (2012), and later Morris and Zaidi (2020), among others, approached this ‘equivalent living standard’ notion by using the practice of equivalising household income to reflect a household composition that supported a disabled person. Equivalisation of incomes according to household size is common practice and is used in the EU-SILC analysis of income poverty. In addition to adjusting for family membership and ages, this equivalence-based approach estimates an equivalisation factor depending on the severity of disability, whereby the household income is corrected down to account for the disability costs. When household incomes are equivalised for the extra costs of disability a more severe picture results in the prevalence of poverty and in the poverty gap of households comprising disabled persons (Morris and Zidi, 2020). In a study that equivalised for severe disability using data for Spain from the European Community Household Survey, Dávila Quintana and Malo (2012) found that such an adjustment was key to estimating a correct picture of poverty in households comprising disabled persons while not affecting substantially aggregate poverty rates. Their analysis supported the conclusion that equivalence adjustments were especially important to give a true picture of the long-term effect of poverty and disability. Such an approach accentuates the point that the income-based poverty analyses do not reflect the true poverty situation of disabled persons and their households. Equivalence-based approaches have been criticised by Palmer (2011, p.

216) on a theoretical and practical level because they “are not theoretically verified and require extensive expenditure data”. On the other hand, Heslop (2013) makes the case that without the equivalisation of income, no analysis of poverty using income poverty measures can give a true picture of the poverty reality of disabled persons and their households.

Mitra et al. (2017) carried out a systematic review of 20 studies focusing on the individual and household disability related costs. The review, covering 10 countries and a broad array of situations, exposed a consistent pattern of “individuals with disability having sizeable extra costs ... vary[ing] according to the severity of disability, life cycle and household composition” (2017, p. 480). Severity of impairment, health and personal support and transportation costs, living alone or in small households, all contributed to higher costs; higher-income countries also reflected higher disability related costs, a similar finding to Antón, Braña and Muñoz de Bustillo (2016) who used a standard of living approach in their analysis. Mitra et al.’s (2017) review also zoomed into the inadequacy of public benefits and services to meet the extra costs. Comparable findings were reflected in Schuelke, Munford and Morciano’s (2021) UK based study which also concluded that disability related extra costs increased over the four years covered in the study.

Other approaches have been used to understand the nature and extent of disability costs. The most direct approaches are those that are based on actual costs, either by focusing on what disabled persons spend on their extra disability related items or by estimating what extra disability related items need to be added to a household budget. In minimum income standard approaches to studying the extra costs of disability, different groups are consulted on the needs and costs associated with particular impairment situations until a consensus emerges that allow for a minimum income to be derived (Hirsch and Hill, 2016).

Irrespective of the approach used in conceptualising the extra costs of living with a limiting long-term impairment, health problem or illness, all the research reviewed points towards a significant additional expenditure that disabled persons and their households incur to approach a standard of living equivalent to non-disabled persons and their households. There is one additional point to the extra costs discussion, and that concerns the extra costs that disabled persons on low income

pay because they are on low income, or what has been termed as the poverty premium (Davies and Collings, 2021). These are additional daily costs that Davies and Collings (2021, p. 31) contend as being “caused by inequality, rather than by disability itself”. The point is also made that in calculating household income, disability benefits are often measured in while the additional costs are not factored out. The net result is that disabled persons “face a significant **disability premium**, incurring unavoidable (and unique) additional costs” (Davies and Collings, 2021, p. 31), a compounded version of the poverty premium.

2.6 Poverty, disability, housing, family and support

The capability of many disabled persons to achieve the outcome envisioned in Article 19 of the UNCRPD, the right to live independently and be included in the community, depends on disabled persons’ support structure and housing, with the family household and other informal supports moderating to a great extent the insecurity and vulnerability resulting from housing and support failures. Not all disabled persons experience problems with housing or housing costs; and the range of support disabled persons need varies considerably depending on the severity of their impairment, health problem or illness. In Europe, a household with low income is more likely to experience housing related problems, including affordability (Kennedy and Winston, 2019). Given the high prevalence of disabled persons living in households with low income, housing affordability and other housing related issues require attention when focusing on poverty and disability. Kennedy and Winston (2019) question the adequacy of the 60% of household equalised median income poverty threshold as it does not reflect the impact of housing costs on a household’s disposable income; nor is it sensitive to different levels of poverty, especially households experiencing extreme poverty and concomitant housing deprivation issues.

In the most recent report covering the transition from institutional to community-based care in the EU, Šiška and Beadle-Brown (2020, p. 4) identified “the *lack of affordable community-based and social housing* [as] one of the primary barriers to scaling up community living” for the nearly 1.5 million disabled persons living in institutions, arguing that “*appropriate housing policies, strategies, and practices* are

crucial to sustaining deinstitutionalisation efforts”. The report makes the point that while “living in an ordinary house, dispersed in the community is *not sufficient* for a better quality of life or full citizenship, especially for those with more severe and complex need, it is a *necessary condition*” (2020, p. 6). The other key related issue is the availability and suitability of individualised support which the report ascertains as “the only way to ensure full inclusion and participation in the community” (2020, p. 3).

The point being reviewed here is that housing issues go beyond the concept of ‘housing deprivation’ as conceptualised in the EU-SILC and as discussed by Kennedy and Winston (2019) in their focus on extreme poverty in the EU. Housing issues are integral to any discussion of poverty, deprivation and disability. Plouin et al. (2021), in their draft working paper for the Organisation for Economic Co-operation and Development (OECD) focusing on housing and disabled persons living in the community, describe disabled persons’ challenges in accessing affordable and suitable housing; disabled persons with complex needs also face the challenge to “secure quality services, and to pay for such support” (2021, p. 7). Financial barriers are a major concern because “people with disabilities are more likely to have a low income (especially, but not only if their impairment prevents them from working), making it harder to afford housing and related services that meet their needs” (2021, p. 7). The point that one derives from this working paper is that while suitable affordable housing and provision of support services is an issue for all disabled persons considering the substantial costs involved, those whose family resources fall short of meeting such costs lose the freedom to live and participate in the community.

For disabled persons, housing and support costs (among other factors) are not solely affected by the severity of their limiting long-term impairment, health problem or illness but also by their level of family support and social networks, including friends, neighbours and also support from voluntary organisations, some of which may also be co-funded by public funds (Cullinan, Lyons and Nolan, 2014). The disabled person’s family and support network potentially act as a buffer from extreme vulnerability and insecurity. Also, the family household is likely to share any economic impact resulting from living with a long-term condition. Davis (2005)

discusses how people live within a complex network of persons who are part of their life and who support them at different levels in attaining their goals and aspirations. The support one draws from one's intimate network, usually the family and close friends, is different to the support one draws from formal services. Davis (2005) elaborated Judith Snow's (1994) model of four Circles of Support (see Figure 2.1 below) developed to describe the different levels of relationships that are commonly part of one's life and the different level of strength and dependency on one's support relationships. An understanding of these 'circles of support' bring to the fore the level of vulnerability one lives with. Judith Snow herself had ended up living in a chronic care nursing home at a young age because she did not have the financial resources to fund her housing and the personal care she needed. When eventually she succeeded in getting funding approved to pay for her own apartment and personal assistance, she managed to live in her own place in the community with the support of a group of close persons who committed themselves to her wellbeing (Cullingham, 2015).

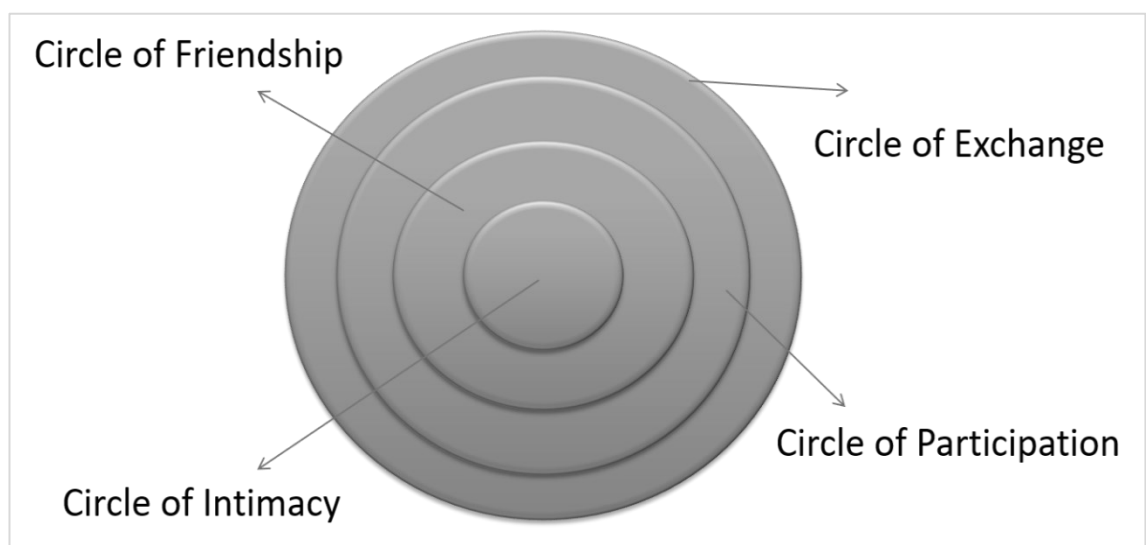


Figure 2.1: Circles of Support

In one's inner 'circle of intimacy', family and intimate friends commonly provide the most important support relationships one depends on. Moving away from the intimacy of family and the dearest friends, the second 'circle of friendship' encompasses one's friends and network of socialisation. In the third 'circle of

participation', relationships are less strong and include one's acquaintances with whom one regularly interacts on a day-to-day basis. Finally, the fourth 'circle of exchange' depicts the formal services involved in one's life. This model can be used to conceptualise the role of the family household, friends and neighbours in the life of people living with a limiting long-term condition; it draws attention to the different experiences of vulnerability, including vulnerability to poverty, depending on one's circles of support. The poorer the circle of intimacy and the circle of friendship the higher the dependence on, and role of, the outer circles representing the formal services. This model also points towards other important factors in understanding disabled persons' capability to live and participate in community life; housing and support issues are moderated by the disabled person's family household and close support networks. Moreover, disabled persons' experiences of poverty and deprivation are unlikely to be isolated from their family household's poverty and deprivation reality and vice versa.

2.7 Austerity and living with a limiting long-term impairment, health problem or illness

As cited in the introduction to Chapter 1, the European Network on Independent Living (2022, p. 33) referred to the austerity measures characterising European policy in the previous decade as placing "disabled persons at greater risk of poverty". Any study of the link between disability and poverty in the years following the 2008 financial crisis cannot not analyse what policies of austerity measures expose on this link.

The impact of poverty on disability has been documented as a result of the age of austerity that has characterised recent and not so recent politics. The impact of welfare reform and policies of austerity is experienced in different ways by those that have least and those that are more likely to depend on publicly financed services and benefits (Blyth, 2013; Farnsworth and Irving, 2011). Farnsworth and Irving draw attention to the "unprecedented, levels of hardship and insecurity for many millions of people and, as always, the poorest will pay the heaviest price" (2011, p. 5). The financial and support safety net of persons living with impairment has been weakening (Grover 2015; Garthwaite, 2014; Garthwaite et al., 2014). Blyth

makes a strong argument that politics of austerity should be abandoned “not because austerity is unfair, which it is” but because “austerity simply doesn’t work” (2013, p. 244). Blyth (2013) is here arguing that austerity is a political choice and a failed economic option. Irrespective of the economic demerits or otherwise of austerity policies, an analysis of the disability literature forcefully highlights the direct and indirect impact such policies have on those at the lower end of the income distribution.

Some of the most pronounced reviews on the impact of austerity on economically vulnerable groups come from the testimonies of disabled persons and their organisations. A quick analysis of the reactions to the UK Government 2010 spending review all emphasise in unison the disproportionate negative impact that austerity measures have on disabled persons (see for instance Kaye, Jordan and Baker, 2012; Naysmith, 2012; Williams-Findlay, 2011). Morris (2011), a disabled activist, researcher and author, who has written extensively on the impact of austerity measures on individuals and families who cannot rely on the labour market to provide for all their needs, explained this reality as follows: “People of all ages who experience impairment and/or illness are at a disadvantage in a society and an economy where the market is the sole arbiter of opportunities and life chances” (Morris, 2011, p. 1). Describing the predicament facing disabled persons as a nightmare, Morris (2013a) argued that as a result of the austerity reforms in the ILF, disabled persons would “at best, be left with just ‘life and limb’ support (the ‘safety net’ that the government refers to) or, at worst, be forced into residential care” (para. 8).

Edwards (2012), in a study on the effects of the UK Coalition Government austerity package on disabled persons, showed how “the poorest sections of society and in particular disabled people [were] bearing the biggest burden of the cuts” arguing that “all the advantages that disabled people [had] made over the period since 1945 [were] being reversed” (2021, p. 4). Another disabled activist and writer, Ryan (2015), made the case that these austerity policies, marketed as incentivising employment, would have an iatrogenic effect; the cuts did not recognise the nature of living with impairment or chronic illness as they effectively reduced disabled persons’ capability to consider employment. Such policies determined what society

“want[s] life to be like for a citizen battling mental health problems, debilitating illness or disability” (Ryan, 2015, para. 7).

Using official UK Government figures, Duffy (2013) showed how the austerity cuts were primarily targeted towards people in poverty, disabled persons, and their families, with persons with the severest impairments suffering the worse brunt of the cuts; the burden of the cuts for the general population, people in poverty, disabled persons, and persons with severest impairments was estimated to be in the ratio of 1:5:9:19. In another report ensuing from an Independent Parliamentary Review to assess the impact of the changes to working age benefits in the UK prior to their introduction, Low, Meacher and Grey-Thompson (2015) concluded that the proposed cuts would drive disabled persons further away from the possibility of taking up any employment related activity and further into poverty. The report found no evidence or logic in the argument that cutting the money disabled persons have to engage in work-related activities would help them to get into work. Moreover, it further concluded that the cuts would also have a negative impact on the health and mental health of those affected and isolate them further from participating in community life. Ryan (2016c) reiterated this point when she argued that for thousands of disabled persons it had become “a part of everyday life to be anxious, desperate and scared. That isn’t their illness or disability inflicting that on them but the people in power who should be helping them” (para. 7).

The impact of austerity policies on mental health services users was discussed by Mattheys (2015) who argued that mental health services users had been significantly negatively affected by the UK austerity programmes. Maintaining that the mental health sector in the UK had suffered from chronic underfunding, the age of austerity had further aggravated the situation, whereby persons “experiencing mental distress, including mental health service users, are some of the key groups of people that have been hardest hit; for instance, in the targeting of disability and ill health-related benefits” (2015, p. 476). Ryan (2016a) describes stories of vulnerable persons being driven to suicide because of a compendium of factors related to a benefit system turned against service users.

In a review of 29 articles focusing on austerity policies in the UK, Macdonald and Morgan (2021) concluded that austerity policies had had the greatest negative

impact on those groups most vulnerable and most in need of social protection. As a consequence of less benefits making up for the impact of living with limiting impairment or ill health, austerity contributed to a disproportionate reduction in the quality of life of disabled persons (also older persons and migrants). Whereas Macdonald and Morgan (2021) recognised that from the literature reviewed it was not possible to pinpoint specific consequences as resulting from identifiable policy changes, the general conclusion for the period covered (2010-2018) was that UK austerity policies had negatively impacted the health and social care of disabled persons. Moreover, austerity discourse also contributed to disabled person being further branded as parasites on state-funded benefits.

The shift in the media portrayal of disabled persons was identified in the early austerity years and continued throughout the second decade of the millennium. Briant, Watson and Philo's (2011) study analysing how UK newspapers were reporting disability found strong evidence to suggest that a significant change had taken place over the previous five years, moving from a tragic-brave representation to "one where the predominant focus has been on disabled people as scroungers" (2011, p. 68). Disabled persons taking part in the same study feared that this reporting in the press would serve the basis for impoverishing their publicly financed support structures and process. Ryan (2016b) commented about the anti-benefit mindset fuelled through five years of austerity political discourse, what she termed as a "new brand of vigilantism" (para. 6) in which "a 'benefit cheat' and a person on benefits is one and the same" (para. 3).

This last point was further expounded in detail by Ryan (2019) in her compilation of graphic narratives of stories of disabled persons affected by the austerity policies. Ryan showed how disabled persons were systematically blamed for the economic ills of society, arguing that disabled persons "had become an object of suspicion, demonization and contempt ... under austerity, the one group in society who had been supposedly untouched was now said to be unaffordable" (2019, p. 5). The austerity cuts did not only drive disabled persons to extreme poverty but also affected their employment prospects, their ability to live independently, and their access to housing, with women and children getting the worst deal. Ryan concluded that as result of a decade of austerity "people with disabilities, chronic illness and

mental health problems have been routinely driven into destitution, pushed from the workplace and stripped of the right to live in their own homes” (2019, p. 191). In the prevailing austerity climate, the average non-disabled citizen is also struggling economically which alienates them from the predicaments of disabled persons; the challenge, Ryan argues, is “to show not only that disabled people are not an economic threat but also that the struggles facing each of us are not so different after all” (2019, p. 197). The point being made here is that no one is exempt from the possibility of facing the long-term substantial adverse impact of acquiring and consequently living with impairment, a health problem or illness, and that only a minority of society have enough resources to live through such realities without the substantial social protection and social services, the *raison d’être* of the welfare state. Ryan’s (2019) stories provide a testimony of real-life situations of disabled persons whose challenging day-to-day living was impoverished, or pushed to poverty, or whose poverty became more severe, by austerity policies in the UK.

The UK was not the only European country to adopt austerity policies. The above review, while pertaining to the UK context, is by no way exclusive to the UK; on the contrary, it is representative of the wave of policy changes that disabled persons in Europe experienced post the 2008 Great Recession. That trend impelled the European Network on Independent Living (ENIL) to propose to the European Parliament in September 2011 a resolution on the effect of cuts in public spending on disabled persons in the European Union. The proposed text to the European Parliament, prepared by ENIL and supported by 15 other European organisations of disabled persons, included the following key statements:

1. ... persons with disabilities across the European Union are being disproportionately affected by cuts in public spending, as a result of which they are losing support services such as personal assistance and direct payments, which allow them to live independently in the community;
2. ... taking away these support services from persons with disabilities will lead to an increase in the number of people living in long-term institutional care and further social exclusion of persons with disabilities in the European Union;
5. ... Member States to abandon all announced cuts in the funding of community-based services for persons with disabilities;

6. ... Member States to reintroduce community-based services for persons with disabilities, such as personal assistance and direct payments, which have been abolished or downgraded as a result of cuts in public spending; (European Network on Independent Living, 2012, paras. 1, 2, 5 and 6)

Although the resolution never made it to the European Parliament, in March of the following year the European Parliament debated an oral question on the impact of austerity on the living conditions of disabled persons, reflecting the reality that the impact of austerity policies on disabled persons was a European wide concern. Hauben et al. (2012), in their assessment of the impact of European governments' austerity policies on the rights of disabled persons, concluded that the rates of disabled persons at-risk-of poverty since the onset of the 2008 crisis had increased disproportionately. The negative impact did not only result from the austerity measures targeting social spending but also from other reforms and restructuring at both country and labour market level. In this context, ENIL also launched a 'Stop Disability Cuts' campaign in 2014 aimed at raising awareness on the "disproportionate effects of the austerity measures which took place at both an EU level and national level on the lives of disabled people across Europe" (European Network on Independent Living, 2014, para. 8).

As conceptualised above and as experienced in reality, austerity increases disablement by reducing the means for persons living with a limiting long-term impairment, health problem or illness, to overcome the barriers resulting from the adverse and substantial impact of their condition and society's lack of accommodation to their needs. Further, austerity for the impaired person directly targets the welfare state structure considered as the 'insurance' of persons living with impairment and their families. For disabled persons unable to secure an adequate income through paid employment or their own resources, the benefits and services targeted by austerity policies were their only means to independence, self-respect and dignity. Portraying an intimate account of five persons with an intellectual impairment and the devastating impact of austerity on their lives, Carpenter (2018), arguing that persons with intellectual impairment were at the bottom of the barrel, summed it up as follows: "Life clearly wasn't blissful for someone with a learning disability before 2010 but the measures taken since then

have drastically worsened the lives of many” (2018, p. 57). In a systematic review covering 11 studies from the Netherlands, UK, Canada and USA, Malli et al. (2018) drew similar conclusions to Carpenter’s (2018), attesting to the claim that the negative impact of austerity policies on the lives of persons with intellectual impairment was not limited to one area in the UK. Austerity policies had led to cuts in benefits and services that affected the quality of life and the capability for community participation of disabled persons and their supports; their needs were no longer being met by the funding available. The same can be said of all persons living with a limiting life-long impairment, or health problem or illness; the impact of austerity had disproportionate effects inversely proportionate to one’s pre-austerity standing. It is in this context that the EU-SILC data analysed in this study was gathered, the 2013-2019 seven-year period, supposedly not the worst of austerity years but still clearly impacted by them.

Even if the services and benefits structure that support such persons are not directly affected by austerity measures, the austerity political discourse has a particular detrimental effect on all those who consider themselves living in perpetual austerity, saving for a rainy day because of their situation, “living a life of self denial ... forced to deny oneself constantly” (Wade, 2015). Disabled persons and their families find themselves in this category, a situation of chronic vulnerability that is further propagated by austerity politics and austerity discourse. This reality has been described as the transformation of “politics of hope” to “politics of insecurity” or worse still “politics of despair” (J. Camilleri, personal communication 2016).

The closure of the Independent Living Fund (ILF) in England provides an interesting illustration of a significant austerity measure and its impact on its service users, not to mention the actual impact on all the persons with complex needs who could no longer benefit from this policy since its cessation in 2010. Porter and Shakespeare (2016) describe the impact on services users of the transitioning from the responsibilities of the ILF to local authorities as the “loss of certainty to be replaced by uncertainty” (2016, p. 892). The main impact described in the study is one of fear about the future and losing independence, feelings of anxiety, stress, a sense of foreboding, and despair. It is interesting to note that the emotional impact described in this study did not result because anyone of the twelve participants had had their

level of support decreased. One may argue that such an impact is expected when any change is taking place; people resist change and people fear change. However, Porter and Shakespeare (2016) argue that it is not the fear of change that the service users were living but the fact that the certainty the ILF had brought to their life ('we shall always be there for you') had now been replaced by all the uncertainty concomitant with local authority funding of their services ('we might not be able to afford you'). And this is a key feature of austerity's welfare resettlement – that previous guarantees become discretionary spending which had already been marked as unaffordable. In actual fact, the uncertainty described is a genuine fear of losing the capability (in Sen's understanding) of continuing to live in the community and being forced into care.

2.8 Austerity and financial vulnerability

As already noted in previous sections, households supporting disabled persons are significantly overrepresented below the at-risk-of-poverty threshold. Moreover, such households depend disproportionately on social transfers to improve their financial situation (Eurostat, 2022a). Austerity policies that reduce income to these households unavoidably contribute to an increase in their financial vulnerability. Poh and Sabri's (2017) review of financial vulnerability studies identified low income or low liquid assets, high debt repayments, and inability to cope with unexpected financial expenditures, as the characteristics of households experiencing high financial vulnerability.

The concept of financial vulnerability of disabled persons was examined in detail by Batavai and Beaulaurier (2001) who developed a framework that explains the risk factors that contribute to financial vulnerability. Personal factors (nature of impairment, motivation, demographic, education and training), social factors (informal and formal supports), and environmental factors (policies, physical environment, discrimination) all affect one's income and expenses, which ultimately determine a person's financial risk. Batavia and Beaulaurier (2001, p. 158) considered disabled persons as "among the people most in need of financial security due to often extraordinary and unstable expenses". Austerity affected disabled persons' financial security both directly through the cutbacks in benefits and

services and indirectly through the negative climate developed towards social protection benefit recipients (discussed in the previous section).

More recently, Traustadóttir and Rice (2012) studied the intricate relationship between disability and poverty by focusing on the vulnerability reality of disabled persons who are at the fringes of poverty in Iceland. Among the factors that retained disabled persons on the margins of poverty was a benefit system that did not facilitate any accumulation of assets or increased income without loss of benefits, preserving a chronic state of low income. While maintaining a healthy balance between income and expenditure was possible, any extraordinary expenditure upset the delicate balance. Disabled persons in this study actively sought to cope with their financial situation by reducing their consumption patterns to a minimum and seeking additional community resources from voluntary organisations. Family and extended family support networks played essential roles in providing additional sustenance. Related to their financial vulnerability state, disabled persons also identified stress, insecurity and depression as contributing to a sense of helplessness in improving their situation, especially in times of austerity policies. Traustadóttir and Rice (2012) concluded that a focus on the notion of vulnerability allows for a clearer understanding of disabled persons' reality of risk of moving into poverty if the labour market had to be devoid of Government interventions; policies addressed at preventing poverty need to focus on vulnerability rather than contributing to increasing vulnerability as ensuing from austerity policies.

An understanding of poverty is not complete without an analysis of the concept of vulnerability to poverty. People and households move in and out of poverty over periods of time when poverty is being measured through the proxy of income. Shocks in the public social expenditure, in the labour market, or changes in personal circumstances can easily push into the income poverty category those who are living just above the at-risk-of-poverty threshold. Austerity measures affect those who are most vulnerable to sliding into poverty, but also increases the proportion of those who are vulnerable to poverty. Moreover, as previously mentioned, irrespective of whether or not one's income or financial standing is directly affected by austerity measures, disabled persons have reported an increased sense of insecurity and vulnerability as a result of the austerity rhetoric. No longer can disabled persons

look at the welfare state as an ‘insurance’ for their quality of life. Their needs may no longer be ‘affordable’, or so they are told (Ryan, 2019).

Consequently, the sense of subjective vulnerability increases as a result of austerity rhetoric. But there is also the disabled person’s household vulnerability to poverty that is directly affected by public policy measures. An understanding of the relationship between poverty and disability would be incomplete if a focus on the disabled person’s vulnerability to poverty and the vulnerability of the disabled person’s household is not clearly understood. When the EU-SILC gives prevalence rates of households and individuals who fall below the ‘at-risk-of-poverty’ threshold, two important measures are absent: the poverty gap (how far below the poverty threshold do various groups fall, or the severity of income poverty) – in this respect an interesting measure would be to analyse the households and individuals with an ‘activity limitation’ (the EU-SILC measure for impairment, explained in the following chapter) to understand their poverty gap; and also a measure of those households and individuals who fall right above the poverty threshold and are therefore in the vulnerability to poverty category. All of these measures do not take into consideration the extra costs of disability. Factoring the extra costs of disability will logically have three important effects:

- It will increase the percentage of individuals and households who are at-risk-of poverty;
- It will increase the percentage of individuals and households who fall in the vulnerability to poverty category;
- And it will increase the poverty gap of households and individuals who fall below the poverty threshold.

2.9 Summary inferences from literature review so far

The foregoing review of research literature on poverty, deprivation, austerity, vulnerability and disability brings to the fore the significance of investigating in-depth the nature of the link between disability and poverty in its various conceptualisations. The review suggests an intricate link at both theoretical and empirical level. The main conclusions drawn from the review so far and informing this study are summarised below.

2.9.1 Reduced earnings from employment

As a result of the impact on their earning capacity, households living with a limiting long-term condition are, in general, more likely to experience lower income than other households. In addition to the greater prevalence of such households experiencing income poverty, when in poverty the 'poverty gap' is particularly significant. Consequently, a poverty line or an at-risk-of-poverty rate does not adequately reflect the reality of individuals and households living with a limiting long-term condition, including their financial vulnerability.

2.9.2 Impact on household

The presence of a limiting long-term condition impacts a household's quality of life irrespective of the household's level of income. In a way, it can be argued that if income is a proxy for quality of life, then a given income translates itself into different levels of quality of life as a result of the presence of, or absence of, a limiting long-term condition within the household.

2.9.3 Extra costs of disability

Research on consumption patterns has shown the significant impact of the 'extra costs of disability' on households, implying that equal incomes of different households are not equivalent when one household differs from the other on the basis of the presence of limiting long-term condition. However, attempts to establish equivalisation scales are rather preliminary considering the difficulties involved in operationally defining different levels of impairments and match to them different levels of 'extra costs', or different equivalisation rates for different levels of impairments. Moreover, 'extra costs' are also dependent on a heterogeneity of contextual factors.

2.9.4 Household's moderating role

Poverty resulting from disability cannot only be considered at an individual level, bearing in mind that poverty affects the whole household. The consequential earning potential and costs of the households negatively impact the household's

quality of life. Yet, the support of the household, especially in close knit families, has the potential of mitigating these negative impacts.

2.9.5 Mitigating factors

The impact of a household's reduced disposable income and its increased costs on the household's quality of life is mitigated by various other factors, not least the policy and service context within which the household lives. Households are also impacted by the communities they live in, particularly the informal and formal services they can access.

2.9.6 Housing

There are numerous other factors that contribute to a household's quality of life but a predominant factor amongst these is housing. Housing cost and housing affordability impact directly the quality of life or the level of deprivation of a household.

2.9.7 Other factors that support active citizenship

Various other mechanisms can support or inhibit the conditions that enable persons living with a limiting long-term condition and their families to exercise active citizenship. The literature reviewed identifies the provision of support services as a key factor that contributes to disabled persons' capability to live and participate in society.

2.9.8 A deprivation conceptualisation of poverty

A focus on disability related poverty cannot be limited to income poverty or income deprivation. It goes without saying that income-poor households are more likely to experience material deprivation irrespective of whether disability is present, let alone when disability is present considering the reduced income potential and the extra costs of living with impairment (Morris and Zaidi, 2020; Mitra et al., 2017; Cullinan, Gannon and O'Shea, 2013). Emphasising solely income alone will not capture the deprivation reality experienced in such households even when not

deemed to be 'at-risk-of poverty'. The conclusion drawn from the review of the research literature so far points towards a conceptualisation of disability-related poverty that recognises the depreciation in one's material living conditions resulting from living with an impairment in an ableist world. The material living conditions of a household are directly affected by economic factors, both directly and indirectly; beyond the material cost of living, material resources contribute to a household's wellbeing in line with a household's needs, preferences and capabilities. The focus here is primarily on the concomitant deprivation associated with households supporting disabled persons, although the demarcation line between this deprivation conceptualisation of poverty and a deprivation reflective of subjective wellbeing or illbeing is not a straightforward one. For instance, a household that experiences financial worry or anxiety, agonising about paying bills or meeting other expenses, or struggling to make ends meet, or feeling vulnerable or insecure about its ability to afford basic necessities, is experiencing some sort of subjective economic stress resulting from some form of objective deprivation (for instance, a household that considers itself overburdened by its housing costs is less likely to consider itself able to afford taking a holiday; this consideration of housing costs overburden contributes to the deprivation of not affording a holiday, while at the same time it can itself be a measure of, and consequence, of economic deprivation). Such subjective measures of economic stress are also useful in understanding the impact and experiences of deprivation, and the demarcation between subjective and objective dimensions of deprivation are not unambiguous (Boarini and Mira d'Ercole, 2006).

The following last section of this Chapter reviews the research literature on the study of deprivation across Europe based primarily on EU-SILC surveys since it was launched in 2003 as part of the EU's effort to develop a common statistical framework for the analysis of social and economic conditions across the EU. In particular, the review identifies areas where further work is needed in understanding the experience of deprivation in European households supporting disabled persons relative to other households.

2.10 Deprivation across Europe and disability

The above review has concluded that understanding the link between poverty and disability cannot conceptually rely solely on income; as Sen (2000, p. 3) put it, “we must look at impoverished lives and not just depleted wallets”. That income poverty is more prevalent amongst disabled persons in Europe is known, also confirmed in recent years by the official EU-SILC statistics (see for instance Eurostat, 2022a). However, focusing only on income poverty fails to address the deprivation consequences of reduced income and increased costs on households supporting disabled people. In this respect, Sen (2006, p. 36) has also argued that “the phenomenon of poverty in rich countries can be better understood through the perspectives of relative deprivation”; understanding the poverty-disability link in ‘rich’ Europe entails understanding disabled household’s relative deprivation compared to non-disabled households. Here, I review the research on the role of non-monetary measures of deprivation in advancing our understanding of poverty in European households supporting disabled persons compared to other households. The review is primarily limited to research based on EU-SILC data.

The argument for the need to go beyond income to measure and study poverty in its multidimensionality conceptualisation reflects Townsend’s (1979) work on deprivation (discussed above in the Preface, and in sections 1.2, 1.4, and 2.2). For Townsend (1987), deprivation is a state of evident and noticeable relative disadvantage. This study’s focus on the relative disadvantage of households supporting disabled people compared to society at large is, by Townsend’s (1987) definition, a study on the relative deprivation of such households. In Townsend’s (1987) argument, both subjective and objective conceptions of deprivation have value; and although it may be necessary to distinguish between social and material deprivation, “the two sets of conditions may be difficult in practice to separate” (p. 127). The challenge for Townsend, and subsequently in poverty research since then, is the establishment of the deprivation threshold at which one would be in a state of objective poverty. Townsend (1987) recognises that a measure of deprivation may not reflect a measure of low income and argues for a distinction between the two concepts; yet “people experiencing multiple or single but very severe forms of deprivation are in almost every instance likely to have very little income and little

or no other resources” (p. 131). And in the European contemporary context, any examination of EU-SILC ‘at-risk-of-poverty’ and ‘material and social deprivation’ measures show dissimilar patterns and trends in ‘poverty’ reality they depict.

In their key contribution to breaking the income-only mould to studying poverty, Nolan and Whelan (2011) stated that the role of non-monetary measures of deprivation are especially necessary in comparative research, arguing that such measures do not replace but complement income in quantifying the prevalence of poverty and understanding its multidimensionality. While low-income measures overlook “those who are unable to participate in their societies due to lack of resources” (Nolan and Whelan, 2011, p. 2), non-monetary measures respond to a broader multidimensional understanding of poverty. Summarising their justification for extending the analysis of poverty beyond income-based metrics, Nolan and Whelan (2011, pp. 3-4) stressed the ability of such indicators to “bring out what it means to be poor, help to do a better job than income on its own in identifying the poor, and also directly capture the multifaceted nature of poverty and exclusion”.

There are various questions that keep reoccurring in poverty and deprivation related research since Townsend, questions that have permeated the analysis of EU-SILC data in providing a comprehensive picture of living conditions across Europe. To what extent do material deprivation measures and low-income measures converge in identifying households that are poor? Do changes in poverty trends using low-income measures parallel trends in material deprivation? What operational distinctions are necessary in studying material deprivation, social deprivation, or other classifications of deprivation such as objective and subjective measures? Which combination of indicators give the most detailed and accurate picture of deprivation? Some of these questions highlight issues related to the operationalisation of definitions. Others are dictated by methodological concerns about precision in measurements of concepts. The answer to such questions depends on the purpose of one’s study. The subsequent analysis does not attempt to settle conceptual or methodological issues. Rather, it examines the relevant deprivation research to emphasis what we know from previous comparative studies that can inform this study on the link between disability and poverty as experienced

by households supporting disabled people. Implicit in the philosophical orientation driving this study (refer to section 4.3 below) is that there is no one set of definite indicators of the underlying construct being studied.

2.10.1 Deprivation and material deprivation

Deprivation measures generally focus on outcomes elaborated in the context of an agreed living standard or wellbeing (Boarini and Mira d'Ercole, 2006). A measure that records whether a household can afford one week's holiday away from home assumes that one week's holiday away from home is a measure of basic wellbeing, and being deprived of the affordability to have one week's holiday away from home is a measure of deprivation. It is also a measure of deprivation resulting from low income, clearly a measure of material deprivation. There are other non-material deprivations that feature in a multidimensional view of poverty and deprivation, for instance access to education and employment. The demarcation between material deprivation and non-material deprivation is not straightforward and depends on how well-defined the concepts are. For instance, Boarini and Mira d'Ercole (2006, p. 12) define material deprivation as "the lack of material goods, financial difficulties and ... the individual's inability to live a decent life". Eurostat (2021a) explains material deprivation as "a state of economic strain and durables, defined as the enforced inability (rather than the *choice* not to do so) to", and goes on to list the nine variables making up the Eurostat 'material deprivation' indicator. Another format of this definition is the one for 'severe material and social deprivation' as "an enforced lack of necessary and desirable items to lead an adequate life" (Eurostat, 2021b). Such a definition does not encompass all that Townsend (1979) covered by his description of what it means to be deprived. Hick (2012) makes the point that the broader non-monetary aspects of deprivation are commonly overlooked in favour of a narrow conceptualisation of poverty focused on material resources. Such a narrow unidimensional focus on poverty "is problematic because it fails to capture the many ways in which people's lives can be impoverished" (Hick, 2014b, p. 304). This point has major bearing in this study; here, I am not examining whether households supporting disabled people are deprived but rather the many ways in which their quality of life is impoverished compared to other households.

The relationship between, disability, deprivation and impoverishment needs unpacking. What are the many ways in which disabled people's lives can be impoverished? An ableist society commonly considers disabled persons as 'impoverished' because of their impairment; living with a limiting life-long impairment, health condition or illness have been considered as facets of deprivation (Devin and Pothier, 2006). Such an approach considers the lives of disabled people as being necessarily poorer to the lives of nondisabled persons because of the impairment. Conversely, the social model of disability provides a clear conceptual separation between the impairment itself and any consequences arising from the impairment. The impoverishment of disabled persons is not a function of the impairment but a function of "the interaction between persons with impairments and attitudinal and environmental barriers that hinders their full and effective participation in society on an equal basis with others" (United Nations Convention on the Rights of Persons with Disabilities, 2006, Preamble sec. e). This study is concerned with ways in which disabled people's lives, and their capability to affect the outcomes that matter, are impoverished primarily as a result of reduced resources or concomitant factors that contribute to reduced resources. The focus is not on the best measure or measures to identify who is poor or who is deprived; rather, it is those measures that best capture the impoverishment of households supporting disabled persons compared to other households that meet the needs of this investigation. The link between poverty and disability is reflected in those types of deprivation that directly or indirectly reflect financial constraints; there are other deprivations that may result from discrimination or other forms of denied opportunities which are not the direct focus of this study.

2.10.2 Components of material deprivation

What are the components of material deprivation and how do the components influence the study of material deprivation? Boarini and Mira d'Ercole (2006) proposed a basic composition of a broad conceptualisation of material deprivation made up of objective and subjective dimensions, although in their own critique of these dimensions they recognised that such a distinction is "sometimes arbitrary" (p. 15). The objective dimensions were divided into four subcategories: satisfaction of basic needs; capacity to afford basic leisure and social activities; availability of

consumer durables; and housing conditions. Two subcategories made up the subjective dimensions: appreciation of own conditions; and social environment.

Of relevance in this typology, is that housing conditions and environmental characteristics are classified under the objective dimensions of material deprivation, while financial stress is considered as part of the subjective dimension of material deprivation. There are various points that arise from such a classification:

1. Differing from the above typology, indicators on housing conditions are commonly classified as a measure of 'housing deprivation', and in the EU-SILC 'material and social deprivation' measures, housing conditions are not included (the item on whether a household affords keeping the home appropriately warm is a measure of affordability, although it can be aggravated by poor housing conditions).

2. Although in Boarini and Mira d'Ercole's (2006) typology housing conditions are classified under objective dimensions of material deprivation, there is also a subjective dimension to them. For instance, problems related to crime, violence and vandalism have an objective dimension but also a strong subjective interpretation (Boarini and Mira d'Ercole, 2006). In their analysis, Nolan and Whelan (2011) include items related to neighbourhood noise, pollution, grime and crime, items that are not considered measures of material deprivation by Guio and Engsted Maquet (2007) as they do not pertain exclusively to people in poverty.

3. Financial stress items are considered as subjective dimensions of deprivation because they involve people's own assessment of their conditions. For instance, older persons generally report having less difficulty to make ends meet (Van den Bosch, 2001/2018). Clearly, whether a household has the ability to make ends meet does reflect the households appreciate of its finances, although in households with low income, there is only so much that one can attribute such an assessment to the household's subjectivity. Other measures of financial stress are less subjective; for instance, whether a household has arrears in paying bills or rents is more objective than subjective. Although Guio and Engsted Maquet (2007, p. 201) argue against "dropping the subjective items, as a choice of principle, [as it] might lead to a measure disconnected with the reality as lived and perceived by people", they

exclude the subjective assessment of whether one has the ability 'to make ends meet'. Likewise, Nolan and Whelan (2011, p. 34) did not include this measure as an indicator of deprivation "because they may be heavily influenced by previous experiences and the frames of reference they create"; however, they found that this economic stress measure was highly prevalent in groups identified as consistently poor. People classified as poor were also found to have the highest rates for subjective financial stress (as measured by their difficulty to make ends meet) in Martínez and Ruiz-Huerta's (2017) study on immigrant-native multidimensional poverty differences in five European countries. To what extent is this measure of subjective financial stress a good indicator of deprivation when comparing households supporting disabled people with other households? This question is dealt with in more detail in Subsection 2.10.4 below.

4. Hick (2013) used both 'objective' and 'subjective' deprivation measures to understand whether 'enforced lack' indicators are more or less reliable and valid than 'simple absence' indicators as a measure of material deprivation. In this context, he makes the interesting point that there is an element of subjectivity in all measures given that they are self-reported, arguing that "the distinction between objective and subjective dimensions should be understood as a continuum and not a binary distinction" (p. 42).

The Boarini and Mira d'Ercole (2006) classification is not the one commonly adopted by mainstream research using EU-SILC data to study poverty and deprivation. However, their typology is useful because they use a broad notion of material deprivation that includes aspects of housing deprivation and subjective financial stress and also because they show how certain classifications are arbitrary in nature. Equally important is the point Nolan and Whelan (2011, p. 31) make related to the questions they identify on the core methodological issues involved in using non-monetary deprivation indicators, namely that "the answers to many of these questions will vary depending on the purpose of the analysis" and the importance that "the methods employed are oriented towards the specific objective at hand", a point also stressed by Martínez and Ruiz-Huerta (2017, p. 200).

In this study, it is those measures that capture the comparative impoverishment of households supporting disabled people that are key; consequently, the broadest

coverage of subjective and objective claims of household's poverty are used in a combination that meets the purpose of the analysis at hand.

2.10.3 Studying household deprivation

One of the difficulties in studying household deprivation is the assumption that the household aggregate deprivation applies equally to all the members of the household, ignoring intra-household disparities. In single person households, such an assumption is unproblematic; however, for other households, the reality of intra-household inequality has to be recognised. Karagiannaki and Burchardt (2022; 2020), analysing 2014 EU-SILC data, concluded that roughly 13% of adults reside in households in which there is some disparity in the deprivation experienced by different household members, and this proportion increased to 22% in complex households. Moreover, measuring deprivation at household level resulted in a reduced overall deprivation rate; that is to say, a household that is not measured as facing deprivation may hide the reality of adult members within the same household who are deprived. In a more restricted study using 2009 EU-SILC module on deprivation for Spain, Bárcena-Martín et al. (2017) showed how the distribution of resources within a household is a crucial factor in determining the deprivation experienced by children.

Examining the deprivation of households supporting disabled persons does not replace the need to focus on the disability-poverty link at the level of the individual living with impairment; one may expect that similar to Karagiannaki and Burchardt's (2020) findings, a household deprivation measure may conceal some of the deprivation experienced by disabled persons while not necessarily evident in household deprivation. Nevertheless, a focus on household deprivation in studying the disability-poverty link has a strong theoretical base in the extra costs a household experiences when it includes a disabled person (Mitra et al., 2017).

2.10.4 Subjective measures of economic stress

In Subsection 2.10.2 above, the issue concerning subjective measures of economic stress was raised. The focus in this section concerns primarily the measure of a household's 'ability to make ends meet', a non-monetary household deprivation

indicator used on an annual basis in the EU-SILC (Eurostat, 2020, p. 200), which assesses respondents' "feeling about the level of difficulty experienced by the household in making ends meet". The underlying notion is that this measure assesses a household's struggle in managing their essential standard of living with the resources they have, or the "presence or absence of stress related to income" (Van den Bosch, 2001/2018, p. 410).

In his extensive study of the use of subjective and consensual measures in poverty research, Van den Bosch (2001/2018, p. 414) argues conclusively that income satisfaction methods (as he classified the 'ability to make ends meet' measure) are unsuitable for "identifying the poor". However, they do have a role as "part of the study of the subjective quality of life". His research showed that the interpretation of one's subjective economic stress reflects household income only to a certain extent and that size and composition of household, the age and presence of children, home tenure, economic status, education level, age, and context, all have an effect on income satisfaction. The critical factor is a household's reference group (Van den Bosch, 2001/2018). Reference groups for households supporting disabled persons vary. Some households may compare themselves to other households in similar circumstances; other households may compare themselves to non-disabled households, aspiring for a comparable standard of living, and perceiving themselves as deprived because of societal and environmental barriers (Karačić et al., 2018).

Morris and Zaidi (2020) and Morris (2021) used the 'ability to make ends meet' metric as a dependent variable when studying material deprivation in households supporting disabled persons, together with an index of material deprivation as a separate measure. In Morris and Zaidi's (2020) study, the two indicators ('ability to make ends meet' and an index of material deprivation) were used to estimate the extra costs living with impairment entailed to maintain an equitable standard of living with non-disabled persons. Similarly, Morris (2021) used the same two indicators to study the extent to which recipients of disability benefits in nine European countries were able to manage a decent living when depending on disability benefits as their main income. In both studies, the use of the two indicators gave corresponding results, with the deprivation index in the Morris and Zaidi's (2020) study giving higher estimates of the extra costs required when living with a

disability. The understanding in both these studies was that if someone does not have the ability to 'make ends meet' then their standard of living is compromised.

Whelan and Maître (2009) used both measures of consumption deprivation and measures of economic stress to study how European citizens rely on European reference groups in assessing the extent of their deprivation. Using the measure of subjective economic stress (ability to make ends meet), the cross-national variation in economic stress largely mirrored the pattern of variation for consumption deprivation, leading Whelan and Maître (2009, p. 128) to confirm "a close association at the national level between material deprivation and subjective economic stress" which however does not "establish a causal relationship between deprivation and stress at the national level". The relationship between consumption deprivation and economic stress depended on context, with clear variation across countries and with the "impact of consumption deprivation on economic stress declin[ing] progressively as the national level of deprivation increases, but in a proportionate rather than an absolute fashion." (p. 128). Whelan and Maître (2009, p. 128) also concluded that "difference in economic stress between countries and regimes are greater for households at the lower than at the higher end of the deprivation continuum." Likewise, Kley's (2022) research confirmed that in richer countries people feel more economically stressed by deprivation than in poorer countries; however, while "economic stress decreases with increasing country-level deprivation" (p. 72), the impact of country-level deprivation on economic stress was mediated by the different welfare regimes. Consequently, one may reason that including the measure of subjective economic stress when examining deprivation contributes to an increase in the measure of subjective deprivation as the national level of deprivation decreases; stated another way, such a measure exposes a reality that may not be reflected in the consumption deprivation measures, especially for countries with low national levels of deprivation. Further, the inclusion of a measure of subjective economic stress allows for a better evaluation of household deprivation experiencing genuine economic stress resulting from their relative standing in the context of a high standard of living, given that as Kley (2022, p. 72) argued, "lower middle classes feel economically more stressed than the poor". Also, for the same levels of deprivation, economic stress tends to be higher for households with health problems, or with dependent children, or for unemployed or

economically inactive persons, while homeowners, households without children and individuals with high education experience less economic stress for any given level of deprivation. In all situations, people use “national reference groups ... [to] compare their holdings” Kley’s (2022, p. 81).

Whelan and Maître (2012, p. 490) put forward the construal that measures of subjective economic stress, namely arrears in payment of bills and mortgages and difficulties in making ends meet, can be regarded as “consequences of material deprivation rather than as indicators of deprivation as such”. Their core argument is based on the fact (discussed in the previous paragraph) that the association between material deprivation and subjective economic stress differs consistently across countries. Moreover, given that this association is stronger in richer countries, the inclusion of subjective economic stress measures as indicators of deprivation will increase the measure of deprivation in the richer countries and therefore reduce the strength of any association between country GDP and household deprivation (Whelan and Maître, 2012). The implications of Whelan and Maître’s (2012) understanding is that the inclusion of measures of economic stress when examining deprivation may distort comparability between countries, and will therefore need to be factored in when interpreting economic stress measures of deprivation.

A conceivable perspective on the ‘ability to make ends meet’ metric as a measure of material hardship is to examine it through Sen’s (2009; 2004; 1970/2017) idea of a ‘conversion’ variation in one’s ability to achieve an end from one’s means, or the capability to achieve the basic functioning of making ends meet. Two households may have a similar equivalised composition and income but, subjectively speaking, one household may find itself without the ability to make ends meet while the other does not, for a variety of possible reasons, not least the extra costs and financial vulnerability related to a household member living with impairment (Traustadóttir and Rice, 2012), or as a result of a weak household/community social capital endowment (Guagnano, Santarelli and Santini, 2016). This ‘ability’ to make ends meet reflects a household’s reality of whether it is able to ‘convert’ the resources it has access (the means) to make ends meet (the ends), or as Sen (2004, sec. 2 para. 7) put it “converting money into good living”. It is subjective, yes; however, an

important subjective measure of deprivation. And on the continuum of subjective-objective measures (Hick, 2013), it is a measure that can tap into the subjectivity of the objective “drastic reduction of life enhancing choices and activities” (J. Camilleri, personal communication, August 28, 2014) reality that reflects the broad poverty-disability link being examined in this study, a poverty that does not solely denote extreme destitution or desperation but comprises the struggle to meet one’s societal expectations and standards.

2.10.5 Other measures of deprivation

I have argued above that a subjective measure of economic stress is useful in examining the relative deprivation of households supporting disabled persons. However, the assumption being made here is that the multifaceted nature of deprivation in households supporting disabled persons cannot be captured by this one single measure of subjective economic stress. Most of the measures commonly used in contemporary poverty research are those that are considered valid in capturing what it means to be living in poverty. Nolan and Whelan (2011, p. 16) describe the main types of non-monetary indicators that are used in contemporary research in capturing and effectively revealing “the experience of poverty, bringing out concretely and graphically what it means to be poor in terms of deprivation of everyday items and activities”. The key point here is that such non-monetary indicators of deprivation, while going beyond an attempt to identify the real poor, cannot lose their focus on outcomes that capture the reality of poverty. Moreover, Nolan and Whelan (2011, p. 18) argued that it is the “capacity to affect those outcomes in a purposive way” rather than the outcomes themselves that need to be reflected in the non-monetary deprivation indicators.

The main capacity affecting outcomes is lack of resources. These lack of resources constrain desirable outcomes and limits one’s ability to have or do something. Nolan and Whelan (2011, pp. 33-34) group these measures as those reflecting “problems people would avoid if they could; ... items that most people in the society in question would do without only if they really have to; or ... being unable to afford an item”. These are clearly measures that capture financial and resource restrictions on people’s choices. Using these measures as indicators of deprivation are not without

their difficulties. For instance, when people report on an enforced lack of durable, their preferences are likely to be influenced by their circumstances, age and experiences. Nolan and Whelan (2011, p. 33) point out that “life on a low income can depress aspirations” while “systematic differences between different groups” may also result in differentiating one’s choice from one’s affordability of some item covered in the measures (for instance, affording a week’s holiday away from home once a year). Such limitations require careful consideration in interpretations drawn from research using these measures to capture what it means to be poor.

2.10.6 Patterning of forms of deprivation across Europe

The above discussion on the role of non-monetary measures of poverty is conditioned by the deprivation indicators available in the EU-SILC. Consequently, an examination of what the research literature tells us about the patterning of forms of deprivation across Europe reflects the conceptualisations that guide such research. Over the past two decades, research on deprivation across Europe has been broadly shaped by the EU-SILC and by the EU’s 2020 poverty reduction targets. This context has moulded the main policy-research interaction by a drive to identify those who are materially deprived, or severely materially deprived, or, more recently, materially and socially deprived, or severely materially and socially deprived, in the quest to reduce their prevalence. Although this drive is aimed to continuously improve measures that zoom into those who are ‘really poor’, thresholds that distinguish those deprived from those who are not deprived have “a somewhat arbitrary character” (Nolan and Whelan, 2011, p. 247). What the EU-SILC data offers is a common set of indicators which since 2004 enabled the examination of deprivation variations across participating countries and changes over time. The addition in the number of items and threshold making up the EU-SILC material and social deprivation indicator since 2017 reflect the ongoing work of the EU Social Protection Committee Indicators Sub-Group to “contribute to the improvement of social statistics at EU level particularly through development of the EU Survey on Income and Living Conditions (EU-SILC)” (European Commission, n.d.a), including the ongoing revisions of all deprivation indicators and development of new ones (see for instance the Social Protection Committee – Indicators Sub-Group Work Programmes for 2010-2022, European Commission, n.d.b). The point being made

here is that the patterning of deprivation in Europe reviewed hereunder is modelled and limited by the epistemological relativism implied in the EU-SILC's sustained updates.

Prior to the COVID-19 pandemic, over the past two decades, European countries have seen a reduction in severe material deprivation; however, this decrease in deprivation was not paralleled by any significant decline in the prevalence of people at-risk-of-poverty (Guio, Marlier and Nolan, 2021). This development is officially interpreted as signifying “substantial improvements in living standards” resulting from an economic recovery whose benefits “have not been distributed so as to bring down markedly the risk of relative income poverty” (European Union, 2019). Clearly, not everyone benefitted from this progress. BÁCENA-MARTIN, GARCÍA-PARDO and PÉREZ-MORENO (2021) analysed the characteristics of individuals who between 2013-2017 were ‘left behind’ in registering progress on the three dimensions of the AROPE indicator, thus focusing on individuals who did not profit from any economic progress. Although significant differences existed between countries, women, older persons, people suffering from a chronic illness or condition, people with low education attainment, people living in single-parent households and immigrants were found to be the most vulnerable groups to being ‘left behind’ (BÁCENA-MARTIN, GARCÍA-PARDO and PÉREZ-MORENO, 2021). Of the 28 countries examined, suffering from chronic illness or living in a single-parent household were the most prevalent amongst individuals who in the 2013-2017 were ‘left behind’. Of particular interest is the identification of people suffering from a chronic illness or condition as the group most prevalent amongst those benefitting the least from economic progress, considering the extremely high incidence of chronic illness or serious health conditions amongst disabled persons (Froehlich-Grobe et al., 2016). BÁCENA-MARTIN, GARCÍA-PARDO and PÉREZ-MORENO (2021) also identified the income dimension as being the major area where people are ‘left behind’ while the material deprivation dimension as being the lowest amongst the three AROPE indicators; to clarify, more people were indicated as left behind by the income measure than on the deprivation dimension. The two main sources of income for European households are employment income and social transfers, and I shall examine both below.

The pattern of deprivation across Europe is significantly and positively impacted by social transfers. Income poverty and material deprivation are both directly influenced by the social transfers regimes within different countries (Notten and Guio, 2020; 2018). The role of social transfers in reducing the rate of people at-risk-of poverty and improving the financial situation of persons in poverty is well documented and can be determined rather straightforwardly (see for instance Leventi, Sutherland and Tasseva, 2019); social transfers add to a household's income and therefore have a direct bearing on a household's standing vis-à-vis the at-risk-of-poverty threshold. However, the effect of social transfers on deprivation is an indirect one; they supplement a household's disposable income which increases the household's financial capability to "participate in the activities and have the living conditions and amenities which are customary, or are at least widely encouraged or approved, in the societies to which they belong" (Townsend, 1979, p. 31). Notten and Guio (2020) developed a model to calculate the impact of an increase in social transfers on every European country's material and social deprivation rate, concluding that an additional modest universal transfer per year would have a significant impact on reducing the number of deprivations of people experiencing five or more deprivations on the 13-item MSD indicator. Notten and Guio's (2020) analysis showed that the countries with the highest rates of material and social deprivation would experience the greatest impact with additional social transfers, concluding that "the impact of social transfers on material deprivation is higher at lower levels of income ... both within and across countries" (p. 47).

Given that household material deprivation centres on a household's ability to finance a standard of living that is customary or encouraged or approved by society at large, an analysis of deprivation patterns in Europe cannot ignore the role of employment in preventing or shaping a household's deprivation considering that work provides the bulk of most households' income. Working is the unquestionable course to prevent poverty; yet it does not protect all workers against poverty. Unemployment, very low work intensity or (quasi-)joblessness are strong contributory factors to poverty and deprivation, but being in employment and poor or materially deprived is also a reality, and a growing one in Europe (Peña-Casas et al., 2019). Bonoli (2007, p. 496) argued that the high wage inequality of the post-industrial labour markets brings about circumstances in which "for those at the

bottom end of the wage distribution, access to employment is not a guarantee of a poverty-free existence". Using primarily data from the UK Understanding Society survey, Hick and Lanau (2018, p. 681) identified persons and households "with a weak labour market attachment" as those most susceptible to move into and persist in in-work poverty, and not follow the more transitory nature of in-work poverty that can be overcome by additional work and higher income. In-work material deprivation was less transient than in-work poverty but more transitory than total deprivation. In this context, it makes sense to reiterate the point that disabled persons are more likely to be out of work, unemployed, underemployed, in low-paying jobs, or facing problems in employment (van der Zwan and de Beer, 2021; Richards and Sang, 2019; Schmuecker, 2014; Colella and Bruyère, 2011), definitely falling within the 'weak labour market attachment' category. Interesting, Guio, Marguerit and Salagean's (2021) study on the dynamics of in-work poverty and deprivation recognised the presence of health limitations as having an impact on the risk of workers falling into and moving out of deprivation but not poverty, arguing that this trajectory may be due to the impact of health-related costs on the disposable income. Health problems were also associated with more long-term in-work poverty and with discontinuing work. Clearly, the relationship between absence or reduced work intensity and deprivation is multifaceted; the absence of employment income undoubtedly heightens the risk of deprivation, yet deprivation can also perpetuate low work intensity and unemployment. Additionally, numerous demographic factors play a role in both deprivation and low work intensity or unemployment.

While a focus on work and deprivation is important because work is the main source of a household's income, a focus on housing is necessary because housing costs are among the most considerable 'fixed' expenses of many households (Deidda, 2015). Not all housing costs are fixed costs; however, housing costs are fixed in the sense that they cannot be done away with. Deidda (2015, p. 545) points out that housing costs "represent a large part of household budget" and "may significantly reduce households' willingness to spend, affecting households' disposable income and lowering their standard of living"; also, the impact of housing costs on a household's standard of living was much greater for renters than for homeowners. More recently, Hick, Pomati and Stephens (2022) found that market-rate renters and

households in the lower end of the income spectrum experience the greatest risk of housing costs overburden, with the “differences in housing cost overburden between poor and non-poor households [being] vast in almost every country” (p. 34). Moreover, households in poverty also experienced greater risk of housing deprivation. Dewilde (2022) identified the role of stronger and more redistributive housing provisions in protecting low-income households from living conditions-deprivation (a broad measure of material deprivation that also included housing deprivation measures and measures of subjective economic stress, amongst others), arguing the importance of anti-poverty policies that “take better account of housing provision” (p. 395).

The household-level determinants of deprivation discussed above – sex, education, chronic illness, single-parent households, work intensity, housing costs, social transfers and others - vary in the extent to which they explain deprivation depending on context (Verbunt and Guio, 2019). So, for instance, household socio-economic characteristics are more likely to explain severe material deprivation when income poverty is also present; at the same time, in Western and Northern European countries the same variables explain material deprivation among the non-income poor. When examining patterning of forms of deprivation across Europe, the household, regional and country context cannot be ignored. Verbunt and Guio’s (2019) analyses led them to argue that “the impact of the household-level risk factors is likely to be mediated by variables at country-level” (p. 859). This point was further examined by investigating whether and how patterns of social spending and other macroeconomic variables explain differences between countries. Verbunt and Guio (2019) distinguished between in-kind and cash social spending. In-kind social spending explained differences in material deprivation between countries while in-cash benefits did not, though they explained differences in income poverty. The country median income was the strongest explanatory variable for differences in severe material deprivation. To a lesser extent, total social spending and the targeting of cash transfers towards the poor also explained some of the country differences in material deprivation. Although this study did not examine the overlap between income poverty and material deprivation and excluded persons aged 60 years and over, it draw attention towards the importance of understanding material deprivation in the country context. Comparing deprivation between households

supporting disabled persons with other households cannot be done outside the contextual reality that mediates their deprivation.

Some of the context referred to by Verbunt and Guio (2019) that affects the patterning of deprivation across Europe is commonly attributed to the different welfare regimes. Nolan and Whelan (2011), building on Esping-Andersen (1990) and others, employed six distinct welfare regimes in their analysis: social democratic; corporatist; liberal; southern European; corporatist post-socialist; post-socialist liberal. Based on 2006 EU-SILC data covering 26 countries, the highest level of deprivation was in the liberal group and the lowest in the corporatist group, although when both deprivation and income poverty were considered together the social democratic group had the least prevalence while the liberal group had the highest. However, within each group there was significant variability, which raises the question of whether the welfare regime classifications are significant country-level determinants of deprivation, giving credence to Arts and Gelissen's (2002, p. 139) argument that "contrary to the ideal world of welfare states, the real world is likely to exhibit hybrid forms". Although a full discussion on welfare regimes vis-à-vis their potential and means to protect from deprivation is beyond the scope of this review, a consideration of how the different regimes functioned in Europe's last great recession reveals some interesting points. Watson et al. (2022) studied different welfare regimes in the pre- to the post-recession period examining how different groups considered to be at risk were affected. The recession led to significant increases in deprivation, especially in countries experiencing high unemployment; however, the deprivation increases were not immediate, which Watson et al. (2022) interpreted as reflecting households' struggle to maintain their customary lifestyle by using accumulated resources. The deprivation experienced by the different social risk groups studied varied across countries, but the order of risk followed did not. Although the largest deprivation gaps between the risk groups and the reference group was in the UK and Ireland (classified as the two liberal regime countries, the gaps in the social-democratic regime was not particularly low. Amongst the risk groups, households with a working age disabled member and single parent families experienced the highest level of deprivation gaps. Watson et al. (2022) concluded that while the liberal countries were the worst at protecting the at-risk groups from increased deprivation due to the recession, "none of the

systems is particularly successful at addressing the particular barriers faced by these groups” (p. 829). Morris and Zaidi’s (2020) analysis of the extra costs of disability across European states could not be explained within the three welfare regime clusters of Esping-Andersen (1990), with the highest additional costs of disability featuring in the social democratic welfare state regimes. On the other Kammer, Niehues and Peichl (2012) replicated Esping-Andersen’s (1990) three welfare regimes in their analysis of the economic distributional outcomes of the EU-15 countries. Böheim and Leoni’s (2018) review of the 1990-2014 policy developments in work-related disability and sickness benefits in OECD countries extrapolated a clustering of policy developments which also paralleled Esping-Andersen’s (1990) three welfare regimes. Yet, the long-term general trends towards retrenchment, with stronger employment support and stricter benefit conditionality, mask an increasing variation on several dimensions that characterise work-disability policy development in the countries examined.

The question of whether policy traditions matter in protecting disabled persons from poverty and social exclusion and in supporting active citizenship (discussed in detail in the next chapter) was asked by Halvorsen et al. (2017) having identified how disability policy pertains to distinct profiles that do not fall within the customary welfare regime typologies. Various factors would have contributed to development in disability policy including the national welfare policy traditions, but also the involvement of disabled persons organisations, and the role of social partners and the non-public sector. In this context, Halvorsen et al. (2017, p. 26) argue that “the diversity we can observe in the profiles of countries’ redistributive disability policy does not fit neatly with existing general typologies of welfare models or regimes”. As an alternative, they proposed a tentative, more comprehensive, typology of national disability policy systems in which 31 European countries were grouped by their level of social spending (high, mixed, low), and then analysed depending on:

- The role cash transfers played in each country’s disability-related public provision (comparatively high or low);
- The role services provision played in each country’s disability-related public provision (comparatively high or low);

- The role means-testing played in each country's disability-related public provision (comparatively strong or weak).

Based on these three factors and using 2011 and 2012 EU-SILC poverty and deprivation indicators and 2013 Eurostat figures for the countries' profiles on disability-related social protection spending, Halvorsen et al. (2017, p. 27) proposed the following six groupings:

1. High levels of spending on cash transfers and services provisions, and low degree of means-testing: Finland, Luxembourg, Netherlands, Norway, Sweden;
2. High levels of spending on cash transfers and services provisions and a high degree of means-testing: Austria, Belgium, Denmark, France, Germany, Iceland, Spain, Switzerland;
3. High level of spending on cash transfers, low level of spending on services provisions and low degree of means-testing: Croatia, Italy, Portugal;
4. Low levels of spending on cash transfers, high level of spending on services provisions, and both low and high degree of means-testing: Slovakia, Slovenia, United Kingdom;
5. Low levels of spending on cash transfers and services provisions and low degree of means-testing: Bulgaria, Cyprus, Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland, Romania;
6. Low levels of spending on cash transfers and services provisions and high degree of means testing: Greece, Ireland, Malta.

Using this typology with 2011 and 2012 EU-SILC AROPE indicators, the countries with comparative low levels of spending on cash transfers and services provision and weak means testing (group 5 above) had the highest level of material deprivation in 2012 while the countries with the same degree of cash transfers and services provision but strong means testing had the highest level of poverty risk. Halvorsen et al.'s (2017) typology of disability policy systems provides an alternative set of country-level determinants that can be used to understand the patterning of deprivation in households supporting disabled persons. However, it has not been used beyond the context within which it was developed.

The above review expounded how household deprivation is patterned by the factors that reduce a household's financial capability, either by decreased income or due to

increased costs, or both, and by the country context. It identified those who are most likely to be 'left behind' in the various circumstances of economic crisis or recovery. Issues like the vulnerability of households supporting persons with chronic health conditions or health problems, the critical role of social transfers especially for low-income households, the impact of (quasi-)joblessness on household deprivation, and the heightened impact of housing affordability for poorer households, all have bearing on households supporting disabled persons. However, the review also underscores the fact that disability is not a mainstream in deprivation research. Two examples of this gap are Guio et al.'s (2017) revision of the EU material deprivation variables and Guio, Marlier and Nolan's (2021) comprehensive review of over 15 years of EU-SILC data's contribution to improving the understanding of poverty and social exclusion in Europe. Notably, this last review has minimal reference to disabled persons and households supporting disabled persons; comprehending the poverty-disability link does not feature in the attempt to improve the understanding of poverty and social exclusion in Europe. In reality, few EU-SILC related research has focused on the impact of living with a limiting long-term impairment, health problem, or illness, on a household's experience of material deprivation across different EU countries. In the following section, I review the main studies that address some of this gap.

2.10.7 Comparative research on deprivation in European households supporting disabled persons

As explained in more detail further on in the methodology chapter (sec. 4.5.4), disability in the EU-SILC is measured through the 'Global Activity Limitation Indicator (GALI), which is a self-reported measure of limitations in activities considered normal for one's age and context. Although this measure gives a broad range of reported disability prevalence across the countries that participate in the EU-SILC, it has been shown to have concurrent validity with other measures of disability (Berger et al., 2015). The strength of this measure is more in examining trends in individual countries rather than in comparing prevalence of disability between countries. Studies based on EU-SILC data that examine disability, poverty and deprivation depend primarily on the GALI measure. Some other studies have used the presence of a disability-benefit to identify households supporting disabled

persons, with the inherent difficulty arising from the broad variety in the classification of social benefits. Any EU-SILC based research focusing on disability is conditioned by this perennial difficulty of how to conceptualise and measure disability.

There is no study that has focused on deprivation trends over a significant period of time in European households supporting disabled persons, comparing them with other households. Disability is recognised as a factor that contributes to the prevalence of poverty and deprivation; however, it is considered as one of many other factors including age, household structure, education, and labour market status (Boarini and Mira d'Ercole, 2006). Alternatively, it is considered as a component of deprivation in a multidimensional conceptualisation of poverty (Alkire, Apablaza and Guio, 2021); to be strongly limited in activities people usually do because of any ongoing longstanding physical or mental health problem, illness or disability is conceptualised as being 'deprived' (or what Holmes, 2001, referred to as the rhetoric of affliction and being deprived of an ableist normality). European households supporting disabled persons have not been the focus of any extensive poverty research (Mussida and Sciulli, 2022a). In the past few years, Eurostat has taken up the publication of disability segregated poverty and deprivation data, focusing on the higher prevalence of disabled persons among the at-risk-of-poverty cohorts and amongst persons experiencing material and social deprivation (Eurostat, 2022a). The EU-SILC data points towards a higher prevalence of deprivation in households supporting disabled persons. Analysing EU-SILC 2015-2018 data for Italy, Mussida and Sciulli (2022b) concluded that disability increased the risk of material deprivation (using the MD and MSD indicators as outcome measures), suggesting that the increased MD and MDS levels in households supporting disabled persons may be resulting from the extra costs of disability that directly impact the households' living standards compared to other households. They also identified persons with low education, older persons, single persons, households headed by a female, and low work intensity households as the characteristics of the subgroup of households supporting a disabled person that are most at risk of deprivation. Earlier on, Parodi and Sciulli (2019) had found similar results for the three components of the AROPE indicator using the 2007-2010 longitudinal component of the EU-SILC for Italy.

This higher prevalence cannot be simply interpreted as a direct effect of disability. It has been argued, for instance, that it is more likely for poverty and deprivation to lead to ill health and disability than the other way round (see for instance Guio et al., 2017, p, 28). The argument has also been made that deprivation and poverty differences between households with or without a disabled child are related to the socioeconomic position of the household, rather than the impairment reality (Shahtahmasebi et al., 2011; Emerson et al., 2010). The contrary has also been argued, namely that in countries with a low level of material deprivation because of high welfare protection, those experiencing economic hardship are likely to be disabled persons with poor health, in which case the resulting limitations are “more often the cause rather than the consequence of poverty”, identifying in particular “the difficult access or difficulty in remaining in the labour market” (Cambois, Solé-Auró and Robine, 2016, p. 1228) as a main contributory factor.

The theoretical question revolves around the notion of causality; if, for instance, households supporting disabled persons are households with a lower level of education and with a lower level of work intensity, can their higher prevalence of poverty and deprivation be attributed to the disability reality, or should it rather be attributed to the lower level of education and lower level of work intensity? This question is not one that can be categorically resolved. When the impairment reality limits the level of education one can achieve in an academic-based competitive education system, resulting in a low level of education that limits one’s ability to function in a competitive profit-driven labour market, with the resultant consequence of less employment income, which together with possible increased disability costs lead to a higher level of deprivation, how should the disability-poverty link be best conceptualised? Even if it results that the higher prevalence of deprivation in households supporting disabled persons had to be fully explicable through their sociodemographic characteristics, the disability-poverty link would still not have been contradicted; rather, the reality of living with impairment is manifested in the characteristics of such households.

An interesting case study that throws some light on the above issue is Biggeri et al.’s (2022) research on the impact of a family member with acquired brain injury on household deprivation. In this study, the impairment and the concomitant severe

limitations were undoubtedly not a consequence of poverty or deprivation or economic hardship, although psychological and cognitive consequences of acquired brain injury can be aggravated if health and rehabilitation services are not available (which means that poverty can aggravate the consequential disability from the acquired brain injury). Perceived economic vulnerability was strongly associated with the severity of impairment, and the use of paid support services further decreased the family's disposable income. The study's findings point towards a significant and negative impact on a household's material wellbeing and economic resources due to the severity of impairment resulting from the acquired brain injury, leading Biggeri et al. (2022, p. 160) to conclude that "the well-being of the household can be improved by both the availability of economic resources and the quantity and quality of social relationships inside and outside the family". The authors further argue that their findings demonstrate the importance of providing personalised economic assistance to individuals living with severe impairment and the households that support them, based on the severity of the impairment.

In two of the few studies that examined disability and poverty across Europe, Cambois, Solé-Auró and Robine (2016) and Cambios et al. (2016) explored the relationship between disability, self-perceived economic hardship and education using the 2009 EU-SILC cross-sectional data for 26 countries. Economic hardship was studied through two measures of economic stress ('ability to cope with unanticipated expenses' and 'ability to make ends meet') while respondents were grouped in three categories of education. In all 26 countries, having activity limitation was positively associated with economic hardship, with the association being stronger in countries with lower levels of economic hardship. Although there were large variations, throughout all countries, persons with higher levels of education experienced less economic hardship, identifying education to be a mediating factor between disability and economic hardship; in most cases, persons with activity limitation followed the same average patterns as the general EU averages. The prevalence of persons with activity limitation was generally higher in the lower education category. This finding is consistent with Verbunt and Guio's (2019) finding that education is the strongest predictor of material deprivation.

Further, Cambois, Solé-Auró and Robine (2016) distinguish the nature of the disability-deprivation relationship in countries with high levels of deprivation and low protection from countries with low levels of deprivation and high protection against material deprivation. They make the point that while in countries with high levels of deprivation the association between activity limitation and economic hardship is high especially for those with a low level of education, in some countries with egalitarian welfare regimes and low levels of deprivation the relationship between education, activity limitation and economic hardship is a weak one and disappears for high levels of education. Their research points towards the way economic hardship can both contribute to activity limitation and be affected by activity limitation, concluding that the “contribution of [economic hardship] to the social differentials in disability [shows] very different features across Europe” (Cambois, Solé-Auró and Robine, 2016, p. 1232). And in a parallel study, Cambois et al., (2016) concluded that the broad variation in the disability prevalence, education level, and relative disadvantage across European countries cannot be neatly explained by the welfare regimes of the respective countries. In particular, divergences amongst the typical Nordic welfare regimes indicated the necessity to further understand the prevalence of disability and education related deprivation within the particular country context. In essence, Cambois, Solé-Auró and Robine’s (2016) and Cambois et al.’s (2016) research concluded that the relationship between activity limitation and deprivation can work both ways, and depends on the country context and on the education level of those concerned. (In both studies, the unit of analysis was the individual and not the household.)

Low levels of education also limit employment opportunities: when an impairment limits one’s educational achievement, the low level of education itself becomes an additional barrier, additional to the impairment itself, in securing good employment. This reality translates into a strong disability employment gap, the reality that across all of Europe the participation of disabled persons in the labour market remains substantially lower than average (Van der Zwan and de Beer, 2021). The reality of the disability employment gap expresses the inequality that disabled persons experience in the job market and all its consequential outcomes. Van der Zwa and de Beer (2021) examined this reality for 23 European countries based on the EU-SILC data between 2004-2017. Using the GALI measure, they compared the

employment outcomes of both persons who were limited and those who were strongly limited in activities considered normal, with the employment outcomes of other persons. There were broad variations in the disability employment gap across the countries examined. This variation could not be fully accounted for by either the states' welfare generosity or by the labour market policies targeting disabled persons. The combined effect of employment protective legislation and a higher share of GDP spent on disability benefits contributed to more disabled persons in employment. Albinowski, Magda and Rozszczypała (2023) estimated that a fifth of the disability employment gap in the 25-34 age group within the EU is explained by the gap in education between disabled and non-disabled persons. Within the UK labour market, Bryan et al.'s (2023) study showed that the disability employment gap was not just a function of disabled persons' education but also impacted by structural inequalities in the labour market. The focus on the disability employment gap is only one aspect of the inequality disabled persons experience in work, the other being the disability wage gap, both of which have a potential direct bearing on disabled persons' experience of poverty and deprivation. The substantial pay gap experience by disabled persons cannot be entirely explained away by productivity-related considerations, suggesting that part of the lower earnings may be reflecting discriminatory practices (Kruse et al., 2017).

At various levels, the employment disability gap and the disability wage gap is greater for women (van der Zwan and de Beer, 2021; Kruse et al., 2017), a double disadvantage that persists into older age. Cambois, Solé-Auró and Robine (2019) study identified how women are overrepresented amongst disabled persons in most European countries, even after controlling for age. Moreover, disabled women generally experienced more economic hardship than men, including in countries with protective welfare regimes, while not necessarily so in countries with low levels of protection. Cambois, Solé-Auró and Robine (2019) consider three possibilities contributing to the gender gap in disability: increased exposure to situations of adversity; higher risk of economic hardship; and higher exposure to factors that increase risk to disability and hardship. And unequal access to the labour market potentially contributes to all three possibilities.

2.10.8 An identifiable research gap

Since 2004, research based on the EU-SILC data has contributed significantly to knowledge of, and about, poverty in European countries. We know much more about the determinants of poverty and deprivation at both the micro and macro level. In this context, as discussed above, disability finds itself rather on the peripheral of poverty research, even though the disability-poverty link has been at the centre of disabled persons' long human rights engagement and continues to feature predominantly in the EU's disability rights strategy for 2021-30 (European Commission, 2021). The foregoing review of the research literature also highlights the necessity of adopting a broader perspective in examining the link between disability and poverty, one that surpasses the conventional notion of income poverty. Living with an impairment commonly implies a relative depreciation in one's quality of life compared to the rest of society, and this depreciation takes place even if one is not poor. Israel and Spannagel (2019, p. 167) stress the point that income poverty does not "capture what the actual standard of living is, as further needs that may be due to bad health or disability are not reflected", opting for deprivation as the outcome measure to study "the 'demand' side of a household". The nature of the disability-poverty link in European countries can be examined by focusing on the impact on European household's deprivation when including a disabled adult. The analysis of the EU-SILC data can contribute to a better understanding of the depreciation in the quality of life experienced by European households supporting disabled persons by examining in detail the nature of deprivation experienced by these households compared to society at large.

2.11 Conclusion

Poverty is a complex phenomenon, multidimensional in the way it is conceptualised and the way it is experienced. The word 'poverty' describes many different things that are difficult to group in one concept (Spicker, 2007a). The review of the literature in this chapter clearly points towards poverty as the limitation of choices, the limitations of one's capability to live an ordinary life, to fulfil one's aspirations, to develop one's potential, the deficit of opportunities, the deprivation of belonging to a community. In this respect, poverty can be best understood as the subjective

lived experience that restricts the “overall capability that any person has to lead the kind of life she has reason to want to lead” (Sen, 2004, para. 11). The full experience of poverty and living with a limiting long-term impairment, health problem or illness can only be intensely understood at an individual level; aggregates and averages, on the other hand, provide a partial picture of the communal experience linking poverty to disability. It is such a partial picture that is undertaken in this study.

Clearly, Amartya Sen’s capabilities conceptualisation of poverty suggests the adoption of a broad multiple deprivation outlook towards poverty and disability. Such a perspective would address issues like mental health, life satisfaction, lack of autonomy, and possible other dimensions covering education, employment and participation. Hick (2014a) found a strong association between material deprivation (measured in the classical deprivation items list) and other dimensions of deprivation studied, suggesting that “material deprivation is particularly useful in terms of *identifying* individuals who are at risk of multiple forms of deprivation which we might expect to be related to material poverty” (2014a, p. 1096). Hick’s (2014a) study makes the case for the use of material deprivation measures and not low-income measures to examine “individuals who face a pronounced risk of multiple dimensions of deprivation—dimensions which we may expect to be related to material poverty” (2014a, p. 1100). At the same time, in his examination of the distinctive contribution of Sen’s capabilities approach for poverty conceptualisation and research, Hick (2014b) argues that a narrow conceptualisation of material deprivation “fails to capture the many ways in which people’s lives can be impoverished” (2014b, p. 304). The point here is that beyond a focus on poverty as lack of resources, impoverished lives are the result of a broad range of deprivations (not just material deprivation). Hick (2014b, p.307) goes on to define poverty as “*inadequate material living standards arising from a lack of resources*” where the ‘living standards’ are described as a set of “‘core capabilities’, which all people value” (2014b, p. 313). Hick (2014b) suggests a list of capabilities to illustrate the core dimensions that can capture poverty defined as capability deprivation, as distinguished from poverty as relative deprivation which focuses on people’s resources. While recognising the theoretical value of conceptualising poverty as capability deprivation especially for working out the full actuality of the link between disability and poverty, this study restricts its focus on poverty as relative

material deprivation in the quantitative analysis of the EU-SILC data; however, it adopts a broad material deprivation conceptualisation of material poverty, including measures on ability to participate in society, basic nutrition, housing and financial stress, in addition to other material deprivation measures available in the EU-SILC. Conversely, the conceptualisation of poverty as capability deprivation provided a strong theoretical framework to understand the disabled person's experience of poverty and deprivation as depicted in their UNCRPD compliance reports.

Sen's capabilities approach to understanding poverty, summarised by Banerjee and Duflo (2011, p. 5) in the now famous adage "poverty is not just a lack of money; it is not having the capability to realize one's full potential as a human being", poses a fundamental question: If poverty is deprivation from the capability to realise one's full potential as a human being, then what is the counterpoint of poverty? Piachaud (1981, p. 421), reacting against the notion of studying poverty through lists of haves and have nots, argued that the "reason for tackling poverty is not to create uniformity, but to push back the constraints and increase choice and freedom". In the following chapter, the notion of citizenship is concisely reviewed and discussed and conceptualised as the 'endowment of one's capability to realise one's full potential as a human being', with special reference to persons living with a limiting long-term condition and their families. In this construction, citizenship is guaranteed by the state's covenantal support ensuring one's capability to realise one's full potential as a human being. It is the counterpoint to material poverty; and material poverty and material deprivation are the antithesis of citizenship. The review provides the theoretical framework within which the analysis of the DPOs reports in Chapter 8 asks the question: What is the nature of deprivation experienced by disabled persons in Europe and what bearing does this deprivation have on their capability to live a full and active citizenship?

Chapter 3. Tackling Poverty – The Foundations of Active Citizenship

The concept of citizenship elicits the notion of “a society of civic equals who share in fashioning their collective life” (Bellamy, 2008, p. 122). Citizenship involves membership of a state, which entitles the citizen to rights and responsibilities, and participation in the matters that shape the political community of which one is a member. More than solely a formal legal status, the concept of citizenship outlines the normative features of the moral obligations between the state and its citizens. This “social morality ... underlies our whole sense of self-worth, affecting in the process the ways we treat others and are treated by them” (Bellamy, 2008, p. 122). Conversely, it can be argued that poverty and deprivation adversely affect one’s whole sense of self-worth, the way persons living in poverty feel treated, while making a parody of the notion of ‘a society of civic equals’. Poverty and citizenship do not live comfortably with each other.

3.1 Introduction

In Aristophanes’ play “Plutus”, Chremylos, a poor elderly citizen of Athens does not want his son to be poor like him. So he seeks advice from the oracle of Delphi on whether to teach his son the values of injustice, dishonesty and amorality as a path to become rich. Apollo directs Chremylos to invite to his home the first man he meets after having sought guidance. Chremylos meets a poor blind beggar who turns out to be Plutus, the God of Wealth, blinded by Zeus so that he would distribute wealth indiscriminately. Chremylos decides to work at restoring Plutus’ sight, believing that if Plutus could see again he, Plutus, would distribute wealth justly and eradicate poverty (thus solving the dilemma he had concerning his son). His plan is strongly opposed by the goddess Poverty. “Drive me out? Could you do mankind a greater harm?” (Aristophanes, ca. 388 B.C.E./1938, lines 464-465) argues Poverty. And then the dialogue follows in which Chremylos argues that driving out poverty would be the “greatest blessing possible for the human race” (line 505-506) while Poverty passionately argues that if poverty is eliminated, no one would have any reason for working anymore, all slaves would be free, people would become lazy, and lose their values and character, for “wealth coupled to such sordid greed is yet more shameful

than poverty” (line 590). On being banished from Athens, Poverty’s parting shot is “One day you will recall me” (line 609). Plutus gets back his eyesight and embarks on an economic and social redistribution revolution. Those who were rich claim injustice as they lose their privileges, and some gods are angry.

Over 2,400 years later, poverty has not been banished let alone recalled. Like Poverty in Plutus, Gans (1972, pp. 278-283) expounded the different economic, social, cultural, and political functions that poverty served in American society and identified fifteen functions that serve the interests of the non-poor. Poverty and the poor:

1. “made sure that the ‘dirty work’ is done”;
2. “subsidize, directly and indirectly, many activities that benefit the affluent”;
3. “creates jobs for a number of occupations and professions which serve the poor, or shield the rest of the population from them”;
4. “buy goods which others do not want and thus prolong their economic usefulness”;
5. “can be identified and punished as alleged or real deviants in order to uphold the legitimacy of dominant norms”;
6. “enable others to feel fortunate for being spared the deprivations that come with poverty”;
7. “offer affluent people vicarious participation in the uninhibited sexual, alcoholic, and narcotic behavior in which many poor people are alleged to indulge”;
8. “helps to guarantee the status of those who are not poor”;
9. “assist in the upward mobility of the nonpoor”;
10. “add to the social viability of noneconomic groups ... to practice its public-mindedness so as to demonstrate its superiority over the *nouveaux riches* who devote themselves to conspicuous consumption”;
11. “perform several cultural functions”;
12. “the ‘low’ culture created for or by the poor is often adopted by the more affluent ... also serve as culture heroes and literary subjects”;
13. “serve as symbolic constituencies and opponents for several political groups”;
14. “can be made to absorb the economic and political costs of change and growth in American society”;

15. “played an important role in shaping the American political process; because they vote and participate less than other groups, the political system has often been free to ignore them”.

Gans (1972) concludes his analysis by claiming that “poverty persists not only because it satisfies a number of functions but also because many of the functional alternatives to poverty would be quite dysfunctional for the more affluent members of society” (p. 287). Poverty would only cease to exist if the functional alternatives do not negatively impact the affluent majority, or if poverty itself becomes “sufficiently dysfunctional for the affluent” (p. 288), or if the poor gain enough political power to effect social change. In the context of poverty and disability, functions 3, 6, 10, 13, 14 and 15 have a particular relevance when discussing society’s tackling of disability poverty and are reflected in various points of the discussion further on in this chapter. There is, however, one main function that poverty serves society with regards to disabled persons; it provides society with a latent rationale that justifies its devaluing of disabled persons and the disgracing of anyone who is not productive in the labour market.

Remarkably, the issues raised in the play *Plutus* continue to persist, not solely as theoretical issues for debate but rather as factors that trouble the foundations of social policy, asking the question ‘What kind of society do we want to live in and how do we get such a society?’ Townsend considered the elimination of poverty as “one of the basic aims of social policy” (1954, p. 130). More pertinent to this study is the question on how society understands poverty and disability, and the research on policy responses to poverty, with a particular emphasis on policy attempts to break the link between poverty and disability.

If poverty is recognised as the denial and lack of freedom to make choices and lack of opportunities and control to live one’s life as is customary in one’s society (Lister, 2021; Spicker, 2007a; Townsend, 1979), then the elimination of poverty involves the active pursuing of policies and services that increase one’s freedom (or capability in Sen’s terminology) to make choices, and increase one’s opportunities and control over one’s life.

The converse of poverty (as understood here) can be conceptualised in Andersen and Halvorsen's definition of citizenship as the practices that allow someone to live a decent life as characterised by "the prevailing standards in society, being able to act autonomously, being able to participate in social and political life in the broadest sense, and having 'civic' orientations to the political community and to one's fellow citizens" (2002, pp. 12-13). They contrast this understanding of citizenship with failed citizenship characterised by "poverty (exclusion from participating in the prevailing standard of living), social isolation (marginalisation from social networks and feeling of loneliness), passivity (in relation to social and political life), dependency, powerlessness, 'un-civiness', or constrained participation" (2002, p. 13). In this respect, citizenship is expressed from the perspective of the citizen and not from the perspective of the state, what Lister (2013, p. 110) refers to as social citizenship perceived "from below" not articulated "from above". It is not a notion of citizenship that is selective and conditional or that draws a line on who qualifies or does not qualify for certain social rights. Citizenship so argued involves the full capability to exercise one's autonomy, freedom, rights, responsibilities and contribution towards one's community, other citizens and the state.

Such an understanding of citizenship considers poverty as the antithesis of citizenship; rather than seeing poverty as one cause of diminished citizenship or as one barrier to full citizenship, poverty is understood as the extreme opposite pole of full and active citizenship, and as defined by Andersen and Halvorsen (2002, p. 12) citizenship is viewed as "a question of practices" that secure the capability for a "*full and equal membership of society*". This chapter briefly reviews the research literature on societal responses to poverty and disability, with a main focus on the concept of citizenship or full and active citizenship as offering a theoretical framework that can incorporate and address the different clusters of poverty classifications articulated by Spicker (2007b), offering a conceptual way out of poverty and a basis for a policy response to break the link between poverty and disability, a link that can be severed by focusing on the factors that ensure disabled persons basic capabilities as described by Nussbaum (2006).

3.2 The different responses to disability impoverishment

Disabled persons carry with them a label that marks the impoverishment they experience because of a limitation in a physical or sensory function, or in their thinking process, or their emotional expression, resulting from birth impairment, health condition, illness, or injury, but mainly exacerbated by society's ableism. For Oliver (1992), this disability label describes "nothing less than the denial of basic human rights to certain groups within society" (para. 2). The enactment in 2006 of the UNCRPD as an international special 'human rights instrument' substantiates Oliver's claim. Blessing (2011, p. 9) writes about the "artificial yet nevertheless impenetrable line that has been drawn between people who have labels of disability and those who do not". This discriminating otherness has characterised two distinct paradigms in society's responses to the disability, described by Prince (2004) as the charity to state assistance model and the bio-medical model. In spite of certain developments towards a human rights and citizenship paradigm, Prince (2004) argues that the other two paradigms continue to permeate policies and services and in society's response to disability. For instance, state assistance is often framed in providing subsistence to disabled persons without income but rarely enough for disabled persons to participate fully in society. Also, the emphasis on disabled persons' physical and mental incapacities is a key component of the administration of state benefits and professionally driven services. Hampton (2016), focusing on the UK welfare state, similarly argued that the welfare state by and large addressed disabled persons' welfare within a charitable paradigm, and that different views on the combination of statutory and non-statutory service provision "were merely shifts in opinion on sources of charity" (Hampton, 2016, p. 240).

Snow (2015), identified four ways in which society has generally dealt with disabled persons:

1. The first response is reflected in society's effort to restore the normality of the person's functioning, such as rehabilitation services and generous social benefits addressed towards war veterans. To the extent that such efforts are successful, those concerned somewhat maintain "their status of 'ordinary citizens'" (Snow, 2015, p. 85);

2. A second response involved society assigning specific roles to disabled persons for whom normality could not be restored, such as when specific jobs are reserved for disabled persons and the reserved roles become the only avenue for participation in the labour market for those concerned;
3. Failing restoration to normality or the ability to take a reserved diminished role, society developed different levels of care and control, their nature reflecting different times and contextual values. So, for instance, up to this day society continues to house disabled persons in large institutions, but also in smaller institutional replicas within the community where those concerned have minimal or no choice or control over the lives they live;
4. The fourth response is one in which society abandons disabled persons, by what it does or what it fails to do. In Snow's (2015, p. 86) words: "Sometimes there has been no available and willing caregiver, no 'special' role and no asylum. To this day vulnerable people are sometimes killed or 'allowed to die'." Two decades later, the plight of disabled persons during the Covid-19 pandemic confirm Snow's (2015) assessment (see for instance Siobhan Brennan et al, 2020).

With the exception of the first response, all other responses relegated disabled persons to different levels of deprivation and "institutionalised poverty" (Snow, 2015, p. 41). The first response was available only for a distinct group of disabled persons and only to the extent that one could achieve society's measure of normalcy.

All of these societal responses to disability continue to draw a clear us/them distinction, an inferior type of citizenship, or as Devlin and Pothier (2006, p. 1) describe it "a system of deep structural economic, social, political, legal, and cultural inequality in which persons with disabilities experience unequal citizenship, a regime of dis-citizenship". Barton (1993, p. 242) points out the further negative othering of disabled persons with intellectual impairment, describing them as "members of a subordinate and systematically disadvantaged group". For Snow (2015, p. 86), disabled persons required a different response from society, one that would ensure that they have "the opportunity to live, work, and participate like 'regular folk' ... They weren't going to become 'normal', they didn't want to settle for stereotypical roles, they didn't need to be 'cared for' and they certainly weren't

prepared to die”. Barton (1993) similarly argued that the extent of institutionalised and structural discrimination that disabled persons experienced in aspiring for ordinary citizenship cannot be challenged by goodwill, charity and social services alone.

3.3 The limitations of the current response

No doubt, unemployment and underemployment are major contributory factors to the experiences of material deprivation of disabled persons and their households (see for instance Aldridge and Hughes, 2016; Nolan, 2014; Parodi and Sciulli, 2012; Parodi and Sciulli, 2008). Both Oliver (1990) and Barnes (1992) consider disabled persons’ exclusion from the labour market as the fundamental source of all other experiences of exclusion they experienced. This point is further argued by stressing that a properly pursued policy of inclusion of disabled persons in the world of work would “reduce public expenditure by taking people off social security payments ... making more people net givers to, rather than takers from society” (Oliver, 2009, p. 123). However, the assertion is qualified on two counts. First, a policy of inclusion of disabled persons in the labour market cannot assume that “all disabled people can work at the same pace as non-disabled people or that everyone with an impairment should work in the conventional sense” (Oliver, 2009, p. 123). Such an assumption is one of the basic oppressions disabled persons are subjected to. Second, the full inclusion of disabled persons in the world of work implies a “reappraisal of the very meaning of work” (Oliver, 2009, p. 123) that includes a transformation of work practices to facilitate the participation of disabled persons. In other words, the inclusion of many disabled persons in the world of work cannot happen in the prevailing labour market. Abberley (2002) rejects the full integration of disabled persons in the labour market as the panacea for securing social membership or citizenship. He further argues that “a consistently liberative analysis of disablement today must recognize that full integration of impaired people in social production can never constitute the future to which all disabled people can aspire” (2002, p. 135). Recognising the limitation of the labour market to secure disabled persons’ citizenship is necessary to explore more realistic alternatives.

Borsay (2005, p. 205) makes the interesting point that even if labour market integration had to be an achievable goal for disabled persons, it would effectively mean that disabled persons become part of a capitalist labour market that exploits them and does not provide them with adequate income, or paid work that is “fundamentally unequal”. Borsay’s (2005) point reinforces Oliver’s (2009) argument that full participation of disabled persons cannot take place in the way the current labour market is organised and operates. Another limitation, recognised by Oliver (2009) is the demographic composition of disabled persons with the higher proportion of disabled persons being older persons, meaning therefore of pensionable age in labour market terms.

The above brief review highlights the limitations of society’s current response to disabled persons’ reality in securing for themselves adequate economic resources through employment. At the basis of society’s response is an underlying implicit assumption or ideology that paid employment is a qualifying condition for citizenship. Such an assumption does not pertain solely to disabled persons. However, in the case of disabled persons it is particularly relevant because the world of work is moulded around the characteristics of non-disabled persons in all its aspects, namely in the expected inputs and the related outputs, both of which ignore disabled persons’ needs. In the absence of a utopian transformation of the labour market along the lines outlined by Oliver (2009), paid employment alone cannot give disabled persons an insurance against poverty and deprivation. Not unlike other people, the value of work for disabled persons goes beyond its financial benefits (Adams and Oldfield, 2012; Cramm et al., 2009); for that reason, the argument on access to the world of work for disabled persons cannot be focused only on the basis of the financial security it provides.

The limitation of the labour market in providing many disabled persons and their households adequate employment derived income to prevent them from living in perpetual material poverty or deprivation, and the support needs of disabled persons to be able to find and keep work, has been addressed through different charity responses and provisions of the welfare state. Devlin and Pothier (2006) argue that both the charity and the welfarism responses have not managed to address the needs of disabled persons that would ensure their substantive

citizenship. Similar arguments have been made in a different context by Oliver (2009, p. 125) who decries disabled persons' "negative experiences of dependency-creating services". Barton (1993) had earlier described disabled persons' struggle for citizenship as one involving the restructuring of policies, services and society so that "disabled people have real choices and rights in their lives" (1993, p. 243). Hampton (2016, p. 244) is even more critical of what the welfare state managed to achieve for disabled persons in the UK arguing that as a result of the "overall failure of the state to help disabled people attain ordinary levels of socioeconomic participation ... Disabled people did not experience equality in incomes, outcomes or wealth". This reality is a far cry from the belief which Marshall (1950/1992, p. 48) identified as implicitly driving the development of the welfare state in fostering and advancing the substantive rights of citizenship, namely the conviction that "society should, and will, guarantee all the essentials of a decent and secure life at every level, irrespective of the amount of money earned".

3.4 Capabilities, disability and citizenship

At a more philosophical level, Nussbaum (2006, p. 15) identifies the absence of persons with severe physical and mental impairments and others considered as unproductive in the conceptualisation of any social contract principle as contributing to disabled persons "not being treated as full equals of other citizens; their voices are not being heard when basic principles are chosen". Not only are disabled persons excluded from participating in the design of society's social contract but they are also excluded from being beneficiaries of the social contract and any inclusion is typically an afterthought. For Nussbaum (2006, pp. 17-18), "the omission of people with disability from the initial choice of basic political principles has large consequences for their equal citizenship more generally, through the structure that is characteristic of social contract theories". Inbuilt in the social contract *forma mentis* is the utilitarian notion that one stands to gain from the arrangement, excluding "those who will demand unusual and expensive attention without contributing anything much to the social product, thus depressing the level of society's well-being" (Nussbaum, 2006, p. 104). There is a convergence between Nussbaum's (2006) argument that society's basic institutions of reciprocity were

not designed with disabled persons in mind and the critique of the welfare state outlined above. For Nussbaum (2006, pp. 98-99), human justice:

requires recognizing the equal citizenship of people with impairments, including mental impairments, and appropriately supporting the labor of caring for and educating them, in such a way as to address the associated disabilities. It also requires recognizing the many varieties of impairment, disability, need, and dependency that 'normal' human beings experience, and thus the very great continuity between 'normal' lives and those of people with lifelong impairments.

In the absence of such 'human justice', persons with impairments requiring atypical support and care needs are left without the capability to fully participate in the life of their communities. Moreover, substantial work done supporting disabled persons is unrecognised, outside the realm of the social contract, assumed as given as long as it is there, with a disproportionate share being shouldered by women. Nussbaum (2006) draws a parallel with situations in the lives of non-disabled persons in which a similar development takes place, namely when impairments and limitations develop as a result of accident, health condition or old age. In all of these situations, when the diminished capability to fully participate in society is not addressed, those concerned lose their capability to live as equal citizens; for some persons, this loss of full citizenship capability is a lifelong struggle, while for others it may involve a segment of their life journey. For a society to guarantee the foundations of full citizenship for all, it has to address the reality of living with impairment in its basic institutional configurations and not as an afterthought. It is not enough for society 'to take care of its dependents' as that renders the relationship of disabled persons with society as one of dependents, a relationship that does not represent citizenship.

Following Sen's capabilities approach, Nussbaum (2006) argues for a society built on commitment to support the human capabilities of all citizens, rather than one formed on a social contract that benefits mainstream society at the exclusion of persons living with impairment. The good of self and the good of others are not considered as competing elements in the foundation of a society built on human justice. Human beings do not earn their citizenship by being productive and

productivity is not considered as the main end of life; rather, human beings “have a claim to support in the dignity of our human need itself” (Nussbaum, 2006, p. 160).

The main question then focuses on what persons with impairments are able to do and to be, rather than how much money they have. Two key considerations are relevant here: an identification of the obstacles disabled persons experience to be able to function in society and the role of care and support in enabling all of their human capabilities and the capabilities of those who support them. Such an approach leads to what Nussbaum (2006, p. 173) refers to as a “commitment to a plurality of heterogeneous entitlements, all fundamental for social justice”. Society’s constitutional endeavour then becomes its structures, policies and services to secure all basic capabilities for each individual citizen according to one’s individual needs. Citizenship can thus be conceptualised as one’s full capability to fulfil one’s potential, and “the case of disability leads us to focus on the importance of care as a primary social entitlement” (2006, p. 178) and as basic as economic matters. Thus, while Nussbaum recognises economic and care entitlements as basic needs permeating all other capabilities, she is careful not to create a hierarchy of basic capabilities’ importance, given that the threshold for each capability is considered as “a minimum beneath which a decently dignified life for citizens is not available” (2006, p. 179). Any society is considered to be doing its job towards its citizens if it provides each citizen with the social infrastructure essential to have the capability to achieve a good life. Rejecting the idea of a different list of capabilities for disabled persons as dangerous, Nussbaum (2006) argues that the support disabled persons may need is the justification for making that support available for when disabled persons need it and want it and not construed as an excuse to reduce choice and force dependency. Such support ensures disabled persons’ ability to exercise their full range of capabilities, thereby enjoying a full and equal citizenship. Thus, the fulfilment of disabled full citizenship necessitates a society that restructures itself to disable the barriers and support each individual’s capabilities:

A decent society will organize public space, public education, and other relevant areas of public policy to support such lives and fully include them, giving the caregivers all the capabilities on our list, and the disabled as many of them, and as fully, as is possible. (Nussbaum, 2006, p. 222).

In Nussbaum's (2006) extensive consideration of disability and capabilities, three points highly relevant to this study are highlighted:

1. Although she goes at length to emphasise that all ten capabilities are equally essential to a good life, she concedes to the argument that economic adequacy is fundamental to all capabilities;
2. For disabled persons and the people that support them, another fundamental means to enabling all capabilities is the availability of care and support whenever it is needed and wanted;
3. The emphasis on the application of the same list for all disabled persons is necessary to ensure that society does not set any lower thresholds based on impairment; however, enabling capabilities necessitates the individualisation of resources according to one's needs.

These points for Nussbaum (2006, p. 3) are necessary to address this "serious unresolved problem[s] of justice". They are necessary for ethical action that binds all of society and all societies. It depicts the relationship of society that enters into a covenant, rather than a social contract, with disabled persons (and all persons for that matter) assuring them that it will always be there to ensure their capability for citizenship.

3.5 Citizenship and disabled persons

In a scoping review of 295 peer-reviewed journal articles covering disability and citizenship, S epulchre (2017) concluded that while the meaning of citizenship is rarely discussed, it is often narrowly conceptualised as representing one's status in securing access to social rights; to the extent that disabled persons are secured their social rights their citizenship is intact. This understanding, S epulchre (2017) explains, lacks a broader perspective on citizenship in terms of disabled persons' belonging to society through their contribution and participation. It also falls short of the use made by disabled persons' organisations of "the concept of citizenship for criticising the paternalist welfare state and claiming that disabled persons should be considered full citizens rather than dependent patients" (2017, p. 953). For S epulchre, the increase in the number of studies drawing on the concept of citizenship in relation to disability does not signify a more in depth understanding

of the relationship. In particular, a focus on the contribution of disabled persons to society is limited to a few studies. The nearly exclusive focus on citizenship as excess to social rights “risk[s] reinforcing the view that persons with disabilities are merely a burden for society” (2017, p. 954). This risk is further compounded by the fact that disabled persons are more often than not studied as one homogenous group, isolated from their family and support networks and their other intersecting identities. Interestingly, this scoping review does not address poverty and deprivation as a main barrier to disabled persons citizenship or their capability to act as citizens.

Sépulchre (2021), in her comprehensive exposition of citizenship as it connects to disabled persons, considers citizenship as the formal legal rights granted by a state to its citizens through different authorities, which determine one’s level of membership in society. Given that different authorities are inconsistent in their interpretation of one’s rights, different gradients of membership exist. Formal citizenship does not guarantee full membership; rather, Sépulchre (2021) considers citizenship as constructed on seven basic blocks, namely legal rights, state authorities, territory, population, time, costs, and normative ideals. Of particular interest for this study is the ‘costs’ building block. Sépulchre (2021) recognises that there are costs involved in ensuring that citizens have the resources they need to be able to materialise the rights given by formal citizenship. This point derives from Marshall’s (1950/1992) understanding of the role the welfare state serves in securing the fruits of citizenship. The ‘costs’ building block of disabled persons’ citizenship in Sweden has been significantly shaken with the administrative cutbacks on the provision of personal assistance services. Although no changes have been carried out in the legal rights to personal assistance services, stricter regulations since 2006 effectively mean that fewer disabled persons in Sweden have the support they need to enjoy their citizenship rights (Sépulchre, 2021). Disabled activists’ views analysed as part of Sépulchre’s (2021) study questioned how basic rights could be conditioned by the costs involved; if the ‘costs’ building block is necessary for the construction of citizenship, then what kind of equal rights are guaranteed by citizenship? The point being made here is that on a practical level, in a country considered as avant-garde in the exercise of disability rights, disabled persons’ citizenship is only secured to the extent that the ‘costs’ foundation is

protected. Christensen et al. (2013) analysed the personal assistance services of Sweden, Denmark and Norway as a social right that enhances citizenship in Marshall's conceptualisation, concluding that different statutory rights and eligibility requirements determine the extent to which such services support citizenship, understood as membership in society.

Although Sen's capabilities theory, as elaborated by Nussbaum (2006) in her discussion on a human justice approach to disability, cannot be classified as a theory of citizenship, it does capture important assumptions that find resonance in various works that have studied citizenship and disability and provide a theoretical understanding for citizenship as society's 'covenantal' justice with disabled persons. As discussed above, the capabilities approach provides a normative and analytical perspective that embraces the diversity of disability, recognising difference and individual needs as fundamental to justice and equality. The set of fundamental human capabilities essential for a good life can be considered as the framework that encapsulates what is necessary for citizenship, a full and active citizenship, and considered as fundamental entitlements (Nussbaum, 2003). Situations in which any of one's capabilities are compromised can be considered as also devaluing one's citizenship. Nussbaum's (2006) analysis on the critical role of economic adequacy, care and support, and individualisation of resources in achieving all capabilities draws attention to the impact of poverty and deprivation on citizenship; poverty, material deprivation and lack of personalised support for persons living with impairments disables one's capability to achieve citizenship.

Taking a practical approach to supporting persons with intellectual impairment, Duffy (2006) identified six basic components of how such work can enable full citizenship for disabled persons, namely: self-determination, direction, money, home, support, and community life. Key to citizenship are the financial resources to live by and control one's life, a home as the basis of one's life, support to be able to do the things and live the life one aspires to, and control over one's life. Duffy (2006) makes the point that such citizenship is constrained by policies of the welfare state that restrict one's ability to aspire for an ordinary life, such as saving money, owing a house and marrying, because of entitlement criteria that lock people in poverty. Further, most of the financial resources supporting persons with intellectual

impairments go to service agencies and professionals, with disabled persons having minimal control on how such resources are used. A citizenship theory of social justice, Duffy (2010; 2006) argues, requires a recognition of the differences that give rise to personalised funding needs, and therefore entitlements, that are necessary to ensure disabled persons the capability of living and participating in the community.

A broader critique of the welfare state, its policies, the services delivery structure and their impact on disabled persons by Power, Lord and deFranco (2014) focused on the personalisation of support as the key to creating a way out for the high proportion of disabled persons who are “locked into poverty, dependency, social isolation or destructive patterns of behaviour to which the system seems unable to respond” (Power et al., 2014, p. 6). Power et al. (2014) argue that one of the main factors contributing to the failure of the welfare state to enable active citizenship for disabled persons whose welfare depends on state benefits and services was the disjointed way in which benefits and services developed; rather than supporting disabled persons in living an active community life, the provisions of the welfare state became further obstacles to community life, namely because they did not give disabled persons any say in deciding how they wanted to live their lives. In this respect, Power et al. (2014) argue that the limited focus on employment reduced the notion of participation to disabled persons’ ability to fit, or otherwise, in an employment market that in many ways does not suit them. This analysis is an interesting one and differs from Oliver’s (1990) and Barnes’ (1992) emphasis on the exclusion of disabled persons from the labour market as being a fundamental source for all other exclusions. This disagreement possibly reflects the different perspective from which Oliver (1990) and Barnes (1992) approach the issue. Reflecting their present conditions, they considered disabled persons’ access to the labour market as reflecting society’s fundamental recognition of the full worth of disabled persons; in contrast, Power et al. (2014) take a more pragmatic approach in considering participation in the labour market as just one avenue for participation.

Key to enabling disabled persons capability to live actively in their communities is the role of state benefits and services working in partnership with disabled persons, securing their choice and freedom to live their life the way they want it. Beyond

mere subsistence and survival, the role of personalised benefits and supports is conceptualised as enabling disabled persons “to realise their citizenship” (Power et al., 2014, p. 8). Citizenship, in this context, is not solely a membership or an entitlement or an identity; it is primarily the freedom and capability to belong to society. Without disabled persons having control over the support services they need, the necessary changes will not happen and disabled persons who depend on state benefits and services will remain locked in a system that at best supports them at subsistence level. At a policy level, fundamental change necessary is one that transforms “conventional forms of welfare and care – which, persons with disabilities have argued, enforce dependency, isolation and powerlessness – towards a model which seeks to enable people to have a meaningful life in the community” (Power et al., p. 490). Without the active participation of disabled persons, such changes cannot materialise.

The discussion of citizenship in the context of disabled persons can gain a lot from the feminist critique of the concept. Lister (2003, p. 1) refers to citizenship as an “ostensibly gender-neutral concept [that] is, in fact, deeply gendered” because so much of the literature on citizenship overlooks the gender perspective. No doubt, a similar argument can be made as far as disabled persons are concerned: citizenship is an ostensibly disability-neutral concept that is in fact deeply inadequate in its ability to encompass a disabled person’s citizenship relationship with the state. The non-disabled citizen does not need to fight for or justify their existence from before the cradle to the grave. Two developments support this assertion, namely the proliferation of disability rights legislation to compensate for the inability of mainstream statutory provision to secure the full rights and responsibilities of citizenship for disabled persons (Gordon and Tavera-Salyutov, 2018; Petman, 2010), and the development of the concept of ‘active citizenship’ to assert the point that disabled persons are not well served by ‘citizenship’ alone (Hvinden et al., 2017).

3.5.1 The universalism and particularism of citizenship

The proliferation of disability rights legislation lends credence to Waldschmidt and Sépulchre’s (2019) assertion that the relevance of citizenship for disability is limited

due to its incongruity; its relevance is best seen as complementing a human rights approach. The authors' concern primarily focuses on the issue that was addressed by Nussbaum (2006), namely the exclusionary effects of "narrow conceptions of a social contract between productive, rational and responsible citizens" (Waldschmidt and S  pulchre, 2019, p. 439). In other words, the universalism of citizenship excludes important factors critical for disabled persons.

Lister (2003), like Nussbaum (2006), addresses the issue of dependence and the risk of "equating dependence with weakness and incapacity for citizenship" (Lister, 2003, p. 109), not only for disabled persons but for all human beings, especially women, considering the various fluctuations between dependence and independence throughout one's life course. However, it is Lister's (2003) analysis of economic dependence that is particularly applicable for disabled persons. Without access to some level of economic independence, disabled persons do not have the capability to choose or to change their situation. Poverty, for Lister (2003, p. 141), "is corrosive of citizenship both as a status and a practice, undermining rights and the ability to fulfil the potential of citizenship". Combatting poverty and promoting economic independence is key to women's citizenship, and similarly for disabled persons' citizenship. Lister (2003) also focuses on the critical importance of valuing care in her conceptualisation of citizenship as "the expression of agency" (2003, p. 199) stressing the importance for policies that "create the conditions for a '*gender inclusive*' citizenship through which citizen-the earner/carer and carer/earner can flourish" (2003, p. 200).

Lister's (2003; 1996) view on citizenship is one of differentiated universalism; in order for citizenship to embody the full experience of women and in order to serve women's advancement, it needs to encompass the particular experiences of women. A similar argument can be drawn for disabled persons. The emphasis on economic independence and the emphasis on care are relevant for any discussion of citizenship and disability. Economic sufficiency falls within the universalism of citizenship; however, it would be a fictitious universalism if the particularity of disabled persons' economic reality is not recognised.

Lister's (2003) emphasis on agency as an expression of citizenship zooms into a key issue for disabled persons and citizenship: if citizenship implies the capacity to

participate fully in society, how does one square the capacity with any limitation derived from living with impairment? Devlin and Pothier (2006, p. 2) address this issue head on, criticising liberalism's assumptions of "disability as misfortune ... [that] privilege normalcy over the abnormal ... and that productivity is essential to personhood", further arguing that "[to] start from the perspective that disability is misfortune is to buy into a framework of charity and pity rather than equality and inclusion", thereby creating a "hierarchy of difference – fortune must be better than misfortune" (2006, p. 10). While liberalism has fully endorsed equality on other counts, it has not been able to reject the disability hierarchy of difference: "In a Utopian society, liberalism would not seek to abolish race or gender or sexual orientation. But it would seek to abolish disability, on the basis that human beings are not meant to "suffer" disability" (Devlin and Pothier, 2006, p. 11). Genuine equality cannot be achieved unless the differences resulting from living with impairment are fully recognised and confronted "without creating a hierarchy of difference – either between disability and non-disability or within disability" (Devlin and Pothier, 2006, p. 12), while recognising the agency of disabled persons. This critique led Devlin and Pothier to argue that disabled persons experience a disabled citizenship because of the hierarchical preference given to productivity as the basis for citizenship; an enabled citizenship, on the contrary, cannot be based on productivity and efficiency. Their emphasis on the "inevitability of difference" (Devlin and Pothier, 2006, p. 20) challenges the idea of citizenship based on sameness or assimilation. Reversing the 'dis-citizenship' to 'full citizenship' can only take place if the differences are valued through society's policy and service responses, and this reversing can happen by adopting "an anti-necessitarian understanding of disability that focuses on genuine inclusiveness, not just abstract rights" (Devlin and Pothier, 2006, p. 2). Economic wellbeing and personalised support are the basis of valuing impairment related differences when these differences condition one's material resources and support needs. A disabling citizenship is transformed into an enabling citizenship if the particularity of the differences are fully addressed to ensure the universality of citizenship.

3.5.2 Active citizenship

The recognition of a second-class citizenship, or of a citizenship that does not guarantee full rights, or a partial citizenship, was the main theme of the project “DISCIT – Making Persons with Disabilities Full Citizens”, which studied “how different types of policies (social benefits, social services and social regulation instruments) can be mutually supportive in enhancing Active Citizenship for persons with disabilities” (European Commission, 2019, para. 1). The need to articulate the ‘making’ of ‘full citizens’ and the enhancement of ‘active citizenship’ all point towards a recognition that for many disabled persons citizenship is an elusive concept. In its broadest terms, as reviewed in Chapter 1 (sec. 1.5.2), active citizenship is the underlying value of the UNCRPD and implies the principle that all persons are entitled to the capability to actively participate in society. Power et al. (2014, p. 8) conceptualised active citizenship on disabled persons’ empowerment to live in the community by “challenging the socially constructed barriers, behaviours and attitudes which continue to deny full citizenship, and providing the supports needed to enable people to realise their citizenship” thus enabling disabled persons to “live their own lives as they wish, confident that supports are of high quality, and have choice and control over the shape of that support”. This understanding of active citizenship is practically a definition of independent living or supported living. It is also rather circular in that it defines active citizenship by referring to the policies and services necessary for disabled persons to realise their citizenship. At the same time, it draws attention to the simple fact that a considerable number of disabled persons cannot live an ordinary citizen’s life without a recognition of, and provision for, their personal support needs.

In their comprehensive analysis of the active citizenship concept, Halvorsen and Hvinden (2013) make the point that many disabled persons are denied citizenship because they do not have the possibility for full and effective participation in society, including the labour market and the political process. Active citizenship is understood along a continuum; at one end of the continuum is passive citizenship moving to the other end of active citizenship. The active/passive divide has at times been narrowly understood within a duties/rights framework; however, for Halvorsen and Hvinden (2013), active citizenship is about a renewed understanding

and focus on citizen's participation and agency. Such a focus necessarily begs the question of citizen's capability to participate in all matters that concern them and in social, political and economic processes that shape their lives. Drawing on the socio-liberal, the market-liberal, and the civic-republican approaches to social citizenship, Halvorsen and Hvinden (2013) outline three basic principles guiding their understanding of active citizenship as it applies to disabled persons, namely security, autonomy and influence. These principles are particularly relevant to an understanding of how poverty affects disabled persons' capability to active citizenship. For instance, one may analyse the extent to which cash benefit systems provide security from poverty and deprivation or whether they lock beneficiaries in poverty traps. The principles of autonomy and influence may be used to gauge and shape disabled persons' support services. Thus, active citizenship also implies increased freedom of choice, more responsibilities, and the ability to influence policies and services that affect one's life. Interestingly, Halvorsen and Hvinden (2013, p. 26) turn to Sen's and Nussbaum's capabilities approach to determine the "factors that enhance or hamper the process of moving from having a formal scope for Active Citizenship to Active Citizenship as practice or expression of active human agency". Although the capabilities approach is not a theory of citizenship, it does present a fundamental perspective for evaluating policies and services, framing the fundamental question: To what extent are current policies and services contributing to disabled persons' capabilities for active citizenship?

This perspective reframes the polar opposite of active citizenship not as passive citizenship but as the lack of capability for citizenship. And at the extreme of this lack of capability is poverty and material deprivation and absence of critical support services. Disabled persons find themselves disproportionately affected by this lack of capability for citizenship through all the issues covered in the UNCRPD; the concept of active citizenship suggests that disabled persons' citizenship requires a multilevel perspective beyond a minimal list of basic entitlements that may provide security for mere subsistence but not for a full and effective belonging to society. Active citizenship, as a multidimensional concept, implies the capability to exercise one's freedom as a full and active citizen, the opposite of being deprived of the capability to be an active citizen; at one extreme there is severe deprivation, at the other there is active citizenship.

3.6 Citizenship from the perspective of disabled persons and service users

In between the two extremes discussed above, disabled persons and other service users dependent on state funded benefits and services experience their unmet needs as a “qualified citizenship” (Beresford and Croft, 1989, p. 15). Their citizenship is qualified, Beresford and Croft (1989, p. 15) argue, because they rarely have any say in determining the services they depend on; the infrastructure of the welfare state “not only does it not necessarily enhance their rights and say, but it may further reduce them”. This statement was written over three decades ago. Yet, the same critique continues to be raised in contemporary social policy; when social provision is devoid of a participatory dimension, those who depend on publicly funded benefits and services experience their entitlements as “arbitrary, patronising and controlling ... imposed, prescriptive and too often unpleasant and demeaning” (Beresford and Carr, 2018, p. 427). The alternative requires the full and active participation of service users and potential service users in articulating their needs and developing the policy and service responses to their needs. For Beresford and Croft (1998, p. 16), “it is this political process of gaining a say which ... [is] ... at the heart of citizenship”, clearly linking user-involvement with citizenship, and seeing user-involvement as a steppingstone for reversing the reality of qualified or weak citizenship.

Jenny Morris’ (2005, p. 5) scoping paper provides a disability perspective on citizenship asking the cogent question: “What does citizenship mean for disabled people?” To this question, Morris (2005) proposes three concepts that point towards the centrality of disabled persons’ ability to take full ownership of their lives, including the service provision that supports them. They are concepts that at an individual level point towards the concerns raised by Beresford and Croft (1998).

1. Self-determination, or the capability to exercise autonomy in the life choices – Achieving such capability involves both the removal of barriers to the exercise of autonomy and the provision of support necessary for a disabled person to exercise control over one’s life. Self-determination is not possible if the level of resources is insufficient. The limits imposed by impairment and disabling barriers require adequate resources to ensure self-determination for all

disabled persons, without any exceptions. Self-determination and autonomy are compromised “by a lack of entitlement to choice and control over the support many disabled people require” (Morris, 2005, p. 15).

2. Participation, or the opportunity to be part of a broader community – Disabled persons are often denied the possibility of taking up active roles in community life even though organisations of disabled persons have demonstrated disabled persons’ success in bringing about social change through their active participation in the political process, in spite of all the barriers they face. One of the major barriers to participation is poverty and a benefits system that does not provide support for participation in community life.
3. Contribution, or the recognition of the value of disabled persons’ contribution to society – Society’s perception of disabled persons as recipients of benefits and services overshadows the major contribution that disabled persons have given and continue to give to society, in spite of all the barriers experienced. Disabled persons’ contribution cannot be restricted to paid employment. Moreover, like participation, disabled persons and their organisations are often left without the support they need to contribute to society.

Morris (2005) considers self-determination, participation and contribution as the basic foundations for disabled persons’ full citizenship. Full citizenship for disabled persons is achieved when their differences do not become society’s excuse for not providing disabled persons with the financial and support resources necessary for having the capability for self-determination, participation and contribution, that is the capability for citizenship.

3.7 Conclusion

The introduction to this chapter cited the goddess Poverty in Plutus arguing that poverty serves an important function in society; poverty pushes people to work, work is necessary to create wealth, and therefore poverty distinguishes those who contribute to wealth creation from those who do not. We have seen in the above review that disabled persons commonly experience substantive and structural limitations to their capability to full citizenship, and that at the core of this limitation is the link between poverty and disability (Sépulchre, Lindqvist et al., 2018). Society

perceives and accepts poverty as an inevitability for persons living with a limiting long-term impairment because of the consequential 'inability' to contribute to economic growth, and in so doing it conditions disabled persons to second-class citizenship, characterised by dependency rather than belonging, participation and contribution. The inescapable link between disability and poverty serves the critical (mal)function of devaluing the lives of disabled persons to a point where society justifies its othering of disabled persons from its 'worthy' citizens. In a way, society's acceptance of the strong link between disability and poverty feeds "the notion that physical and intellectual impairment means a life not worth living. The hidden motivation is actually that disabled people are not deemed productive and constitute a high economic cost" (Morris, 1992, para. 7). Abberley (2002, p. 135), in his critique on the role of work in securing social membership, reflects on how "undesirable [it is] to be an impaired person in any possible society, and thus that the abolition of disablement also involves as far as possible the abolition of impairment". Such an approach devalues anyone who does not fit in the mode of productivity; and rather than focusing on the elimination of the disabling barriers, it is geared towards eliminating any possibility of persons living with impairment. For Abberley (2002, p.135), "it involves a value-judgement upon the undesirability of impaired modes of being". For disabled persons without the resources to exercise their citizenship rights, citizenship is deprived; put differently, poverty and deprivation compromise such disabled persons' capability of being part of and participating in that country of which they are citizens.

This study, as described in the next chapters, focuses on a period more than two decades after Morris (1992), and one decade after Abberley (2002), expressed the above strong assertions. The literature reviewed suggests a strong theoretical and empirical link between poverty experienced as material deprivation and living with a limiting long-term impairment. This link is at the core of disabled persons experience of citizenship and their impaired capability to participate fully in society. Yet, the poverty and deprivation experience of disabled persons does not feature as a main concern of European social policy; nor has it been focused upon in contemporary comparative poverty studies. The subsequent analysis and discussion will address this gap and throw some light on the deprivation reality of disabled persons and their households across Europe in more recent years. The

methodology used for further exploring this topic is described in the next chapter. It is a methodology designed to extrapolate the stories of deprivation buried in seven years of EU-SILC cross-sectional data, juxtaposed with the perspectives of organisations of disabled persons on the progress or otherwise registered in the 32 countries examined in this study on the implementation of the UNCRPD provisions intended to secure for disabled persons “equal citizenship after a long history of discrimination” (United Nations Enable, 2008, para. 9).

Chapter 4. Methodology

4.1 Introduction

The previous two chapters reviewed the research literature related to poverty and disability and conceptualised citizenship as the polar opposite of poverty. This review of the literature points towards a number of summary conclusions, namely:

1. Households living with a limiting long-term impairment, health problem or illness are, in general, more likely to experience lower income than other households, and when in poverty the 'poverty gap' is significant;
2. The presence of a limiting long-term condition impacts a household's quality of life irrespective of the household's level of income;
3. A focus on income alone will not capture the deprivation experienced in such households even when not deemed to be 'at-risk-of poverty';
4. Equal incomes of different households are not equivalent when one household differs from the other on the basis of the presence of a limiting long-term condition;
5. Poverty resulting from disability cannot only be considered at an individual level, bearing in mind that poverty affects the whole household. Yet, the support of the household, especially in close knit families, has the potential to mitigate these negative impacts;
6. The impact of a household's disposable income and its costs on the household's quality of life is mitigated by various other factors, not least the policy and service context within which the household lives;
7. There are numerous other factors that contribute to a household's quality of life but a predominant factor amongst these is housing and access to personal supports;
8. Material poverty is incompatible with any notion of citizenship as it implies the lack of resources necessary for anyone to have the core capabilities of and for citizenship.

At European Union (EU) level, data collected through EU-SILC² annual surveys provides a preliminary picture of the impact that activity limitation has on one's risk of poverty and social exclusion. The following salient points are highlighted:

- Individuals with activity limitation are more likely to be living in households at-risk-of poverty or social exclusion (AROPE) compared to other individuals;
- There are significant differences in the AROPE between the two populations across all countries;
- People with activity limitation depend significantly on social transfers;
- There is an overall reduction in risk of poverty for people who are in employment but more people with activity limitation in employment are at-risk-of poverty than people without activity limitation who are in employment.

This study builds on the existing knowledge, adopting an EU wide comparative approach, focusing on a household's experience of living with a limiting long-term condition, and the different dimensions of a household's experience that have a bearing on households' experience of deprivation. In particular, this study is interested in family, community, and policy elements that may explain any economic, material and social deprivation experienced by these households, or conversely, the factors that disabled persons identify as supporting the active citizenship of persons living with a limiting long-term condition and their families. The research question directing this study is the following:

'What is the impact of living with a limiting long-term impairment, health problem, or illness, on a household's experience of material deprivation across different EU countries, and what household, regional and country factors contribute to deprivation in these households?'

This chapter discusses the research strategy, design and methods developed to study this research question.

² European Union Statistics on Income and Living Conditions (EU-SILC)

4.2 Some preliminary considerations

One key concern during the planning and execution of this study was how to sustain the centrality of the experiences of disabled persons in an investigation essentially comprised of analysing survey quantitative data, with the factual danger that disabled persons' lives are condensed to numbers and more numbers. Beresford et al. (1999, pp. 4-23) distinguish between "poverty at second hand", referring to traditional poverty research, and "poverty at first hand" (1999, pp. 24-48). They argued that people with experience of poverty are crucial in defining poverty, in understanding the causes and effects of poverty, in critiquing the public discourse on poverty, and in proposing policy responses to poverty. Lister (2021, p. 45) following McGee and Brock (2001) puts forward a similar argument in her critique of a positivist approach to poverty research, espousing that "the 'hegemony of the measurable' can suppress other forms of 'poverty knowledge' and 'alternative narratives of poverty', better tapped through qualitative participatory approaches". Ridge's (2009) review on the lived experience of children's and families' poverty highlights the importance of qualitative approaches that involve participants with a poverty experience as subjects and not objects of research. In this respect, Beresford et al. (1999) outline key components of an emancipatory participatory research process, namely the role of poor people: in "shaping the research agenda" (1999, p. 35) and having a say in the research "focus and design" (1999, p. 194); in contributing their "analysis, ideas and proposals" (1999, p. 35) beyond a mere account of their personal experience by advancing "opportunities for the development of the perspectives and views of subjects of policy and provision themselves" (1999, p. 194); in active group discussions that "counter the individualisation of analysis" (1999, p. 35); and in the "editorial process of the research report" (1999, p. 35), involving "service users themselves as researchers" (1999, p. 194) including the "feeding back of research findings to research participants and their broader constituencies in accessible and appropriate formats" (1999, p. 194). Such an orientation implies an interpretivist epistemology and constructivist ontological research strategy.

This orientation to poverty research contrasts significantly with the use of the EU-SILC survey research to measure poverty and to describe in broad terms the

associations between poverty, material deprivation, living with impairment, and household, community and country factors that impact disabled persons' citizenship. McGee and Brock (2001, p. 22), in contrasting the objective unidimensional conceptualisation of measuring poverty with the subjective multidimensional conceptualisation of poverty, raise the point (in a footnote) on whether the two approaches "are mutually exclusive because they describe different realities, or complementary because both are needed to describe one reality". More recently, Lister (2015, p. 139) while making the argument "to move beyond statistics, if we are to understand the *experience* of poverty", still acknowledges the importance of statistics for assessing comparative cross-national trends and to illustrate "how some groups (and also geographical areas) are affected more than others" (2015, p. 139), highlighting disability as one such group. Still, Lister (2015) strongly argues for the active involvement and voice of people living in poverty in the fight against poverty, stressing the role of social science research in extricating the people from the statistics that shroud their stories of poverty "through the development of counter-narratives that portray them as fellow citizens with agency" (2015, p. 159).

The methodology developed to answer the research question of this study addresses the issue on whether it is possible to understand the experience of poverty and disability by bringing together the analysis of macro data with disabled persons' own experiences on the reality depicted in the data. This study takes the position that the two approaches discussed above can be integrated through a research methodology that facilitates the contribution of disabled persons to reflect on and interpret the empirical reality of living with a limiting long-term condition in contemporary Europe. As mentioned in the preface to this study, the original intention was to engage with disabled persons in interpreting and discussing the findings resulting from the analyses of the EU-SILC survey data. The circumstances that developed at the later part of the research journey did not permit the direct involvement of disabled persons as originally intended. This development impelled the search for alternatives, looking for depositories of disabled persons' considerations on poverty and living with a limiting long-term condition. As shall be explained later on in this chapter, since 2011 when the UNCRPD became legally binding on the EU and its member states, disabled persons have, through their

organisations, put forward their experiences, concerns and recommendations on their respective country's compliance with the convention. These publicly available reports span the same period covered by the EU-SILC data analysed in this study. They represent, effectively, the disabled persons collective analyses of the same reality depicted in the quantitative data. Their analyses in the last part of the study answers McGee and Brock's (2001) point by considering the objective unidimensional conceptualisation of measuring poverty as complementary to the subjective multidimensional conceptualisation of poverty because both perspectives illustrate the reality of living in poverty or material deprivation and both perspectives enrich each other.

This methodology chapter presents and explains the research strategy, design, and methods employed to bring together the reality of disability poverty revealed by quantitative measurement and indicators in a European comparative perspective with the experience of poverty as reflected upon and construed by disabled persons themselves. The approach adopted is a mixed-methods research strategy in which the findings from the analysis of the quantitative data are discussed and interpreted together with the perspectives of disabled persons organisations (DPOs), an approach that enables an emic reflection on the etic consideration. The epistemological orientation is influenced by Bhaskar's (1998, 2015) concept of critical realism, an orientation that allows for the gap between structure and agency, and between objectivism and subjectivism, to be bridged in a dynamic and open interaction. Moreover, Bhaskar's elucidation on three levels of reality, the empirical experienced events, the reality that exists whether or not it is experienced, and the causal mechanisms between both, provide a philosophical underpinning for the methodology of this study, summarised in Bhaskar's (1998, p. xii) axiom that "being contains, but is irreducible to, knowledge, experience or any other human attribute ... the domain of the real is distinct from and greater than the domain of the empirical" having argued that the mechanisms identified by science as a social endeavour "operate prior to and independently of their discovery".

Following that general introduction, the explanation below of the research methodology follows the sequence of the research process employed.

4.3 Development of the research agenda and its philosophical orientation

This research project was generally guided by emancipatory disability research principles and grounded in a human rights framework. In this respect, Article 28 of the United Nations Convention on the Rights of Persons with Disabilities (Adequate standard of living and social protection – Appendix A) provided the overarching value framework influencing this study. Guidance and specialist input from disabled persons in the planning of this study was secured through an informal small group of disabled advocates and activists colleagues who took a keen interest in the study and provided me with support and an outsider's outlook through the research journey. At the initial stages of the project, the disabled persons consulted highlighted the absence at an EU level of a quantitative grounding in disability poverty research and the value of statistics to illustrate disabled persons' economic reality as a basis for influencing public policy. Their perspective could be summarised as follows: *We know the actuality of our everyday experience. But we need the data to be able to show it at policy level.* This perspective contributed to the decision to tap into existing EU data to extrapolate from the data the poverty and deprivation disability veracity. At the same time, a quantitative research strategy could not adequately investigate the lived experience of the economic reality of living with impairment. The combination of the two approaches presented the challenge of having two distinct research elements not seemingly congruent with each other. Rather than considering the quantitative and qualitative components as separate, the endeavour was to design a mixed-methods research strategy that integrates the findings from two sources of data which reflect the same actuality (Clark et al., 2021), using the input from the DPOs to enhance the picture derived from the quantitative analyses.

At a theoretical level, mixed-methods research is challenged on the premise of epistemological and ontological irreconcilabilities (Clark et al., 2021). There is no scope here in ensuing a detailed discussion on the incompatibility thesis which postulates that the positivist epistemological paradigm underlying quantitative research is irreconcilable with the interpretivist paradigm informing qualitative research, and that the objectivist worldview of quantitative research contradicts the constructionist reality in qualitative research. However, a brief overview of the

philosophical underpinnings of the mixed-methods strategy employed in this study clarifies the rationale of the methodological choices assumed.

Vogt, Gardner, and Haefelle (2012) consider the epistemological quantitative-qualitative debate as unhelpful and mistaken, arguing that the adjectives quantitative and qualitative refer to words, numbers and other symbols used to develop knowledge rather than the nature of the knowledge itself. They further argue that the empirical, rational or relativist foundations of knowledge are not determined by the nature of the words, numbers and other symbols in research. This pragmatist approach guides itself from a 'whatever works to develop usable knowledge' standard. Biesta (2010) had made a similar argument against the use of the words 'quantitative' and 'qualitative' to describe anything more than the nature of the data. He further argues against the notion of research paradigms that are all-inclusive and exclusive, a one package that has to be accepted in its entirety. Biesta (2010) analyses the quantitative-qualitative debate at seven levels: data, methods, design, epistemology, ontology, purpose of research, and practical roles of research. The only levels where philosophical problems arise are at the ontology and epistemology levels. While a social ontology focuses on the meaning of reality under inquiry, a mechanistic ontology explains the factors contributing to that reality; the two approaches understand reality from a different perspective, potentially complementing rather than contradicting each other. In order to address the objectivist and subjectivist epistemological distinction, Biesta (2010) uses John Dewey's notion of experience as a transaction of human beings with their environment, which experience has the potential of transforming both the experience and the person experiencing. The actions and consequences of the experience forms the basis of knowledge, implying that the objective and subjective reality are both equally necessary for the transaction that gives rise to knowledge possibilities rather than knowledge certainties.

Mertens (2012) refers to Biesta's (2010) analysis as the pragmatic paradigm of mixed methods research, as distinguished from the transformative paradigm and the dialectical pluralism paradigm. While the transformative paradigm employs the use of mixed-methods research on the practical assumption that such research is more capable of bringing about social justice and human rights, a dialectical

pluralism paradigm sees mixed-methods research as having the synthesis potential of the quantitative qualitative dialectic. Maintaining the importance of the philosophical assumptions to guide and direct inquiry decisions, Greene and Hall (2010, p. 123) argue that assumptions from different philosophical traditions can significantly inform the same study when they are “respectfully and dialectically engaged in dialogue toward enhanced, reframed, or new understandings”. This dialectical engagement is described by Greene and Hall (2010, p. 124) as engaging “more than one paradigmatic tradition and mental model, along with more than one methodology and type of method, into the same inquiry space and engages them in respectful dialogue one with the other throughout the inquiry”. The objective is not to seek convergence but rather to use the different perspectives in a dialectic engagement to synthesize new insights. The remarkable complexities of human phenomena are better understood when “multiple ways of seeing and hearing, multiple ways of making sense of the social world, and multiple standpoints on what is important” (Greene, 2008, p. 20) are valued and employed. Green and Hall (2010) further argue that a dialectic stance is different to triangulation of methods where the objective is convergence of results; rather, divergent and seemingly contradictory results on the same social phenomenon are welcomed inquiry perplexities that can lead to new insights and knowledge. These multiple ways of seeing also allow for better engagement with diversity in situations that necessarily require different inquiry methods. The synthesis is not final but always a tentative approach to new knowledge.

The dialectical pluralism paradigm converges with a critical realism stance in social research that developed an alternative philosophical basis for social science research to the positivist/interpretivist empiricist/constructionist dichotomies. Bhaskar and Danermark (2006) undertook a detailed critique of the strengths and limitations of the ‘naïve realist/empiricist’, the ‘social constructionism’, the ‘neo-Katianism’, and the ‘hermeneutics’ approaches to disability research, highlighting how none of the approaches is able to capture the complexity of the disability experienced by people living with an impairment. They argued that each perspective contributes to understanding disability, and therefore each perspective is essential when undertaking disability research, embracing an ontological integrative pluralism experienced at several individual and social levels, referred to as

“laminated explanations” (Bhaskar and Danermark, 2006, p. 289). Bhaskar and Danermark (2006) summarised the advantages of critical realism as follows: “ontologically, double inclusiveness; epistemologically, heuristic suggestiveness and non-partiality; and methodologically, its capacity to take us from non-reductionism through essential complexity to necessary lamination” (2006, p. 280). Maxwell and Mittapalli (2010), using the concept of critical realism in a broader sense than Bhaskar (1998; 2015), explain critical realism by way of approaching social reality as something real, existing independent of the human experience, but which can only be known through the human experience, and never as it exists outside the human experience, and always being subject to further understanding through an interpretation that enhances the experience and what is being experienced. In this respect, critical realism is an exercise in the dialogical approach to knowledge but recognising the emerging synthesis as always open and incomplete (unlike Hegel’s notion of the totality of synthesis resulting from the dialectical process). Critical realism, therefore, allows mixed-methods research to avoid a “philosophical oxymoron, or at least a problematic union” (Maxwell and Mittapalli, 2010, p. 146) implied in combining qualitative constructivism and quantitative positivist empiricism in one study as two separate components. Settling for a pragmatic resolution which bypasses the philosophical assumptions in different research strategies is “unrealistic” and “counterproductive” because these assumptions “function not simply as constraints on methods but as lenses for viewing the world, revealing phenomena and generating insights that would be difficult to obtain with other lenses” (Maxwell and Mittapalli, pp. 146-147). The authors further argue that the critical realist stance allows for what Greene and Hall (2010, p. 147) described as the dialectic stance of mixed methods research which engages in a creative dialogue, studying social phenomena from different perspectives, without any perspective losing its identity, allowing for a “meaningful engagement with difference and a dialogue across different paradigm boundaries”.

The preceding paragraphs referred to the dialogical approach to knowledge and to the dialogical process particular to this study, which brings together two fundamentally different perspectives on deprivation concomitant with households supporting disabled persons. The dialogical approach to knowledge goes beyond the notion of knowledge development through dialogue (Nascimento Sauto, 2015).

Rather, it is a “dialectical approach to triangulation, which involves seeking different versions of the same phenomenon and placing disparate or contradictory findings in dialogue with one another” (Taylor and Raykov, p. 129). In this study, the dialogical process involves the qualitative data from the DPOs’ reports “used to speak back to the concepts and interpretations of quantitative methods” (Taylor and Raykov, p. 129). Manson (2006, p. 9) makes the point that such approaches help to enhance our ability to understand complex social worlds, arguing for “dialogic explanations that allow the distinctiveness of different methods and approaches to be held in creative tension”. Manson (2006, p. 20) observes that a mixed methods research strategy commonly assumes that each method and the different data it generates provide different angles of the same picture or different components of the picture, and that “these parts or views can be consolidated, or integrated, to produce a fuller or more valid or robust picture”. However, such an integrative approach underplays the distinctive nature of the different approaches and their respective strengths. In this context, Manson (2006) argues for dialogic conversations between the different forms of data that capture diverse dimensions of the reality being studied, and that dialogic explanations advantageously incorporate both breadth and depth resulting from different data sources. A stronger case for dialogical knowledge is made by Nascimento Sauto (2015, p. 62), arguing that the dialogical process “is critical to help harnessing the potential of differences for knowledge creation” treating differences “as a resource, rather than a problem or a barrier”. Interestingly, Nascimento Sauto (2015) contrasts the dialogical process with monological approaches that limit the creation of knowledge to any significant degree; while differences, tensions and colliding interpretations are ignored or considered an obstacle in monological approaches, dialogical approaches puts them into dialogue to harness their generative power.

This brief discussion on the dialogical approach to knowledge would be incomplete if it is not contextualised within the critical realist philosophy guiding this study, namely Bhaskar’s (2016) ‘holy trinity’ of critical realism. Adopting an ontological realism approach means that this study recognises the deprivation reality being studied as intransitive, a deprivation reality that exists independent of the mode through which it is being studied. However, it also recognises that human knowledge is transitive, contextual and limited, thereby assuming an

epistemological relativism approach. In this study, the epistemic relativism differs between the EU-SILC survey data on the one hand and the DPOs' reports on the other, both giving a finite, contextual and imperfect knowledge of deprivation in households supporting disabled persons. The dialogic process involves the rational evaluation and juxtaposition of two diverse perspectives on the deprivation reality being studied, or the judgmental rationality process key to the critical realism approach to knowledge.

The above discussion points towards the dialectical pluralism and critical realism stances to research as providing a suitable and helpful philosophical basis for mixed methods research in general and this study in particular. A critical realist approach engages the dialectical pluralism "dialogue across different paradigm boundaries" (Maxwell and Mittapalli, 2010, p. 147) that will enable this study to describe empirically the deprivation reality of living with a limiting long-term impairment, health problem or illness and the factors that contribute to material deprivation; the perspectives of the DPOs will be used to engage in a dialogical process with the results of the quantitative analysis, offering their diverse insights, experiences, and reflections; and using the tension between the etic and emic perspectives to synthesise new understandings, recognising that such understandings are always provisional and contextual, embracing diverse voices, and continuously open to new understandings.

4.4 A mixed-methods research strategy

Mixed-methods research is commonly classified in terms of priority and sequence (Clark et al., 2021), determining whether the quantitative or qualitative method is the main data-gathering means employed or whether they are given equal weighting, and whether the two methods are applied in sequence or concurrently. In this study, the quantitative analysis of 2013-2019 EU-SILC data is followed by the qualitative analysis of DPOs' reports depicting disabled persons' experiences and analysis of their country's deprivation reality, the same reality studied through the quantitative analysis, the focus at both stages of the study being the experience of poverty and deprivation of households comprising persons living with a limiting long-term condition. Using Clark et al.'s (2021) classification, one may argue that the

quantitative precedes the qualitative and that both components of the study have equal weight. However, Creswell et al.'s (2003) notion of an 'embedded design' better describes the research strategy and design employed given the use of the qualitative findings to enhance, explain and elaborate on the quantitative findings. The 'embedded design' reflects the dialectical pluralism stance and facilitates the emergence of a more complete picture. This design allows for the mixed-methods research strategy to embrace a dialogical process that does not converge to a single synthesis but remains open and evolving.

4.5 The quantitative analysis

4.5.1 Introduction

This section undertakes an overview of the EU-SILC and its poverty and deprivation component, focusing specifically on the potential use of EU-SILC data for comparative research on poverty and disability. Clarifying what it is that the EU-SILC can and cannot say about poverty and disability will justify its use in this study while highlighting its limitations and the need for other methods to elaborate the answers to the research question and ground the findings from the EU-SILC in the experiences of disabled persons.

4.5.2 The rationale for the EU-SILC

The EU-SILC provides the EU member states (and other participating European countries) with a reference source for comparative statistics on income distribution, poverty, social exclusion, social cohesion and living conditions. The data is collected annually through a standardised instrument based on harmonised methodologies throughout the participating countries. The 2013-2019 timeframe was chosen for this study because, as explained in Section 4.4.7 below, the EU-SILC has since 2013 collected consistent deprivation measures that allow for a comparative study of deprivation over a sufficiently long enough period to understand the trends that reply to the research question. Other considerations informing the choice of this timeframe are explained further on.

Between 2013 to 2018, 32 countries participated, comprising all 28 EU countries and also Iceland, Norway, Serbia and Switzerland; from 2019, Iceland withdrew from the EU-SILC process while the UK data for 2019 had not been made public at the time of the study. The EU-SILC instrument provides two types of data: cross-sectional annual data and longitudinal data over a four-year period. This combination is achieved through the carryover of 75% of the annual sample to the following year, thereby allowing for the measurement of individual-level changes observed annually over a period of four-years. The longitudinal data is particularly useful for studying the incidence and dynamics of persistent poverty and social exclusion, also enabling a focus on particular subgroups in the populations being studied (Eurostat, 2013; 2014; 2016; 2017a; 2017b; 2019a; 2020). Although the cross-sectional data is limited to the year it pertains to, the recurring use of the same measures year after year provides valuable information on the trends in poverty and deprivation, along with other factors.

In theory, the longitudinal data allows for the studying of subgroups of the population whose income is likely to fall below the poverty threshold for more than a year and whose situation is unlikely to change significantly over brief time periods. In practice, the ability to study a particular subgroup may not be so straightforward for four main reasons:

- The numbers of a particular subgroup may be too small, and may get smaller with attrition rates over a four-year period;
- If the numbers of a particular subgroup are small, the number of variables provided by the respective national statistical authorities may be limited to ensure that data remains anonymised;
- The structure of the EU-SILC data does not permit the linking of the cross-sectional data to the longitudinal data or vice versa;
- The longitudinal data uses a rotating short-term panel that gives a maximum of three transitions, which is not adequate to examine in detail the trajectories of poverty related to living with a long-term limiting condition.

These four points are highlighted as they condition some of the methodological choices explained further on in this chapter, namely the decision to use the cross-sectional data and not the longitudinal data for the period 2013-2019.

4.5.3 Some key EU-SILC operational definitions

The following brief discussion on key EU-SILC operation definitions relevant to this study is based on the detailed annual methodological guidelines for the seven years 2013-2019 (Eurostat, 2013; 2014; 2016; 2017a; 2017b; 2019a; 2020) and the glossary of key EU-SILC terms (Eurostat 2019b).

4.5.3.1 Measuring poverty, persistent poverty and material deprivation

Poverty in the EU-SILC is measured on the basis of a household's equivalised disposable income (HEDI) and households whose HEDI falls below 60% of the country median of all household equivalised disposable income (MHEDI) are considered to be at-risk-of-poverty. Households whose HEDI falls below the 60% threshold three times over a four-year period are considered to be at persistent-risk-of-poverty. The EU-SILC also provides a measure of material deprivation based on a household's ability to afford to pay or otherwise for a set of standard goods or services, and as from 2017 an extended measure of material and social deprivation including also personal deprivation items (explained in more detail further on).

Theoretically, a household can be below the at-risk-of-poverty threshold and still not experience material deprivation, such as those households that in times of income poverty sustain a relatively high level of consumption financed from savings, family support, or other resources. The inverse is also true: a household may have an income that does not place it below the at-risk-of-poverty threshold but still experience material deprivation due to consumption patterns that are not reflected in the household's income, for instance when a household experiences significant extra costs due to impairment-related costs or housing costs. The point has been made that the income poverty measure and the deprivation measure do not identify the same type of poverty and that these measures are conceptually distinct (see for instance Hick, 2015). Notten and Guio (2018, p. 87) consider income and material deprivation as complementary, reflecting "related but different concepts", and consequently their indicators both agree and disagree in the material well-being they measure. Hick (2015) makes the important point that the incongruity in the measures of poverty based on low income and deprivation measures of material poverty is not only problematic in identifying households as being poor. The two measures of material poverty also provide different perspectives in identifying

“groups with elevated risks of material poverty and trends in material poverty over time” (Hick, 2015, p. 171). Which of the two measures to use therefore depends on the task at hand. Pointing out that no conclusive solution can be argued as to which of the two measures is more valid for poverty research, Hick (2015, p. 170) suggests that “deprivation indicators are relatively successful in identifying vulnerable individuals and households”.

4.5.3.2 Poverty gap

A poverty gap measure provides an indication of the depth of poverty, rather than its prevalence, relative to the at-risk-of-poverty threshold. Theoretically, a measure of the poverty gap gives an indication of the extent of income poverty experienced by a household, in other words how far away the income of a household is from the 60% of median equivalised income. This measure can reveal the poverty gap of particular groups, for instance households comprising a disabled person at-risk-of-poverty, comparing the extent of their poverty to other groups. The relative median at-risk-of-poverty gap measures the difference between the HEDI of those below the poverty threshold and the poverty threshold, expressed as a percentage of the poverty threshold.

4.5.3.3 Severe housing deprivation

A person is considered to be experiencing severe housing deprivation if living in an overcrowded dwelling which is also too dark, or has a leaking roof, or does not have a bath/shower, or does not have an indoor toilet. This study did not use the EU-SILC composite measure for severe housing deprivation. Overcrowded housing was examined as a possible explanatory variable of deprivation, while the other measures of housing deprivation were included in the outcome material deprivation variable, as explained below in Section 4.4.7.

4.5.3.4 Work intensity

Work intensity is a household measure of the total number of hours the adult members of a household work compared to their working potential. This measure excludes children, students aged 18-24, and adults aged 60 or more (in the Europe 2020 targets) and 65 or more (in the Europe 2030 targets). When the work intensity of a household is equal or less than 20% of their total work potential, the members of the household are considered to be living in a household with very low work

intensity. In the Europe 2030 targets, the age bracket 60-64 excludes retired pensioners or inactive persons living in households whose main income is derived from pensions.

4.5.3.5 *The EU-SILC measures of social exclusion*

Persons who live in a household whose HEDI falls below the at-risk-of-poverty (AROP) threshold, or who live in a household experiencing severe material and social deprivation (SMSD), or who live in a household with very low work intensity (LWI), are considered to be at-risk-of poverty or social exclusion. As previously discussed (sec. 2.4.1, pp. 74-75), this composite measure counts persons who are afflicted by any one of the three phenomena; it considers the three occurrences as indicators of poverty or social exclusion exposure. Given that persons are counted only once (irrespective of the number of any of the three circumstances they experience), the at-risk-of poverty or social exclusion (AROPE) measure effectively gives a cumulative value of the number of persons who are either AROP, or experiencing SMD, or experiencing LWI. At the same time, this measure obscures the contribution of each of its components; variations in the AROPE rate (or lack of variation), does not indicate which of its components will be contributing to its variation (or remaining the same) over a period of time. For these reasons, the AROPE composite measure is not used in this study.

4.5.4 *The EU-SILC and measure of ‘activity limitation’*

While the EU-SILC collects data on the general health of all household members and on whether anyone in the household suffers from chronic illness or conditions, it does not include any standardised measures of impairment or disability. It does, however, adopt a proxy for the impact of impairment or chronic illness by collecting data on any ‘activity limitation’ of different adult (16 years or older) members of the household. The related measures that are of interest to the study are hereby described.

1. Perceived general health: Participants (members of a household) are asked to rate their general health. This purely subjective measure is not intended to measure any expert opinion on one’s health; nor is it intended to identify any

temporary ill health. It is focused solely on how participants perceive their personal health in general.

2. Chronic (long-standing) illness or condition: Participants are asked whether they identify themselves as having a long-standing health related condition, irrespective of the impact such a condition has on them. The limitations of this measure arise from the fact that it is not sensitive to severity of condition and includes chronic problems that participants might not consider to be very serious.
3. Limitation in activities because of health problems: This Global Activity Limitation Indicator (GALI) is an indicator for disability intended to identify participants with long-term limitations because of any condition, discussed in detail below.

The EU-SILC measure on 'activity limitation' is not intended to identify the population of persons with impairment according to a classification of their impairment. It is not, for instance, similar to the World Health Organization International 'Classification of Functioning, Disability and Health', which classifies people according to their type and degree of disability. The EU-SILC measures the subjective degree of limitation a person would have experienced in carrying out normal routine daily activities, for a minimum of the six months preceding the interview. The stated purpose of the measure is to identify situations of long-standing limitations. Long-standing limitations may be due to health status or chronic illness or other conditions, and have serious consequences on one's life, for instance in an individual's level of dependency. The focus is not on the cause of the limitation but on the limitation and its lasting nature: "The variable measures the respondent's self-assessment of whether he/she is hampered in 'activities people usually do', by any on-going physical or mental health problem, illness or disability." (Eurostat, 2020, p. 271; the same definition was used in all the 2013-2019 EU-SILC editions). The response categories differentiate three levels of severity with the 'strongly limited' activity limitation covering situations in which a respondent is not able to perform or accomplish an activity considered normal for one's age and circumstances. The limitations covered in this measure are those resulting from a health condition or impairment and not limitations arising because of one's economic situation.

This measure assumes the “activities people usually do” to reflect the participants’ particular cultural and social contexts as the generally accepted population standard and with which a respondent is asked to benchmark the self-perceived limitations (Eurostat, 2020, pp. 271-272).

This measure has a number of limitations:

1. The recommended wording for the ‘activity limitation’ question is as follows: “For at least the past six months, to what extent have you been limited because of a health problem in activities people usually do?” with the three main reply categories being ‘severely limited’, ‘limited but not severely’, and ‘not limited at all’. Although the stated intention is to cover all limitations arising from health and impairment, the wording recommended is restricted to health. Unless the interviewer explains what the intention of the measure is, the respondent may not identify impairment as a health problem. For instance, one might be severely limited in mobility but otherwise healthy, thus not identifying one’s limitation as resulting from a health problem;
2. The response categories ‘severely limited’, ‘limited but not severely’, and ‘not limited at all’ do not necessarily only reflect the limitations experienced by the respondent as a direct consequence of the impairment but may also reflect the limitations that the respondent experiences as a result of social barriers, including structural barriers, attitudinal barriers and barriers due to lack of support services. Choi and Calero (2013, p. 858) describe this approach as one that “mixes classical biological and medical elements (disability as an individual deficit) with the social construction of the category”. For instance, a respondent with a mobility limitation is more likely to identify one’s condition as ‘severely limited’ if the public transport is not fully accessible. Yet, it may be argued, that the limitations experienced are a function of social barriers and therefore this EU-SILC measure incorporates this important dimension. At the same time, the subjectivity of self-perceived limitations increases variability when using this measure for comparative research;
3. The six-month time period may condition the respondent to ignore any long-term limitations that would have been present for a long while and limit one’s focus to the six months prior to the interview. Persons living with impairment

incorporate the limitations imposed by the impairment in their daily routine and may fail to identify with the language of this measure;

4. The 'activity limitation' measure covers all members of household aged 16 and over. Consequently, there is no measure that covers activity limitation as a proxy for impairment in children younger than 16 years. The 2017 EU-SILC special module include a similar measure for children; therefore, the 2017 measure covering children cannot be used for comparative purposes over the 2013-2019 years.

Considering these limitations, it is clear that the EU-SILC subjective definition of 'activity limitation' gives rise to the possibility that respondents in comparable situations reply differently as a result of their particular context.

The above notwithstanding, there is significant research value of having a measure of activity limitation that is used across all countries participating in the EU-SILC, and that has been used consistently year after year. Also, the assumption is that whatever the social and cultural contexts effects are on the self-perceived limitations, these effects would not change significantly over time and across persons within a particular geographical area, and can be factored for when looking at within country trends and between country trends.

One other point considered in planning this study was whether to use the narrow or broad definition of 'activity limitation'. From a practical point of view, consideration was taken of the percentage of households with respondents who identified themselves as being 'severely limited' in activities considered normal for their circumstances and whether this subgroup allowed for meaningful analysis. Taking into consideration all 32 participating countries in the EU-SILC (30 in 2019), the average percentage of households including a person with 'severe' activity limitation fluctuated between 12.6% in 2019 to 13.6% in 2013 (of the unweighted samples); however, this percentage varied significantly across countries with the lowest percentage registered in Sweden (3.3% in 2015 and 2016) and the highest percentage being that of Slovakia (24.1% in 2017 and 2018). Given the large samples used in the EU-SILC, a low of 3.3% was still considered suitable for comparative analysis between the two subgroups of households of interest, and therefore the restricted category of 'severely limited' (in activity) was used. This

decision focuses the analysis on those households with an adult member who identifies as being severely limited in doing day-to-day normal activities, suggestive of a high level of limitation resulting from an impairment, a health problem or an illness.

On the basis of this variable, two categories of households were delineated; households with an adult member who identified as being 'severely limited' in activity (SAL households) and households without an adult member who identified as being 'severely limited' in activity (nonSAL households). Appendix C (pages 412-439) gives a breakdown of all the resultant samples used in this study.

The significant variation in percentage of SAL households across countries points towards limitations in comparative survey research. Tøssebro and Hvinden (2017) discuss a number of possible factors that may contribute to such variation in the absence of an objective standard to measure disability, including contextual factors such as language, cultural differences, administrative differences, arguing that "subjective self-classifications ... tend to be exposed to the fluidity of the disability notion" (Tøssebro and Hvinden, 2017, p. 68). At the same time, they concluded that "we really do not know which type of measures would be more reliable in comparative research" (2017, p. 69) cautioning that any results should be interpreted bearing in mind the limitations of measure used. The validity of the GALI as a measure of disability related situations in the adult population of fourteen European countries was studied by Berger et al. (2015). For each country studied, the indicator was significantly and substantially associated with the other measures tested; however, the GALI reflected considerable differences between countries. The researchers attributed this difference to disparities in the way the measure was implemented, variations in the wording used in the questions asked, and differences in the way functioning and limitations are perceived and understood across the countries studied. Berger et al. (2015, p. 7) concluded their analysis by arguing for the "relevance of the GALI to measure general activity limitation in the European population" and "the need for caution when comparing the levels of the GALI between one country" and the importance of focusing on "analysis of patterns and trends" when using the GALI to research disability in a European setting.

4.5.5 Strengths and Limitations with using EU-SILC to study the poverty and disability

In addition to the difficulties with the 'activity limitation' measure (discussed above), one other major limitation of the EU-SILC as an instrument to study poverty emanates from the reference population of the annual survey. The EU-SILC includes all private households but excludes persons living in institutions, in long-term care facilities, and all types of collective households (Eurostat, 2013; 2014; 2016; 2017a; 2017b; 2019a; 2020). The exclusion of these people from the target population of the survey conditions any study using the EU-SILC data by the absence of important data on subgroups potentially vulnerable to poverty and deprivation. Focusing on the measures used in the EU-SILC, in spite of the extensive coverage of topics which is a strength of these datasets for research purposes, the variables available condition the analysis possible. In relation to data comparability, Wirth and Wolf (2014) mention the factors that might compromise comparability arising from the ex-ante harmonisation of target variables, pointing out that any differences at the input stage are not visible in the standardised microdata set. Consequently, differences in sampling strategies, survey designs, modes of data collection, fieldwork implementation, reference periods, non-response and attrition rates, and use of administrative data, may limit the validity of cross-country comparative research.

This notwithstanding, the coverage of all the EU countries and additional participating European countries, and the use of a common framework to enable a harmonised output of target variables, offer a unique opportunity for comparing issues across different countries. Moreover, in the quantitative part of this study, extensive analysis is done comparing SAL and nonSAL households within each country; effectively, this nullifies any comparability limitations. Moreover, when measuring trends for different countries over the seven years 2013-2019, the assumption is that differences at input stage for each country would not vary significantly over the years.

4.5.6 What can the EU-SILC tell us about poverty and disability?

4.5.6.1 Preliminary analysis covering 2013-2019

Using the latest 2013-2019 EU-SILC data available, and taking into consideration the findings from the literature review, this study first attempted to answer the following basic questions as background to the more substantive analysis:

1. What are the trends in material deprivation for SAL and nonSAL households over the seven years of the study, and are these trends affected by the overall country deprivation trends?
2. How do material deprivation trends vary with country household equivalised median income?
3. What differences are there between SAL and nonSAL households risk of poverty and how are these households affected by material deprivation?
4. What impact do social transfers have on SAL and nonSAL households' total disposable income?

4.5.6.2 Detailed analysis of material deprivation in 2018

Answering the above questions provided the general context for a more in-depth analysis of material deprivation and the factors associated with material deprivation, using the EU-SILC data for 2018 to undertake a comparative analysis of the impact of activity limitation on household deprivation. The general research questions guiding this part of the research were the following:

1. How does the prevalence of material deprivation vary across countries for SAL and nonSAL households?
2. How does the prevalence of material deprivation vary for different subgroups of SAL and nonSAL households?
3. What is the nature of deprivation in SAL and nonSAL households, and how does it vary by country?
4. How does income and satisfaction with financial situation vary across SAL and nonSAL households?
5. How does deprivation vary with health and chronic illness?
6. How do SAL and nonSAL households vary in their level of perceived social exclusion?

These questions respond in part to Sen's (1983) focus on importance of focusing on disparities within communities and within countries in addition to inter-country and inter-community differences "because of interpersonal variations in converting commodities into capabilities ... since poverty is often associated with handicaps due to disability or age" (1983, p. 168).

4.5.6.3 Factors that contribute to material deprivation

The findings from the overview analysis of 2013-2019 and the detailed analysis for 2018 were used to identify potential predictors of material deprivation. The third part of the quantitative analysis focused on the examination of those factors that best explain deprivation in SAL and nonSAL households. Separate regression analysis for SAL and nonSAL households were carried out, first with all the aggregate data followed by regression analysis for each country. These analyses were guided by the research questions:

1. What are the factors that best explain material deprivation in SAL households?
2. What are the factors that best explain material deprivation in nonSAL households?
3. How do these factors vary across different countries?

4.5.6.4 Variation in SAL households' material deprivation across households, regions and countries

The last part of the quantitative analysis focuses on material deprivation in SAL households and examines the variation of deprivation across households, across regions and across countries, guided by the research questions:

1. How does material deprivation in SAL households vary between regions and countries?
2. What are the effects of different explanatory variables on material deprivation?
3. How much of the variation in material deprivation depends on household, region and country factors?

4.5.6.5 Use of multilevel modelling

Individuals and households coming from the same group are influenced by the socio-economic-cultural-political profile of that group and reflect such common

influence at individual or household level. Therefore, data on individuals and households are naturally clustered because of the common interests and contexts they share. Consequently, such data cannot be considered as observations of completely independent units. Snijders and Bosker (2012) and Rasbash (n.d.) show that the use of standard analytical techniques, as in standard linear regression, in the case of clustered data gives rise to underestimated standard errors and incorrect inference. There are different modelling approaches that can account for the dependency in clustered data, usually grouped under disaggregated and aggregated approaches. Aggregated methods treat such clustering as a nuisance which is accounted for by adjusting the standard error estimates. On the contrary, disaggregated methods, such as multilevel models treat the dependency of the data as having substantive and scientific importance and account for the dependency by including specific terms in the model (Steele, 2008).

Consider, for instance, a two-level structure with 28,000 households pertaining to 28 EU countries. The standard errors in a single-level model are calculated assuming that the households in the sample provide 28,000 pieces of independent information. However, given that these 28,000 households are clustered, there will be fewer than 28,000 independent observations; the effective sample size is actually smaller and depends on degree of correlation within each cluster (intra-class correlation, also referred to as intra-cluster correlation, measuring the population variance between clusters as a proportion to the total variance). If the intra-class correlation was 0.01, the number of independent observations would decrease by 91% and so the effective sample size would be significantly less than 28,000 (using formula $ESS = \frac{mk}{1 + \rho(m-1)}$ where m is the group size, k is the number of groups, ρ is the intra-class correlation) (Killip, Mahfoud and Pearce, 2004).

The estimated standard errors would therefore be substantially lower for a single-level analysis and affects country level coefficients of variables. On the contrary, in a multilevel modelling, the estimated standard errors factor in the intra-class correlation and therefore estimate the standard errors more accurately (Steele, 2008).

In a multilevel model, the dependency of the data is accounted for by including residual error terms for each higher level or classification of the structure in addition to the normal individual error term. This modelling allows the apportionment of the variation in the outcome variable at the individual level and the other levels of the hierarchy. Multilevel models also allow the inclusion of explanatory variables at all levels and also interaction effects. This inclusion also enables the measurement of the percentage variation of the outcome variable explained by each of these effects. Multilevel models allow the specification of random variation between higher level groups in both the overall level of the outcome variable (random intercept model) and in the effect of explanatory variables on the outcome variable (random slope/coefficient model) (Steele, 2008).

4.5.6.6 *Application of the Multilevel Model in this study*

The review of the literature and the latest published data from the 2021 EU-SILC data (Eurostat, 2022a) suggest a country-level effect on poverty and deprivation. Although persons with activity limitation were living in households which, on average, were worse off in all EU countries, there were significant variations across the different countries. Reinstadler and Ray (2010), on the other hand, using EU-SILC 2005-2006 data showed that regional unemployment and regional GDP had an effect on the at-risk-of poverty rates.

Such data suggests the suitability of the multilevel modelling framework for the analysis of material deprivation data from different EU countries and regions. Households live in defined geographical regions that are part of a defined country. Therefore, variation in the level of material deprivation may reflect region and country differences in addition to other factors. Households cannot be assigned randomly to different regions or different countries as a household is fully nested in one particular region which in turn is fully nested in one country.

Regional or country effects are often ignored in analysis of poverty and material deprivation, or just accounted for using adjusted standard errors which account for the interdependence in the data. Rather than accounting for this country-level and region-level effects by using adjusted standard errors, the last part of the quantitative analysis of this study attempted to model this effect through multilevel methods because of its scientific interest for EU comparative social policy. Applying

the multilevel model to a comparative study of material deprivation allows for geographical effects on deprivation to be accounted for and measured.

In this study, the outcome variable of interest is material deprivation and the data hierarchy includes household specified at level 1, the region at level 2 and country at level 3. The choice of household (and not individual) at level 1 is determined by the fact that most EU-SILC data for the outcome variable (material deprivation) is collected at household level and therefore members of the same household have the same value on this variable. Even though data for the predictors is available at individual level, the correct way of modelling the data is to model at the level of the outcome variable. Consequently, variables collected at the individual level were aggregated at the household level.

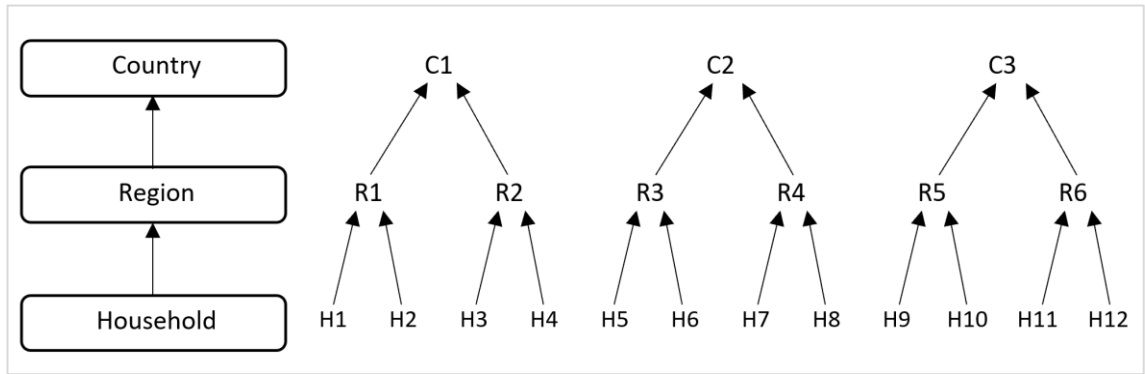


Figure 4.1: Classification diagram for the three-level model

The most generic form of the three-level multilevel model developed for the study can be represented as follows:

$$y_{ijk} = \beta_0 + \beta_1^T \mathbf{X}_{1ijk} + \beta_2^T \mathbf{X}_{2ijk} + \mathbf{u}_{1jk}^T \mathbf{X}_{2ijk} + \beta_3^T \mathbf{X}_{3ijk} + \mathbf{v}_{1k}^T \mathbf{X}_{3ijk} + u_{jk} + v_k + e_{ijk}$$

In the above equation, y is the deprivation measured at 2018 of a household I , in region j , and country k . β_0 represents the overall intercept (overall mean in deprivation) in the linear relationship between deprivation and the predictor variables included in the model, that is the deprivation of a SAL household pertaining to the reference categories of categorical variables, with a value of 0 on continuous variables, and belonging to the average region and average country (a

region with a value of 0 for the random effects u_j and a country with a value of 0 for the random effect v_k). The u_{jk} represents the intercept random effect for the region j , which is assumed to follow a normal distribution with cluster-level variance σ_u^2 and have a mean of 0. Similarly, v_k represents the intercept random effect for the country k , which is assumed to follow a normal distribution with cluster-level variance σ_v^2 and have a mean of 0. e_{ijk} represents the household-level residual. σ_e^2 is the variance in deprivation due to household differences after accounting for explanatory variables.

The vector β_1 represents the parameter coefficients for each fixed effect explanatory variable in the model, X_{1ijk} , when all other predictor variables are controlled for. These coefficients indicate the cluster-specific average change in deprivation for a unit increase in the continuous fixed effect explanatory variable (or for the dummy category compared to the reference category for dichotomous variables) when holding all other variables constant, and for a constant value of u_j and v_k . Slopes or coefficients for X_{1ijk} do not vary across regions and countries, and in this respect, they pertain to the fixed part of the model.

On the other hand, the parameter coefficients of explanatory variables X_{2ijk} and X_{3ijk} are allowed to vary across regions and countries, respectively. β_2 and β_3 represent the average region and country slope or coefficient, respectively. u_{1jk} and v_{1k} represent the region and country random effects in the slope or coefficient, assumed to follow normal distributions with variances σ_{u1}^2 and σ_{v1}^2 and means 0.

The fully developed model is explained in detail in Section 6.4. The model included measures of income and other identified potential predictors of material deprivation. Such a multilevel model specification which considers income and other fixed effects, and region and country random effects can allow for a distinction between income and other fixed effects on the one hand and the region-level and country-level effects on the other.

4.5.6.7 Outcome variable

Material deprivation is being investigated in this study. The main outcome interest is whether and how material deprivation is conditioned by activity limitation,

income and other factors in different EU countries. Considering the EU-SILC list of target primary and secondary variables, four alternatives were considered:

1. Income as the outcome variable – The review of the literature has identified the limitations of using income as an outcome variable, namely:
 - Income does not take into consideration the individual's household informal support structure;
 - Income does not factor in the non-monetary resources that households are able to access, which resources may compensate in part for low income associated with activity limitation;
 - Income does not take into consideration the extra costs of disability;
 - Income does not take into consideration the housing costs;
 - Income is not sensitive to capital assets households may have access to.
2. Material deprivation as the outcome variable – Material deprivation is conceptualised by Townsend's notion of relative deprivation, and measures the level of access to those conditions of life considered basic to enable the customary and expected participation in social life by any member of society. These conditions are developed by a 'consensual' approach which involves the factoring in of majority views. They do not factor in conditions of life that may be affected due to activity limitation, such as one's ability to take care of oneself.
3. Combining income and material deprivation (Nolan and Whelan, 2010) – This approach would enable the comparative analysis of how income and material deprivation is impacted by activity limitation throughout the EU. However, combining income and material deprivation would limit the possible analysis of the impact of activity limitation in how income translates into material deprivation.
4. A composite measure of deprivation – A composite measure of material deprivation can combine the EU-SILC variables that measure material deprivation but also include secondary variables that measure housing deprivation, healthcare affordability, personal needs affordability and leisure affordability. Such a composite measure would better reflect deprivation in its multidimensionality beyond just material deprivation. Rather than adopting the EU-SILC operational definitions for 'material deprivation' and 'severe

material deprivation', or the more recent 'material and social deprivation' and 'severe material and social deprivation', this approach would adopt a deprivation scale based on a number of items from the EU-SILC that cover deprivation.

This study adopted option 4 above, combining most of the EU-SILC variables for material deprivation, some of the variables for housing deprivation and other personal deprivation variables into a composite Modified Deprivation Index, discussed in detail in the next section. The index is classified as a 'modified deprivation index' and not a 'deprivation index' to distinguish the outcome variable used in this study from the EU material deprivation measure. Moreover, considering that the measures of the index do not include important dimensions of deprivation such as access to education, mental health, and others; it is an index that captures a broader range of deprivations resulting from lack of resources but does not cover the full range of Hick's (2014b) 'core capabilities' to qualify as a full deprivation index that would be designed to capture poverty as 'capability deprivation'. The idea of a studying material deprivation through an index is not new and Guio, Gordon and Marlier (2012) developed a broader range of material deprivation items from the EU-SILC that could be used to measure severity of deprivation for the entire population and for children.

4.5.7 The Modified Deprivation Index (MDI)

4.5.7.1 The EU-SILC measures of deprivation

In the EU-SILC up to 2016, 'material deprivation' is a composite measure of a household's inability to afford a number of items considered as necessary to lead an adequate life. As from 2017, this measure was further developed to include both household and personal items, and referred to as 'material and social deprivation' (MSD). This approach reflects Townsend's (1979) conceptualisation of relative deprivation and is a measure of both the household's situation and the situation of the individual. In the 2009 EU-SILC indicator for material deprivation, an individual is considered to be experiencing material deprivation (MD) if that individual is living in a household that cannot afford at least three of the nine basic deprivation items

and experiencing severe material deprivation (SMD) if the household cannot afford at least four of the following nine items:

- ability to face unexpected expense;
- ability to pay one week's annual holiday away from home;
- whether they have been in arrears on mortgage or rent payments, utility bills, hire purchase instalments or other loan payments;
- ability to have a meal with meat, chicken, fish or vegetarian equivalent every second day;
- ability to keep home adequately warm in winter;
- own a washing machine;
- own a colour TV;
- own a telephone, including mobile phone;
- own a car.

Using the MD and SMD measures of deprivation give three possible categories of households:

- households that are not materially deprived;
- households that are materially deprived;
- households that are severely materially deprived.

This approach limits the possibility of identifying the severity or intensity of material deprivation a household experiences on two counts: it excludes households experiencing one or two deprivation items; and it does not give any information on the deprivation severity of households experiencing more than four items of deprivation. A household with no deprivation is considered equivalent to a household with two deprivation items, and a household with four deprivation items is considered equivalent to a household with nine deprivation items.

The need for a more robust material deprivation indicator led to the decision in 2017 to replace the 'material deprivation' indicator with the 'material and social deprivation' (MSD) indicator (Guio et al., 2017). This new EU indicator is based on 13 deprivation items, seven household deprivation items and six personal deprivation items. Six of the nine household deprivations previously used were kept, adding a household's inability 'to replace worn-out furniture', while removing a

household's inability to afford a washing machine, a colour TV and a telephone as items of deprivation. The six personal deprivation items included in the new indicator are the following:

- Having access to an internet connection;
- Afford to replace worn-out clothes by some new ones;
- Afford having two pairs of properly fitting shoes (including a pair of all-weather shoes);
- Afford spending a small amount of money each week on oneself;
- Afford having regular leisure activities;
- Afford getting together with friends/family for a drink/meal at least once a month.

A person is considered as experiencing 'material and social deprivation' (MSD) when suffering an enforced lack of five out of the 13 deprivation items referred to above, and experiencing 'severe material and social deprivation' (SMSD) when suffering seven or more of the deprivation items.

Guio and Marlier (2017) discussed the new 13 item material deprivation indicator, arguing that it met the need for a more robust indicator. In their analysis, Guio and Marlier (2017) explained that while the increase in material deprivation items better depicted the deprivation of the most vulnerable, such an increase did not change the overall level and composition of the population considered as materially deprived or severely materially deprived aggregated over the EU as a whole and in most of the participating countries. For comparative purposes, Guio and Marlier (2017) preserved the MD and SMD conceptualisations of deprivation, with the same limitations for such an indicator to depict different severities of deprivation as the nine-item list currently in use. Used as a 13-item deprivation index, the deprivation count ranging from 0 to 13 can provide a measure of deprivation intensity. However, defining MD or MSD as the situation of lacking five out of the 13 deprivation items, and SMD or SMSD as the condition of lacking seven of the 13 deprivation items, gives three possible categories of households:

- households with no person who is materially and socially deprived;
- households with a person or persons who are materially and socially deprived;

- households with a person or persons who are severely materially and socially deprived.

With the new 13-item index, it is possible for a household to have persons who are classified as MSD or SMSD while other persons in the same household not experiencing MSD or SMSD during the same reference period. This situation arises because of the composition of the 13-item index having seven household deprivation items and six personal deprivation items. Studying deprivation at a household level necessitates that the personal deprivation items be attributed to the household as explained in Section 4.4.7.5 (p. 185) below.

4.5.7.2 Additional EU-SILC deprivation items used in this study

Since 2013, in addition to the deprivation variables mentioned above and which form the basis of the MSD and SMSD indicators, the EU-SILC has consistently collected data on a number of other secondary deprivation variables that are of significant interest to this research. Some of these variables are collected at personal level while others at household level. At household level, the following additional deprivation variables were considered relevant to this study:

- ability to make ends meet;
- own a computer;
- problems with dwelling (too dark, not enough light coming through windows);
- problems with too much noise from neighbourhood;
- problems with pollution, grime and other environmental problems;
- problems related to crime, violence and vandalism;
- lack of indoor shower/bathtub and flushing toilet for sole use of household.

At personal level, two additional deprivation variables were examined:

- whether there were health unmet needs for examination or treatment because of lack of affordability;
- whether there were dental unmet needs for examination or treatment because of lack of affordability.

4.5.7.3 *The final list of deprivation variables employed in the MDI*

Twenty-five deprivation variables from the EU-SILC were employed in developing the Modified Deprivation Index. These variables include the 13 variables of the 'material and social deprivation' indicator used in the EU-SILC, the three household deprivation variables that were part of the 2009 'material deprivation' indicator but are not part of the 2017 'material and social deprivation' indicator (not able to afford a washing machine, a colour TV and a telephone), and the nine additional deprivation variables listed in the previous section.

The decision to use all these 25 variables rather than limit the study to the use of the 13 deprivation items comprising the MSD indicator was based on the importance of studying SAL households' deprivation in as broad perspective as possible; within the limitations of the EU-SILC data, it is constructed to incorporate a multitude of diverse elements. The advantages, disadvantages and implications of the *sui generis* nature of this approach are discussed below in Section 4.4.7.7 (p. 190).

4.5.7.4 *Considerations in the creation of the MDI*

Terraneo (2016) discusses in some detail different approaches to composing a deprivation composite scale or index, once the selection of basic indicators has been done from what is available and based on theoretical considerations. The indicators forming a deprivation composite index are then combined to give a deprivation score. Terraneo (2016) criticises methods that assign equal weights to each deprivation indicator, and also the arbitrariness of approaches that determine who is from who is not materially deprived as defined by a threshold of indicators (for instance, the EU-SILC indicator of material [and social] deprivation and severe material [and social] deprivation, discussed above). Terraneo (2016) also criticised approaches that had limited use over space and time because they lacked theoretical justification and involved an element of arbitrariness in how indicators are combined in different dimensions of deprivation. Terraneo (2016, p. 383) then applied a second-order confirmatory factor analysis approach to develop a scale that measures deprivation in its multidimensionality, arguing that this approach contributed to "modelling on a strong theoretical basis" and was strong "in handling latent variable environments". In this approach, Terraneo (2016) associated the EU-SILC indicators with four dimensions of deprivation, namely health, economic

stress, material deprivation and housing conditions. Such an approach lends itself to the measurement of deprivation in its multidimensionality conceptualisation; however, it considers the health dimension (which includes the ‘activity limitation’ indicator) as a measure of deprivation rather than as a possible contributory factor to material deprivation. Further, the measurement of deprivation in its full multidimensionality conceptualisation is not the focus of this study.

Both the 2009 and the 2017 EU-SILC indicators for material deprivation are based on the unweighted sum of the deprivation items. Contrary to Terraneo’s (2016) position in favour of weighing deprivation indicators differently, Guio, Gordon and Marlier (2012, p. 110) and Guio et al. (2017, p. 51) argue in favour of adopting a deprivation index with equal weighting because of “its simplicity and transparency”, noting that “even if perfect error free differential weights could be developed the results from the current deprivation indicator and the weighted indicator would be essentially identical”. The point being made here is that whatever can be gained by weighting the different items of a deprivation index is likely to be lost in making the index more complex and less transparent in its use. Moreover, for comparative purposes, no one can misjudge deprivation items with equal weighting, yet as soon as differential weighting is considered the assessment on the contribution of each item to the overall material deprivation becomes a matter of subjective judgment.

In deciding whether to assign differential weighting to the deprivation items used in this study, the following points informed the final decision to calibrate the MDI as described in Section 4.4.7.6 (p. 186) below:

- This study departs from the 13-item EU-SILC material and social deprivation indicator and additional EU-SILC deprivation items are incorporated in a modified deprivation indicator;
- The critical focus of this study is the comparative examination of deprivation in households supporting disabled persons with other households, and not the measurement of material and social deprivation prevalence in the countries being studied;
- Any differential weighting to deprivation items would apply to all households, that is to both SAL and nonSAL households alike;

- While Guio, Gordon and Marlier (2012) and Guio et al. (2017) did not find any advantage in differential weighting of deprivation items, they make the point that weighting or non-weighting achieves similar results, assuming sound weighting;
- The disabled persons whose outsider's viewpoint I valued throughout the research journey were of the strong opinion that a differential weighting that reflected disabled persons' experience of deprivation would better represent their reality than an unweighted deprivation index.

The above brief discussion points towards the complexities in developing a valid and reliable instrument to measure severity of deprivation. While the construction of a comprehensive deprivation indicator based on the EU-SILC variables goes beyond the scope of this study, the availability of additional variables as from the 2013 edition of the EU-SILC over and above those used in the EU-SILC 'material and social deprivation indicator' provided an opportunity to develop an instrument that allows for comparative evaluation of modified deprivation between different subgroups of households (namely SAL and nonSAL households), in the different participating countries and across seven years, 2013-2019. The decision was taken to use all the deprivation items available to develop a 100 point Modified Deprivation Index (MDI) in which different items were calibrated to reflect their perceived importance in gauging material deprivation. A discussion of the advantages, disadvantages and limitations of the MDI is carried out in Section 4.4.7.7 below.

4.5.7.5 *Recoding of variables*

The first step in the construction of the MDI was to recode all the variables being considered for inclusion in the index into categorical dichotomous variables to give each variable a 0 or 1 value, with 0 indicating the absence of deprivation (as measured by the item) and 1 indicating the presence of deprivation (as measured by the same item). This process also involved collapsing some of the response categories in a way that the presence of deprivation reflected the more extreme categories. For instance, the item that measured a household's ability to make both ends meet (HS120) had six response categories as follows: 1 = with great difficulty, 2 = with difficulty, 3 = with some difficulty, 4 = fairly easily, 5 = easily, 6 = very easily.

This variable was recoded in a dichotomous variable with response categories 0 = yes (yes household has the ability to make both ends meet, including 3, 4, 5 and 6 of the original response categories) and 1 = no (no household has difficulty in making both ends meet, including 1 and 2 of the original response categories).

As indicated above, a number of the deprivation items are asked at personal level. Given that this study is focusing on deprivation experienced at household level, household level variables were created from these personal level variables. For instance, if an adult member of the household had unmet health or dental health needs because of lack of affordability, this would be interpreted as a household having an adult member with unmet health or dental health needs. This transformation is based on the assumption that household deprivation is somehow shared between household members. The new household variable does not imply that all household members had, in this case, unmet health and dental health needs because they could not afford them; rather the variable indicates a household in which at least one adult member experienced this deprivation.

The final process included the amalgamation of a number of variables that are closely related. For instance, the items that measures a household's arrears in rent or mortgage payment (HS011), arrears in utility bills (HS021) and arrears in hire purchase repayments (HS031), were combined into one item that measures the three types of arrears.

The above process resulted in 25 dichotomous variables as the basic items for the MDI. The full details of the recoding process are summarised in Appendix B.

4.5.7.6 Calibration of deprivation items

It has been shown quite conclusively that increase in deprivation takes place within a certain order of curtailment that in general sees households prioritise on what to give up when the household income does not meet the household needs (Guio and Pomati, 2017; Deutsch et al., 2015). In their detailed analysis using aggregated data, Guio and Pomati (2017) established the order in which households tend to give up items in order to cut back costs when financial resources are restricted. For instance, holidays and leisure were more likely to be sacrificed than keeping a healthy diet or keeping the house warm. On the basis of the hierarchy developed by Guio and

Pomati (2017), not being able to afford a computer would represent a higher level of deprivation than not affording a holiday, as such an item would be one of the last to be given up when the household means does not permit it.

Different approaches to weighting EU-SILC deprivation items have been used in developing a measure of material deprivation intensity. The simplest approach is to assign the same weight to each item (Guio, Gordon and Marlier, 2012; Guio et al., 2017); however, such an approach does not distinguish between the nature of different deprivation items. Whelan and Maître (2013) and Bárcena-Martín et al. (2014) used prevalence weights; such weighting is data-driven, giving greater weight to the less-frequently experienced deprivations. Although the assumption in such weighting is that the least frequent items of deprivation are a stronger indicator of deprivation, it results in items such as not affording a washing machine being given more weight to not being able to make both ends meet. Alternatively, weights can be set using a normative approach based on value judgements and/or theoretical considerations, or a hybrid approach that combines data-driven considerations with normative considerations (Bárcena-Martín et al., 2014).

In this study, a normative approach to assigning weights was used. The underlying assumption is that not all deprivation items represent an equal level of deprivation. Rather than giving each of the 25 items an equal weighting ($4 * 25 = 100$), the decision was taken to calibrate the weighting of some items to increase the specificity and sensitivity of the MDI in numerically describing the level of deprivation when comparing SAL and nonSAL households. The following is a brief description of the calibrations done and the reasons for the calibrations:

1. The combined item that indicates whether a household was unable, two or more times, to pay rent or mortgage or utility bills or hire purchase payments, was weighted six. This weighting considered the fact that the item combines three separate items. More importantly, arrears in rent or mortgage payments, utility bills, or hire purchase repayments all have potential significant consequences on the deprivation level of a household, with a likely cumulative effect due to accruing interests, contributing to additional barriers for disabled persons (Richards and Sang, 2019; Russell, Maître and Donnelly, 2011; Balmer et al., 2006; Grant, 2000);

2. The item that measures whether a household affords any unexpected required expense through its own resources was weighted six. This item measures financial vulnerability, an issue of major concern for disabled persons. Disabled persons and their households are more likely to experience extraordinary expenses while they are less likely to have accumulated assets (Traustadóttir and Rice, 2012; Batavia and Beaulaurier, 2001), thereby more likely to endure lack of financial security.
3. The item that measures whether a household was able to make both ends meet was weighted six. Living with an impairment implies additional costs. This measure focuses on the household's perceived ability to meet its needs, irrespective of its income. It is considered a measure of subjective financial stress. Households supporting a disabled person need more resources than other households to support an equivalent quality of life (Morris and Zaidi, 2020; Antón, Braña and Muñoz de Bustillo, 2016; Stapleton, Protik and Stone, 2008). Given the unorthodoxy in including this measure as part of the modified deprivation index (6% of the index), the final model is also tested using two modified version of the MDI, as explained in the following section;
4. Corresponding to the previous item, the variable that indicates whether any household adult member cannot afford to spend a small amount of money on themselves was also weighted six. Because of their financial vulnerability, disabled persons are more likely to give up on the day-to-day pleasures of life; frequently, available financial resources are more likely to be used either for essentials or conserved for the unexpected required expenditures (Morris and Zaidi, 2020; Ryan, 2019; Steele, 1992).
5. The item that measures whether a household could afford a healthy protein meal every second day was weighted six. Compromising on good nutrition because one cannot afford it is considered to be a strong measure of deprivation. For households with disability, additional costs related to dietary requirements may further accentuate this dimension (Schwartz, Buliung and Wilson, 2019; Hirsch and Hill, 2016; Academy of Nutrition and Dietetics, 2015; Wilkinson-Meyers et al., 2010; She and Livermore, 2007; Smith et al., 2004).
6. The combined item indicating whether a household had any adult member who could not afford health or dental needs was weighted 6. Unmet health and dental needs because of affordability issues represents strong deprivation,

especially if one's health and dental needs are further complicated because of one's impairment (World Health Organization, 2022; Beduk, 2018; Emerson and Baines, 2010).

7. Not affording a colour TV or not affording a washing machine were both weighted 2. These two items were dropped by Guio and Marlier (2017) in their detailed analysis to identify an optimal list of items for their alternative 13-item material deprivation indicator and are not part of the 2017 EU-SILC indicator for material and social deprivation. Given that these items are still considered part of the nine-item list comprising MD or SMD in the EU-SILC up to 2016, the decision was taken to include them in the MDI but to reduce their weighting.
8. The four items indicating a household accommodation being too dark, a household accommodation suffering from neighbourhood noise, a household accommodation with problems related to pollution, and a household accommodation suffering from neighbourhood crime or vandalism were also weighted 2 each. Each of these items focus on a level of housing deprivation that is being included in this modified deprivation index.

The weightings described above carry, at a minimum, face and content validity as they are informed by both the theoretical knowledge and years of experience working with disabled persons; however, none of the rigorous testing required to stipulate the weighted MDI's criterion or construct validity were carried out. This point is a recognised limitation permeating the extensive use of the MDI throughout the study and further discussed in the following section (sec. 4.4.7.7).

The degree to which these weightings improve the specificity and sensitivity of the MDI to the deprivation of SAL and nonSAL households was not analysed in detail as such an analysis would require another study focusing on corresponding the MDI scores with other measures of deprivation. However, the main point considered was that none of the deprivation items and corresponding weightings are exclusive to SAL households. For instance, had the MDI included an item such as 'cannot afford personal assistance services', such an item would consequentially skew the MDI towards higher scores for SAL households arising from the specificity of such an item for SAL households. On the contrary, when an item such as 'arrears in payments

of rent or mortgage, or utility bills, or hire purchase repayments' is weighted higher, such weighting applies for all households.

4.5.7.7 Two slightly different versions of the MDI

The MDI includes a measure of households that consider only able to make ends meet with difficulty or great difficulty. This measure of subjective financial stress is not commonly used as a measure of household deprivation (discussed in sec. 2.10.4). As a test of sensitivity of the micro-part of the final model, two minor variants of the MDI were used, as follows:

- MDI-1: In this version, the 'inability to make ends meet' measure was removed and the remaining measures, adding up to 96, were calculated as a percentage to give a score comparable to the MDI;
- MDI-2: Here, the measures 'inability to make ends meet' and 'capacity to face unexpected required expense' were removed, and the remaining measures, adding up to 88, were expressed as a percentage.

4.5.7.8 Advantages, disadvantages and implications of the resulting MDI

The creation and use of the Modified Deprivation Index (MDI) has the one main advantage in that it can quantify an extent of deprivation that is not captured when the EU-SILC indicators for 'material deprivation', 'severe material deprivation', 'material and social deprivation', and 'severe material and social deprivation' are used. Such an index can better differentiate between degrees of deprivation experienced by SAL households when compared to other households. Also, given that the MDI is not designed to categorise individuals or households who can be defined as poor or materially deprived from those who are not, it avoids the Type II errors described by Beduk (2018) in which individuals or households would not be identified as experiencing deprivation because they do not meet the threshold number of deprivation indicators (for instance 5 items on the 13 material and social deprivation items on the EU-SILC MSD indicator). Further, the use of the MDI index facilitates the examination of the impact of various explanatory variables on deprivation, with the possibility of identifying those factors that explain the main variations in deprivation.

The incorporation of more deprivation items in the MDI than the nine items that were used in the 2009 EU-SILC material deprivation indicator and the 13 items now used in the 2017 EU-SILC material and social deprivation indicator enables the capturing of a broader perspective on situations of deprivations. For instance, the 13-item EU-SILC material and social deprivation indicator excludes important considerations such as whether a household has the ability to make ends meet (a measure of subjective financial stress, discussed in detail in sec. 2.10.4), or whether there are unmet health or dental health needs within the household because of lack of affordability. The unmet health needs because of lack of affordability item has been described as especially applicable to disabled persons or individuals with a chronic health problem (Beduk, 2018).

The use of such an index in this study provides a simplified approach to gauging degrees of deprivation on a continuum and interpreting the scores; a higher score on the MDI represents a higher level of deprivation as measured by the items incorporated in the index. The MDI scores provide a straightforward transparent scale by which differences in deprivation between SAL households and other households, and trends in deprivation over a seven-year period could be assessed. This simplified, straightforward approach, however, comes with a number of limitations.

First, the use of all the available EU-SILC items in the construction of the MDI did not discriminate between items which may overlap and are consequently double counted. For instance, the 'inability to face an unexpected expense' and the 'inability to make ends meet' may overlap to a certain degree in the economic deprivation they represent. Still, a household may be managing to make ends meet but not have the resources to cover an unexpected expense. No factor analysis was carried out in relation to the additional 12 items used to ensure that each item is measuring a distinct factor of deprivation. Although the additional items were included to provide a more comprehensive picture of deprivation, the possible overlap between the additional items may compromise the extent to which the MDI presents an accurate representation of the concept it is designed to measure. This said, to the extent that the additional items introduced any possible overlap, such an overlap will be common throughout all the readings and will not affect the comparative

analysis; if an over representation of deprivation is measured by the MDI for SAL households the same over representation will be present for other households.

To the extent that the MDI is a constructed scale based on 25 indicators, it is not capable of accounting for qualitative different experiences of deprivation. Beduk (2018) criticises the use of such scales because they are not sensitive to people's different needs that can impact their living conditions. This point is especially relevant for disabled persons' accessibility and support needs. Beduk (2018, p. 110) argues for "more comprehensive equivalence scales" as necessary to adjust measures of deprivation "for varying need patterns". This recognised limitation, though important when using an MDI type of instrument for the identification of different experiences of poverty and deprivation, is not a concern for this study. Equivalising the MDI to make it more capable of capturing disabled persons' particular experiences of poverty would render it inadequate for the purpose of comparing deprivation in SAL households with that of nonSAL households.

The measurement of deprivation at the household level using the MDI assumes a homogenous experience of deprivation at household level. For the deprivation items that are measured at a household level, this assumption is straightforward; if, for instance, a household cannot afford to keep the home adequately warm in winter, this deprivation applies to the whole households. For items that are measured at an individual level, this assumption allows for the possibility that a household may have a member experience a deprivation item, but that deprivation item is not experienced by the whole household. For instance, if an adult member of the household had unmet health or dental health needs because of lack of affordability, this is interpreted as a household having an adult member with unmet health or dental health needs even if other members of the household did not experience such a deprivation. This transformation is based on the assumption that household deprivation is somehow shared between household members. The new household variable does not imply that all household members had, in this case, unmet health and dental health needs because they could not afford them; rather the variable indicates a household in which at least one adult member experienced this deprivation. As a result of this assumption, the measurement of household deprivation may be inflated by items of individual household members' deprivation.

However, as previously stated, any possible overinflation of deprivation is a constant throughout all comparative analysis and applies for all households. Moreover, conceptually, the deprivation of an individual member cannot be completely neutral in any account of household deprivation.

One additional disadvantage of the MDI is that by departing from the EU-SILC indicators of material and social deprivation the picture of deprivation analysed in this study cannot be straightforwardly compared to mainstream research using the EU-SILC indicators. This limitation is recognised; however, considering the study's research question and the fact that comparing results of this study with previous research using the EU-SILC indicators was not a concern of this study, it is a limitation well offset by the advantages of having an indicator that measures degrees of deprivation and conceptualises deprivation as experienced on a continuum.

Assigning differential weightings to the items incorporated in the MDI could, in theory, misrepresent the difference in deprivation between SAL and nonSAL households. For instance, if SAL households are more likely than nonSAL households not to have the ability to face an unexpected expense, then assigning this deprivation item a high weight increases the deprivation difference recorded by the item. This resultant increase is not necessarily a misrepresentation because it may better represent a true difference in the experience of deprivation between SAL and nonSAL households.; it would be a misrepresentation only if the deprivation difference between SAL and other households is distorted in a way that the real picture is not captured in the scores.

In order to assess the impact of the weighting of the MDI items on the aggregate mean scores of SAL and nonSAL households, the difference in the MDI scores between SAL and nonSAL households was calculated using both the weighted and non-weighted MDI (MDInw). Compared to the MDInw, the MDI gave slightly higher scores for the differences between SAL and nonSAL households material deprivation scores. Over the seven years, for all the countries, the weighting contributed to an average increase of one point in the MDI score difference. The weighting did not change the trends in the scores; nor did it skew the MDI difference

between SAL and nonSAL households in any way (see Table 4.1 below for full details).

Table 4.1: Increase in the difference between SAL and nonSAL households MDI scores resulting from weighting items of MDI, listed by country average in ascending order (points on MDI, calculated as follows, [SAL MDI - nonSAL MDI] - [SAL MDInw - nonSAL MDInw])

	2013	2014	2015	2016	2017	2018	2019	average
Luxembourg	0.3	0.3	0.3	0.4	0.3	0.5	0.4	0.4
France	0.8	0.6	0.5	0.5	0.4	0.7	0.6	0.6
Finland	0.5	0.5	0.6	0.8	0.6	0.9	0.7	0.7
Cyprus	0.7	0.7	0.5	0.7	0.7	0.8	0.8	0.7
Austria	0.7	0.6	0.7	0.7	0.9	0.8	0.7	0.7
Switzerland	0.5	0.8	1.0	0.8	0.6	0.9	0.7	0.7
Italy	0.9	0.8	0.7	0.9	0.7	0.7	0.6	0.8
Spain	0.5	0.7	0.6	0.9	1.0	0.9	1.0	0.8
Malta	0.8	0.7	0.9	1.0	0.5	0.8	0.7	0.8
Norway	0.8	0.7	0.9	0.7	0.7	1.0	1.2	0.8
Czech Republic	0.9	1.0	0.8	0.8	0.7	0.8	0.9	0.9
Germany	1.0	1.0	0.9	0.9	0.9	0.8	0.8	0.9
Sweden	0.8	1.1	1.1	0.9	0.8	0.9	0.6	0.9
Greece	0.8	1.0	1.0	0.8	1.0	0.9	0.9	0.9
Serbia	1.0	0.6	0.8	0.7	1.0	1.1	1.6	1.0
Estonia	0.9	1.0	1.0	0.9	1.1	1.0	1.0	1.0
Netherlands	0.8	1.1	1.2	1.1	1.0	0.8	0.8	1.0
Denmark	0.9	1.5	1.0	0.8	0.8	0.8	1.2	1.0
Belgium	0.9	1.1	0.8	1.1	1.0	1.0	1.1	1.0
Slovakia	0.8	0.8	1.0	1.1	1.1	1.2	1.1	1.0
Ireland	0.5	0.8	1.1	1.4	1.3	1.0	1.2	1.1
Poland	1.1	1.2	1.0	1.1	1.0	1.1	1.0	1.1
Hungary	0.8	1.0	1.1	1.2	1.1	1.2	1.4	1.1
United Kingdom	1.1	1.3	1.1	1.2	1.0	1.1	nd	1.1
Portugal	1.0	1.4	1.2	1.2	1.3	1.1	1.1	1.2
Slovenia	1.0	1.1	0.8	1.1	1.6	1.5	1.2	1.2
Croatia	1.2	1.1	1.3	1.3	1.5	1.4	1.2	1.3
Iceland	1.4	1.3	1.3	1.5	1.4	0.9	nd	1.3
Lithuania	1.2	1.1	1.1	1.1	1.9	1.7	1.2	1.3
Bulgaria	1.2	1.3	1.3	1.2	1.5	1.5	1.8	1.4
Latvia	1.3	1.0	1.2	1.5	1.6	1.7	1.5	1.4
Romania	1.5	1.6	1.5	1.6	1.6	1.5	1.5	1.5

Consistent with Guio, Gordon and Marlier's (2012) and Guio et al.'s (2017) critique of weighing deprivation indicators differently, the weighting does not distort or misrepresent the differences in MDI scores between SAL and nonSAL households; it does, however, slightly amplify these differences, thereby showing itself to have

greater specificity and sensitivity to SAL households' material deprivation. Also, the MDI is not a diagnostic test or a measure to establish whether a household is, or is not, materially deprived; rather it provides a measure of a range of deprivation situations experienced by participating households on the basis of self-reported items of deprivation.

One additional consequential limitation of the MDI is that it is a composite deprivation score that conceals the contribution of each item to the score. This limitation was partially addressed by further analysing each deprivation item for each country as part of the in-depth analysis of the 2018 data.

Considering the issues discussed above, the decision was taken to use the weighted MDI throughout the study. The development of the MDI was not intended to create the most precise measure of material deprivation or of economic deprivation or of health deprivation or of housing deprivation, or a precise measure of deprivation in its multidimensionality. Rather, the process leading to the conception of the MDI was informed by the need for a practical instrument that could give a more comprehensive picture of deprivation than the EU-SILC indicators, that could describe the extent of deprivation on a continuum, and that could be used for comparative purposes. The use of the MDI provided a measure of modified deprivation that could be employed across all participating countries for the seven years studied.

4.6 The qualitative analysis

While a disability focus in poverty research has been generally scarce, personal narratives of the ways impairment experiences are shaped by poverty and how quality of life experiences are shaped by the complex relationship between impairment and poverty and the resultant disability are even more rare in academia. Disabled persons and their families have not had their say on what poverty means to them, how they experience material deprivation, what it means to live in a perpetual state of vulnerability, how the age of austerity has impacted their lives, which social policies provide them with security and hope, and how their lives would change with the full implementation of Article 28 of the UNCRPD. The

analysis of the EU-SILC does not provide this perspective. Beresford and Croft (1996, p. 110) argued that persons who would have experienced poverty “have particular knowledge and understanding of and concern about their oppression” (p. 110) and that “the inclusion of poor people in poverty discourse can only increase the richness, effectiveness and equality of that discourse”. Such an approach can lead to “developments in the theorising of poverty which emphasises the agency of poor people, while not ignoring the structural constraints they face” (Lister and Beresford, 2000, p. 301). On a practical level, Beresford and Hoban (2005) identify the importance of supporting independent organisations that are developed and operated by people with direct personal experience of poverty in their contribution to and engagement in poverty research. Beresford (2003, as quoted in Beresford 2013, p. 147) proposed a research paradigm based on the understanding that “the *shorter* the distance there is between direct experience and its interpretation ... the *less* distorted, inaccurate and damaging resulting knowledge is likely to be”.

The original research plan of direct and substantial engagement with disabled persons was thwarted by the COVID-19 pandemic; this unexpected development presented a challenge of searching for the ‘voice’ of disabled persons through alternative sources. In the absence of a substantial direct engagement of disabled persons in this research project, the decision was taken to tap into a rich source of data reflecting disabled persons’ experiences as compiled by Disabled Persons’ Organisations (DPOs) from the countries being examined in this study. According to the working methods set by the United Nations Committee on the Rights of Persons with Disabilities (CRPD), two years after its ratification of the UNCRDP a State is duty-bound to submit to the CRPD a report outlining the country’s implementation of the convention; following the initial report, each country is required to submit an update report every four years. In preparing these reports, the CRPD emphasises the importance for State parties to engage with DPOs in line with Article 4 of the UNCRPD. Moreover, the CRPD invites DPOs to submit their own reports to enable the CRPD “to have a more complete understanding of various problems affecting the implementation of the Convention in a specific State party” (United Nations 2011, para. 43). All documentation submitted by DPOs is deposited in the ‘Country-specific information’ section of the UNCRPD website unless it is part of a DPO’s request for a private meeting with the CRPD. The CRPD recognises DPOs as organisations with

a majority of disabled persons in its membership, and governed, led and directed by disabled persons.

The DPOs' alternative reports referred to above represent the concrete implementation of the 'nothing about us without us' principle in the monitoring of the implementation of the UNCRPD. The European Disability Forum has urged DPOs and disabled persons to participate in the process, and also published a guide for DPOs on the subject (European Disability Forum, n.d.). The alternative reports prepared by DPOs are intended to give a clear and accurate picture of the situation of disabled persons in their country, focusing on disabled persons' enjoyment of their civil, economic, political, social and cultural rights as covered by the UNCRPD. While it is difficult to ascertain the extent to which any one DPO report manages to capture the true reality of disabled persons' lives it describes, the assumption made in this methodological decision is that these reports comprise valid and distinctive data that can inform the research question of this study. In particular, the focus of the DPOs' alternative reports on Articles 28, 19 and 27 bear particular reference to financial poverty and material deprivation.

4.6.1 The reports

As mentioned in the preceding section, States party to the CRPD bind themselves to submit a report on their country's compliance with the Convention within two years from when they ratify the Convention and every four years thereafter. The reporting period is therefore one that covers a period of between two to four years. Working backwards, reports submitted in 2013 would be covering the 2009-2012 period and reports submitted in 2014 would be covering the 2010-2013 period. In order to ensure that the DPOs' reports selected for analysis would cover at a minimum two years and possibly four years of the 2013-2019 period, the time period 2015-2021 (up to the conclusion of this part of the study in November 2021) was selected. Moreover, for the 32 countries featuring in this study where reports were available, the latest reports were selected. In this way, all the reports analysed portray the most up to date perspectives of DPOs on their respective countries, covering some years that fall within the 2013-2019 study period. Depending on the date of ratification, for some countries the DPOs' reports covered the initial period, while

for others it covered the first and/or the second review. Although the years of the DPOs' reports do not exactly match the EU-SILC data analytic period, the choice explained above is further justified when one considers that reports submitted by DPOs as part of a country's CRPD obligations would be covering in retrospect the preceding two or four years, and not intended to give a cross-sectional picture of the year in which they were submitted. Whereas the EU-SILC survey data give a cross-sectional picture of the year in which it is collected, the DPOs report on the previous two to four years covered in any country's reporting period.

All the DPOs' reports from countries covered in this study and available in the English language were considered. In all cases, the reports covering the latest reporting session for each individual country were selected for examination, giving reports that were submitted in the 2015-2021 period. At the time when this part of the study was being concluded (11/2021), there were no alternative reports filed with the CRPD by DPOs from Finland, Iceland, Ireland, Malta, Netherlands, and Romania. The details of the 66 DPOs' reports covering 26 countries are found in Appendix L (pp. 641-668). Sixty-six reports from 26 countries were examined and analysed to identify answers to the question: What is the nature of deprivation experienced by disabled persons in Europe and what are the core issues they associate with the experience of deprivation?

4.6.2 The analysis

As explained in the previous section, the DPOs' reports represent the experiences and perspectives of disabled persons as communicated by their organisations. The content of each report can be considered as a mixture of factual data combined with the interpretation of the data. The interpretation presented by each DPOs' report is a narrative that conveys how the disabled persons, represented by the particular DPO, are experiencing their country's compliance, or otherwise, with the UNCRPD. This study's analysis of these reports is summative rather than interpretative in nature, and concerned with the manifest content. It aimed at understanding the shared stories of disabled persons and their households in the European countries for which reports were available. This analysis is described by Patton (2015, p. 551) as content analysis using an analyst-generated concept analysis or etic analysis

approach. In such analysis, the researcher applies pre-identified concepts, labels and terms to determine an 'observed' phenomenon.

Although the analysis of the 66 DPOs' reports primarily focused on Articles 28, 19 and 27 of the UNCRPD, the full text of each report was examined for its manifest content as described below.

From each of the 66 reports, the following extracts were highlighted in a table:

- All direct references to poverty, deprivation and related themes;
- All direct references to housing, accommodation, and related themes;
- All direct references to social protection benefits and related themes.

Each extract comprising of a quotation from a report was tabulated with the following information:

- URL address of report;
- Country of report from which quotation is extracted;
- Page number of quotation;
- DPO responsible for report;
- Reflection notes on quotation (where applicable).

The scope of the analysis was to extract the factors that the reports identify as critical to disabled persons' capability to live and participate in the community. The analysis did not intend to quantify the extent to which any issue discussed was common in different reports or to evaluate the merits or otherwise of different countries. None of the reports examined were written for a comparative purpose and the examination and analysis carried out as part of this study respected the scope for which each report was written, that is the extent to which disabled persons consider that their country's reality meets the standards set in the UNCRPD.

Some reports were comprehensive, covering broad areas of the UNCRPD while others were more focused on either particular issues or concerned with sectorial interests. Consequently, the number of extracts used from each of the 66 reports reviewed depended on the extent of coverage given by the report to the themes identified above. While the DPOs' reports focus on issues related to their particular context, the analysis focused on the issues that were common to a broad array of

contexts and which therefore contribute to a better understanding of the deprivation reality of disabled persons and their families in contemporary Europe.

4.6.3 Strengths and limitations with using the DPOs' reports to study disability and poverty

As mentioned above (sec. 4.6.1 and sec. 4.6.2), the DPOs' reports examined in this study cover a broad range of organisations. Some reports are focused on particular issues or on particular articles of the UNCRPD; not all reports covered Article 28 in detail. While the UNCRPD provides a coherent structure for the DPOs' reports, each report has its own emphasis and choice of language; as a consequence, there is always the risk of misinterpretation in analysing a report's contents. Also, there are clear contrasts in reports written by DPOs that represent a coalition of organisations with an overall country perspective compared to the smaller DPOs focusing on specific groups or interests. Most of these limitations were addressed by the nature of the analysis that was carried out; the interpretative analysis did not focus on comparing specific issues of different reports; rather, it aimed at extracting and understanding the deprivation reality the DPOs were portraying.

Notwithstanding the limitations outlined above, the analysis carried out brought together the communal experience of disabled persons as told by the organisations that are closest to the lived experience of the disabled persons they represent. The reports tell more stories than could ever be gathered through any one study with the direct involvement of disabled persons. Also, the analysis carried out recognises the significance of the contribution disabled persons have already given. The DPOs' reports are authored and owned by disabled persons, encompass the information that is valued and considered valid by disabled persons, represent the disabled persons' community wisdom and narratives, thereby contributing to a fuller picture of the reality they live.

4.6.4 The 'positionality' of the DPOs' reports

All of the DPOs' reports represent a clear stance and position, grounded in a world view that recognises every disabled person as a human being with "the inherent dignity and worth and equal and inalienable rights of all members of the human

family” (United Nations, 2006, preamble Article a). They recognise disabled persons’ social context as contributing to their disability resulting from their interaction with “attitudinal and environmental barriers that hinders their full and effective participation in society on an equal basis with others” (United Nations, 2006, preamble Article e). They embrace the full implementation of the UNCRPD as their political programme. In a broad sense, the UNCRPD also represents the DPOs belief on the nature of disabled persons’ social reality, or their ontological assumptions and their notions about human agency. The nature of their knowledge is experiential, a realist and interpretivist combined epistemological orientation.

No doubt, the heterogeneity of the DPOs authoring the reports analysed in this study embodies a broad range of “values and beliefs that are shaped by their political allegiance, religious faith, gender, sexuality, historical and geographical location, ethnicity, race, social class, and status” (Darwin Holmes, 2020, p. 2). This heterogeneity goes against the notion of a ‘positionality’ of DPOs; not only do the organisations themselves have distinct identities in particular context, but they also characterise a membership base with a variety of ‘positionalities’, so to speak. This notwithstanding, the UNCRPD represents a common position of the disabled persons and their organisations. Moreover, the DPOs’ position is an insider’s perspective, an emic account and view of the reality of the disabled persons they represent.

Clearly, from a positivist research paradigm, the DPOs’ reports are not neutral or objective or distant from the issues they discuss and portray. Their approach is more political than technical. The information they communicate is the result of research “as an essentially political activity rather than a neutral ‘fact-finding mission’ ... concerned primarily with improving people’s lives rather than solely with generating knowledge” (Beresford, 2013, p. 145). They may face the objection of being “partisan or biased ... because one sectional interest may be seen to be dominant” (Beresford, 2013, pp. 145-146). It is unlikely that any of the DPOs will claim their reports to be ‘value free’; on the contrary, the reports emanate from the strong value position of the UNCRPD. Moreover, the reports represent the perspective of disabled persons who have “developed their own knowledge, both individual and collective knowledge; find[ing] out things for themselves from their

perspective, on the basis of what concerns them ... advancing their understanding, their questions and their evidence” (Beresford, 2013, p. 146). The examination and analysis of the DPOs’ reports in this study brings disabled persons’ experience of deprivation closer to the interpretation of the deprivation being studied through the analysis of the EU-SILC data. It is the ‘positionality’ of the DPOs reports that enhances the quantitative analysis and which was described earlier on in this chapter as a dialogical approach to knowledge (sec. 4.3).

4.7 Ethical considerations

The main ethical dilemma confronted in this study was the conflict between wanting to understand the bigger picture on the link between poverty and disability at a European level and the realisation that such a focus will be aggregating stories of disabled persons thereby risking devaluing the uniqueness of each person’s story. The methodology described above endeavoured to balance the zooming out process achieved through the analysis of the EU-SILC data by zooming into the narratives voiced by communities of disabled persons in the DPOs’ reports. Although Lister (2015) distinguishes the statistics from the experience of poverty, the statistics are also capable of revealing the reality of the poverty experience that would otherwise remain untold.

4.7.1 Approval from Eurostat

Eurostat gives access to EU-SILC microdata for scientific purposes only after a thorough examination of the research project and the procedures in place to secure the confidentiality and good use of the data. In the first instance, the organisation under whose auspices the research project is carried out has to be approved as a research entity by Eurostat. At the initial phases of the Eurostat application process related to this study, consideration was given as to whether to apply under the auspices of both the University of York (UoY) as the main research entity, and the University of Malta (UoM) as a collaborating entity. Both entities applied to be recognised as a research entity and were added to the list of approved research entities towards the latter part of 2017.

After an extensive process to identify how best to secure and access the microdata during its use on this project, a first application was filed with Eurostat in June 2019 under the auspices of the UoY. In their feedback on the application, Eurostat insisted that access to the microdata could only take place within the premises of the UoY and that all data and intermediary results would be securely stored on password protected computers that do not leave the premises of the UoY, and to which access is restricted only to the researchers named in the research proposal. Following email exchanges with Eurostat involving Dr. Zoë Irving as the designated “Principal Researcher” of the project, Eurostat recommended that a new application be submitted as a Network Project under the auspices of both the UoY (as the main research entity) and the UoM (as a collaborating entity) to allow for the microdata data and any intermediary results to be used on both the premises of UoY and the premises of UoM. A new application was filed in November 2019. Following further discussions with Eurostat on the security of the data, approval was granted on 5 March 2020 (see Appendix B, p. 410). Approval for further extension on the use of the data was sought and granted beyond the initial 31 December 2020 end-of-project date.

The use of the EU-SILC microdata involved extensive preparation through the Eurostat self-study material (see Eurostat, 2021d for latest versions of self-study material) which includes a detailed guide on becoming and being a ‘safe researcher’ and self-assessment test on the material covered in the guide. As per rigorous protocol agreed with Eurostat in order to ensure the safekeeping of the EU-SILC microdata throughout the research project, the data and all analysis and results were stored on the UoY ADACX Secure Cluster and accessible only to the researchers named in the approved proposal, and access to the data took place solely at either the premises of the UoY or of the UoM. In the process of the analysis, confidential intermediary results were shared between the UoY and the UoM using a secure VPN connected with the ADACX Secure Cluster at the UoY. All confidential intermediary results were securely stored on the ADACX Secure Cluster at the UoY or on a password protected computer located at the UoM. The three researchers and the data manager signed a Eurostat ‘Confidentiality Declaration’ outlining the strict obligations to safeguard the confidentiality of the data (Appendix B, p. 408).

4.7.2 Other ethical considerations

Three further ethical considerations are highlighted below:

First, as per the UoY 'Code of Practice and Principles for Good Ethical Governance', careful consideration was given as to whether the secondary analysis of the EU-SILC data and the secondary analysis of the DPOs' reports publicly available on the CRPD website required a formal ethical review by the Social Policy and Social Work Ethics Committee at the UoY. Four main issues were considered:

- The thorough Eurostat application process involved in getting approval to use the EU-SILC microdata;
- The security procedures in place to guarantee the safekeeping of the data;
- The fact that all the microdata is highly anonymised;
- The fact that the DPOs' reports are publicly available and part of a UNCRDP transparent compliance process.

On the basis of these considerations and a detailed review with the supervisors of this study, the decision was taken that the study did not require further ethical approval.

Second, as per the UoM 'Research Code of Practice' and its 'Research Ethics Review Procedures', approval was also secured from the Faculty Research Ethics Committee of the Faculty for Social Wellbeing at the UoM (see Appendix B, p. 411).

Third, consideration was given on whether to write to the DPOs that authored the 66 reports analysed in this study seeking their permission to use the contents of the reports in this study. All the reports are part of a UNCRDP transparent compliance process and are publicly available with the scope of giving better visibility to the issues faced by disabled persons, with a focus on important issues that are not covered in the official reports of states party to the convention. The scope of the reports is their public consumption, and the analysis of the reports adds further value to their contents. Moreover, the analysis carried out did not involve the identification of any specific report content, thus avoiding any possible misinterpretations or wrong conclusions attributed to any of the DPOs' reports. Therefore, no permission was considered necessary for the secondary analysis of the reports.

4.8 Conclusion

This chapter described in detail the research strategy, design, and methods used to answer the research question: ‘What is the impact of living with a limiting long-term impairment, health problem, or illness, on a household’s experience of material deprivation across different EU countries, and what household, regional and country factors contribute to deprivation in these households?’ Some further details pertaining to specific analysis carried out are given in the following chapters focusing on the results derived from the analysis of the quantitative and qualitative data. The mixed research strategy described employs a quantitative component followed by a qualitative component.

Although the two parts are somewhat distinct, they are later discussed in relation to each other, with the qualitative analysis elaborating the incomplete picture gained from the EU-SILC data. The more detailed analysis of the quantitative data does not render such analysis as more important to the qualitative analysis of the DPOs’ reports; rather, it is their combined interpretation that is used in answering the research question and drawing some tentative conclusions and consequential recommendations in Chapter 9.

The next two chapters present the analysis of the EU-SILC data, with Chapter 5 giving the findings from the descriptive analysis of the 2013-2019 cross-sectional data and Chapter 6 furthering the analysis of Chapter 5 to explain some of the factors that contribute to deprivation and their relationship to households supporting disabled persons.

Chapter 5. Disability and deprivation – The overall picture

5.1 Introduction

The ultimate aim of this study is to understand the impact of living with a limiting long-term impairment, health problem or illness on a household's experience of material deprivation across different European countries. The review of the research literature points towards a link between poverty and disability; how does living with an impairment, operationalised as living with severe activity limitation, impoverishes a household's quality of life? The point of extensively comparing households supporting disabled persons (SAL households) to other households (nonSAL households) is specifically to examine in detail how these two categories of households differ in the extent of deprivation they experience.

This chapter describes the results from the descriptive analysis of the aggregated data for 2013 to 2019, and a more detailed analysis of 2018, using the Modified Deprivation Index (MDI) as the main measure to study the different patterns of deprivation reported by households including an adult member with severe activity limitation (SAL households) in comparison to other households (nonSAL households) and to the general trends in each of the participating countries. The general question guiding the analysis in this chapter is the following: What is the shape and pattern of deprivation in SAL households compared to nonSAL households that emerges from the EU-SILC data of 2013-2019? This analysis covers 32 countries for the years 2013 to 2018 and 30 countries for 2019. Iceland withdrew from participating in the EU-SILC annual exercise as from 2019 and the United Kingdom (UK) 2019 data was not available in the latest issue of the EU-SILC data available for use in this study (April 2021) pending post-Brexit agreement on the dissemination of UK data by Eurostat.

SAL households made up 14.2% of the sample studied in 2013, down to 11.0% in 2019. These are households with an adult member who is severely limited in activities that people usually do because of a long-standing health or impairment condition. If one compares 2013 to 2018 to exclude the impact of the absence of the UK data in 2019 (with the UK having a relative high percentage of SAL households

compared to other countries), there is no explanation for the gradual decrease in the number of SAL households over the years 2013 to 2018 (cumulative 2% decrease between 2013 to 2018). A breakdown of the samples used in this study is given in Table 5.1 (below) and Table 5.2 (below).

Table 5.1: SAL and nonSAL households participating in the EU-SILC surveys 2013-2019

	sample			weighted		
	SAL	nonSAL	total	SAL	nonSAL	total
2013	33,250	212,102	245,352	31,494,011	190,466,039	221,960,050
2014	33,321	213,737	247,058	31,414,729	192,316,484	223,731,213
2015	33,875	215,226	249,101	29,659,882	195,552,115	225,211,998*
2016	34,260	234,289	268,549	27,543,162	198,504,700	226,047,862
2017	37,263	241,763	279,026	27,654,400	199,700,101	227,354,501
2018	37,924	243,808	281,732	27,849,096	200,320,392	228,169,487*
2019	33,128	230,199	263,327	22,125,973	179,021,209	201,147,182

*Totals for weighted samples may show minor discrepancies because fractional weights are used.

Table 5.2: Percentage of SAL and nonSAL households participating in the EU-SILC surveys 2013-2019

	sample			weighted		
	SAL (%)	nonSAL (%)	Total (%)	SAL (%)	nonSAL (%)	Total (%)
2013	13.6	86.4	100	14.2	85.8	100
2014	13.5	86.5	100	14.0	86.0	100
2015	13.6	86.4	100	13.2	86.8	100
2016	12.8	87.2	100	12.2	87.8	100
2017	13.4	86.6	100	12.2	87.8	100
2018	13.5	86.5	100	12.2	87.8	100
2019	12.6	87.4	100	11.0	89.0	100

A closer examination of the above figures aggregated by countries shows a significant variation in the proportion of SAL households in the different countries. For instance, in 2019, the percentage of SAL households varied from a low 4.5% in Sweden to a high 21.1% in Croatia. This variation is present in all the years covered by this study and generally, though not always, represents clear trends by countries; in other words, the variation for each country over 2013-2019 years is mostly minimal compared to the variation between different countries (see Figure 5.1, p. 208).

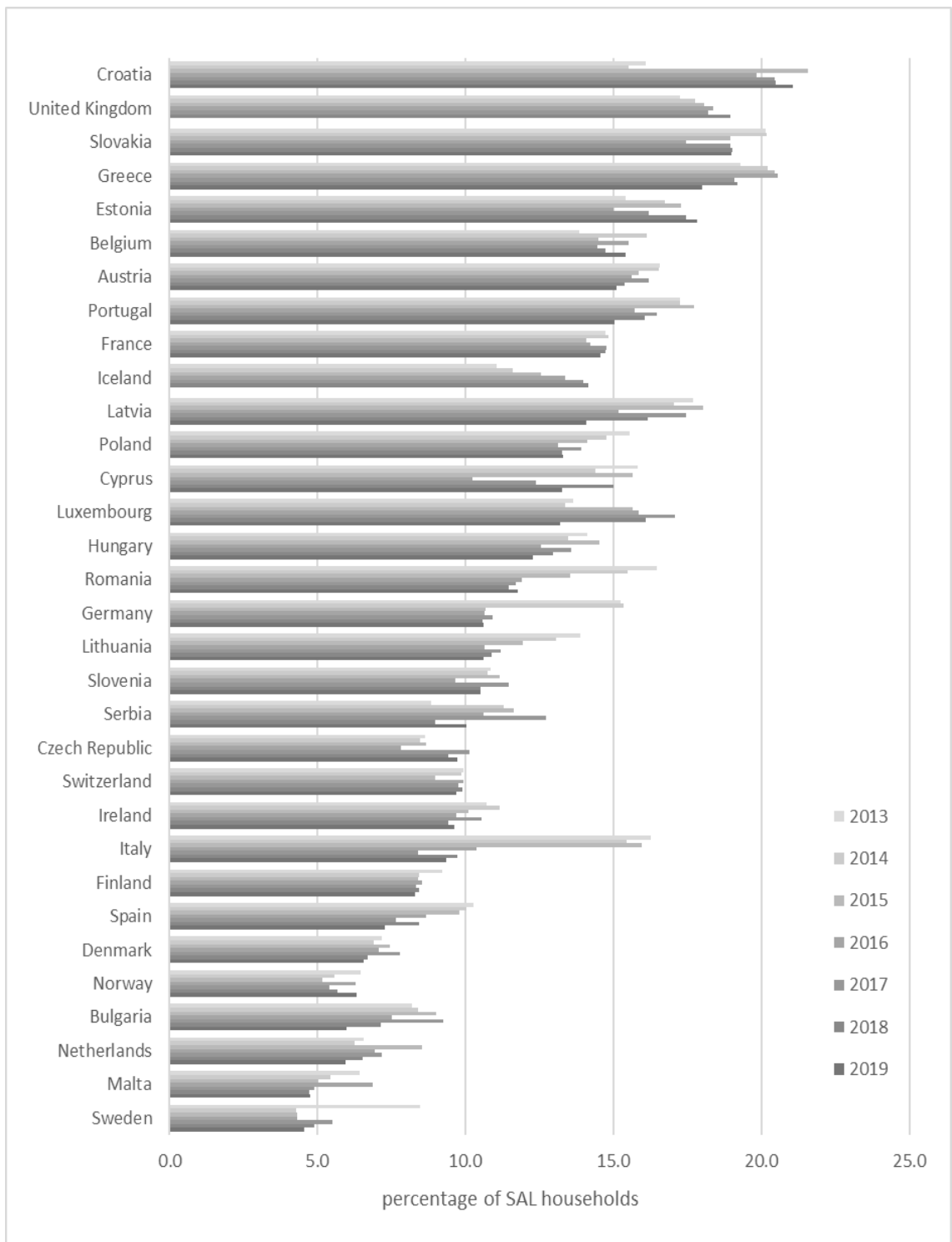


Figure 5.1: Percentage of SAL Households in weighted 2013-2019 samples, by country 2019 percentage (2018 for UK and Iceland)

The enormous variation by country in the number of households that identify themselves as having an adult member with severe activity limitation is in itself worth exploring and will be returned to later on when discussing country factors that may have an impact on both the reporting of one's impairment and any consequential deprivation. A full breakdown of the samples by countries are included in Appendix C (pp. 412-439).

5.2 Trends in MDI scores from 2013 to 2019

The following preliminary analysis explores the general picture of SAL households deprivation over a period of seven years compared to nonSAL households. It is a consistent picture of compounded deprivation for SAL households in all countries, irrespective of each country's average MDI score (see Table 5.3 below). Throughout 2013 to 2019, in every participating country, SAL households scored more on the MDI; using a t-test for equality of means, all results were statistically significant at 99% confidence level, with relative narrow confidence intervals (see Appendix D, pp. 440-446). There is an association between MDI score and the presence of activity limitation in a household, with the sample means clearly indicating that those with activity limitation have higher scores in MDI than those without activity limitation.

Over the seven years, there was an average 8.6 points difference between SAL and nonSAL households' MDI scores. This average remained fairly consistent throughout, with only minor unsubstantial variations. In the same time period, the aggregated MDI average for all countries decreased by 4.5 points with the nonSAL households average also decreasing by the same amount (4.5 points) and SAL households minimally less at 3.8 points (see Figure 5.2, below). A similar pattern is seen when 2019 is excluded (to ensure that the absence of the UK data is not impacting the averages), with global MDI decreasing by 4.0 points, nonSAL average decreasing by 4.0 points, and SAL average decreasing by 3.1 points.

The analysis of these aggregates of country household averages suggests that while SAL households are benefiting from the general decrease in deprivation, similarly to nonSAL households, the compounded deprivation experienced by SAL households is not being addressed by the general decrease in deprivation. This pattern will be

explored in more detail by looking at the trends for different countries, especially in those countries that experienced a substantial decrease in MDI deprivation score over the seven years.

Table 5.3: Difference in MDI scores (SAL – nonSAL) households compared to country average MDI scores (points)

	2013		2014		2015		2016		2017		2018		2019	
	Diff	Ave	Diff	Ave	Diff	Ave	Diff	Ave	Diff	Ave	Diff	Ave	Diff	Ave
Austria	6.0	8.4	6.7	8.7	6.1	8.0	6.8	8.2	6.9	8.0	7.0	7.2	6.9	6.9
Belgium	7.8	11.3	9.3	11.3	9.2	11.2	9.5	11.5	7.9	10.9	8.1	10.4	9.2	10.4
Bulgaria	10.3	38.6	10.8	35.2	9.8	33.6	9.7	31.8	10.7	29.8	9.7	26.7	11.5	25.2
Croatia	8.8	22.4	8.1	20.5	8.8	19.1	9.5	17.8	10.0	17.0	9.7	15.7	8.8	14.3
Cyprus	9.7	21.9	7.8	21.2	6.4	19.0	6.8	17.7	5.8	16.5	7.4	15.0	6.7	13.7
Czech Republic	6.1	9.6	8.1	13.3	8.3	12.0	7.7	10.8	7.7	9.9	8.2	8.3	7.8	7.5
Denmark	6.6	6.3	10.8	8.2	9.8	8.1	10.9	7.5	7.6	7.9	11.7	7.8	9.6	7.7
Estonia	9.1	15.7	9.9	14.0	9.6	12.5	7.8	11.8	9.8	11.7	9.8	10.6	8.7	9.5
Finland	4.5	6.3	4.0	6.2	6.6	6.1	7.4	6.4	6.2	6.6	7.1	6.5	5.4	6.1
France	6.9	11.6	6.5	12.0	6.2	11.3	5.6	11.0	5.1	10.5	6.9	10.9	6.9	11.1
Germany	9.7	11.8	9.6	11.1	10.1	10.4	9.0	9.6	8.7	9.0	8.7	8.6	8.9	8.0
Greece	6.4	24.7	6.7	25.4	7.3	25.4	5.7	26.0	7.0	25.4	6.5	24.7	6.8	23.8
Hungary	8.8	28.7	9.5	26.4	9.9	24.1	10.0	21.5	9.0	18.4	10.2	15.8	10.6	15.0
Iceland	10.0	11.7	10.1	8.9	8.8	8.9	9.5	7.6	8.8	7.1	7.7	6.6	-	-
Ireland	6.5	14.8	7.8	14.9	10.9	14.3	9.7	12.4	9.8	11.5	9.1	10.1	9.4	10.2
Italy	8.2	18.7	8.1	17.9	7.3	17.7	8.2	15.7	7.5	12.5	6.1	12.3	7.4	11.6
Latvia	11.0	30.3	10.3	27.4	11.7	23.9	12.8	22.3	11.0	22.3	13.3	19.7	11.0	16.5
Lithuania	9.1	23.4	8.3	21.7	9.0	20.7	9.7	20.4	13.4	20.0	12.4	19.0	9.3	17.1
Luxembourg	5.1	7.4	5.7	6.9	6.4	7.2	5.8	7.1	5.1	6.7	5.8	6.5	4.4	5.9
Malta	7.6	17.3	9.5	17.0	9.3	12.9	9.1	10.8	5.4	9.2	6.8	9.3	9.7	9.3
Netherlands	9.4	8.7	9.4	8.8	11.8	8.7	10.6	8.2	10.8	7.8	11.0	8.3	9.6	8.2
Norway	7.9	4.6	6.1	4.2	7.6	4.7	5.8	4.0	7.2	4.8	8.6	5.0	7.8	5.6
Poland	8.4	18.4	8.9	16.8	8.5	14.9	8.1	12.9	7.3	12.3	7.7	11.2	7.4	10.2
Portugal	9.2	22.1	10.0	21.4	8.6	19.4	9.7	17.7	10.1	16.6	9.0	15.2	9.2	14.3
Romania	13.1	36.1	12.8	33.9	12.0	32.0	13.3	31.5	13.2	29.5	13.9	27.5	14.5	25.7
Serbia	11.0	30.0	8.1	31.5	12.3	30.2	6.2	17.7	11.6	28.2	11.7	25.1	12.5	21.9
Slovakia	6.7	17.4	6.3	16.5	8.5	15.2	8.3	14.5	8.2	13.2	8.9	12.9	7.8	12.4
Slovenia	7.2	10.9	10.9	14.6	10.0	13.1	10.3	12.3	11.8	11.9	12.5	10.9	9.8	9.5
Spain	5.9	15.8	5.2	15.9	5.2	13.7	7.1	14.0	9.1	12.5	8.1	12.9	9.9	11.9
Sweden	6.1	5.2	8.4	5.2	9.4	5.0	6.2	5.0	7.3	5.0	6.5	5.1	5.1	4.9
Switzerland	6.3	6.3	6.9	7.0	8.6	6.6	7.8	6.7	6.8	6.4	9.2	6.6	7.4	6.6
United Kingdom	8.5	12.9	8.9	12.1	7.9	10.8	8.3	10.4	7.3	7.5	8.2	8.5	-	-

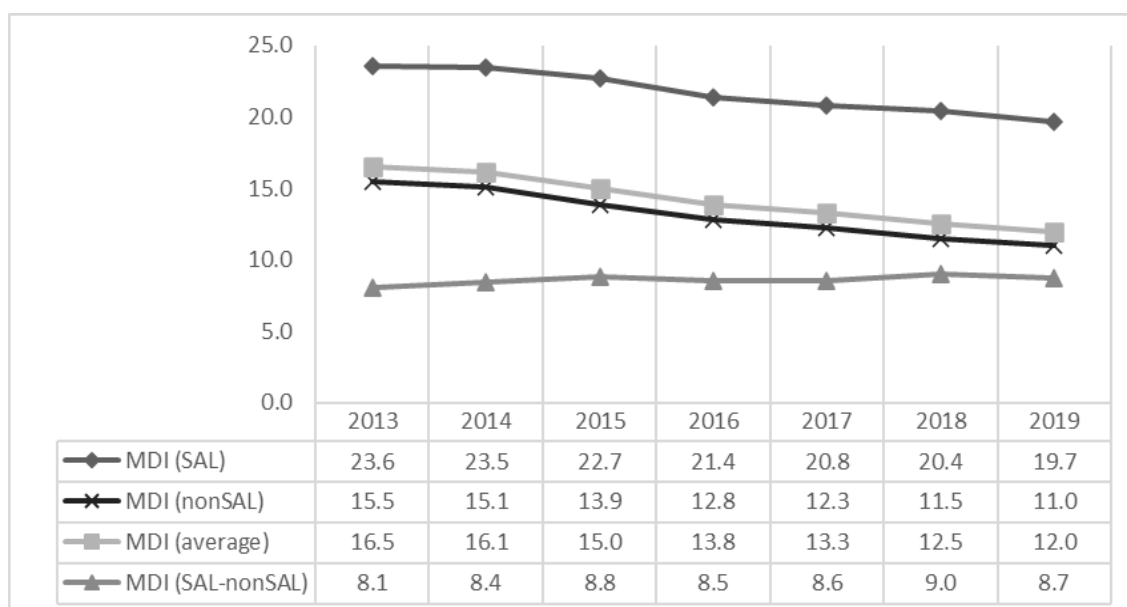


Figure 5.2: Trends in average MDI scores 2013-2019 for SAL and nonSAL households, differences in their averages, and for all households (scores in points)

The persistent compounded deprivation for SAL households follows a variety of patterns in different countries. In order to understand the trends in the gaps between SAL and nonSAL MDI scores, the same analysis was carried out using country MDI aggregated scores. Four MDI scores were calculated and charted over the seven years (six years for Iceland and UK): the country MDI average, the MDI for SAL households, the MDI for nonSAL households, and the difference in MDI scores between SAL and nonSAL households. This analysis suggests some interesting results:

1. In those countries where the average MDI marks the most significant decreasing trend over the 2013-2019 period, the MDI for SAL households also decreases but the gap does not. For instance, in Latvia, the country MDI average decreases from 30.3 to 16.5 points and for SAL household from 39.4 to 26.0 points; yet, the SAL-nonSAL difference remained unchanged. Similar changes took place in Hungary, Bulgaria, and Romania. Other countries such as Spain, Ireland, Slovenia and Malta experienced an increase (of more than 2.0 points) in the difference between SAL and nonSAL households MDI score at the same time that the country experienced a decrease in the average MDI score.

2. In Denmark, SAL households experienced an increase in MDI score of 2.9 points more than the country average contributing to an increase of 4.0 points in the difference between SAL and nonSAL households score.
3. Some countries that maintained a constant MDI score still saw an increase in SAL household MDI or a constant SAL household MDI, yet with a corresponding increase in the SAL-nonSAL MDI households difference (for instance Hungary, Czech Republic and Belgium).
4. In contrast, Cyprus and Iceland saw a decrease in the average MDI (8.3 and 5.0 points respectively) with a corresponding greater decrease in SAL households MDI (10.6 and 7.3 points respectively) and a resultant decrease in the SAL-nonSAL MDI difference (3.0 and 2.2 points respectively).

The above four results do not explain each and every country's particular situation as measured by the MDI (see Appendix D, pp. 447-462, for the results of each country). However, they do point towards a general pattern in which SAL households do not benefit as much as nonSAL households from a decrease in a country's material deprivation. As a consequence, even when a country experiences a significant decrease in deprivation (as measured by the EU-SILC variables used in the MDI), which is also reflected in a decrease in SAL households' deprivation, the deprivation gap between SAL and nonSAL households persists. Conversely, an increase in a country's deprivation can be unequally experienced by SAL and nonSAL households (for instance Denmark). Put simply, SAL households seem to be benefitting from a country's economic progress but their exacerbated deprivation compared to nonSAL households remains generally consistent.

5.3 Aggregated deprivation and country median household equivalised disposable income

To what extent does the pattern identified in the previous section also emerge when we consider the changes in the different country's median household equivalised disposable income? The country MDI means, the SAL households MDI means, and the SAL-nonSAL difference MDI means were correlated with the median of the total household equivalised disposable income for each country (MHEDI). Through all years surveyed, both the country MDI mean and the SAL households MDI mean were

strongly correlated with the MHEDI. The higher the MHEDI, the lower were the MDI and the SAL MDI, implying that for all households and also for SAL households, aggregated material deprivation decreased with increasing country MHEDI (see Table 5.4, below for summary correlations, and Appendix E, p. 463, for detailed analysis). SAL households' deprivation scores also mirror a country's MHEDI. Somewhat in contrast, although the difference in the MDI scores for SAL and nonSAL households was moderately correlated with the MHEDI, the confidence intervals for most years either cross the threshold for what is considered to be an important effect (2014, 2015, 2016, 2018) or are rather wide to corroborate these correlations (all years). Similarly, the confidence intervals for the moderate correlations between the MDI country mean and the difference between SAL and nonSAL MDI averages do not support these correlations (for 2014, 2015, 2016, 2018 the confidence intervals cross the zero threshold, while for all other years the confidence intervals are wide).

Table 5.4: Correlation between MDI averages and median household equivalised disposable income

	2013	2014	2015	2016	2017	2018	2019
MDI with MHEDI	-0.750	-0.750	-0.730	-0.695	-0.720	-0.707	-0.646
SAL MDI with MHEDI	-0.718	-0.757	-0.745	-0.669	-0.694	-0.613	-0.600
SAL-nonSAL MDI difference with MHEDI	-0.424	<u>-0.271</u>	<u>-0.292</u>	<u>-0.245</u>	-0.407	<u>-0.296</u>	-0.367
MDI with SAL-nonSAL MDI difference	0.467	<u>0.234</u>	<u>0.211</u>	<u>0.275</u>	0.418	<u>0.312</u>	<u>0.417</u>
Values given are for Kendall's tau-b correlation coefficient.							
For underlined values of correlation coefficient, BCa 99% Confidence Intervals cross zero.							

This analysis corresponds to the previous one, further suggesting that while material deprivation for all households and SAL households decreased with increased national income, the difference in deprivation experienced by SAL and nonSAL households does not decline in the process. In general, considering the analysis in the previous section and in this section, using country aggregated means for MDI scores, the analysis implies that the difference in deprivation between SAL and nonSAL households does not predictably increase or decrease with the changes in a country's level of material deprivation or with a country's median household income; it does so in some countries but not in others. One may tentatively conclude that economic progress, as reflected in the MDI mean scores and in a country's

median household equivalised income, does not in general reduce the deprivation gap between households supporting disabled people and other households.

5.4 The at-risk-of-poverty trends over 2013-2019

The analysis carried out so far establishes a pattern of higher deprivation scores (as measured by the MDI) in SAL households compared to other households. In the following analysis, SAL and nonSAL households are compared using the at-risk-of-poverty (AROP) EU-SILC threshold, looking at the odds ratio of SAL households to be AROP compared to nonSAL households. Further analysis compares the level of deprivation between SAL households and other households that are AROP.

5.4.1 SAL and nonSAL households at-risk-of-poverty

The proportion of SAL households falling below the AROP threshold was significantly and substantially more than the proportion of nonSAL households throughout all the years studied. Cross tabulations for SAL/nonSAL households with AROP/notAROP were carried out first with the aggregated data for all years followed by similar analysis for each country. The odds ratios for SAL households being AROP compared to nonSAL households were also calculated.

Table 5.5: Percentages and odds ratio of SAL and nonSAL households AROP

	SAL households AROP	nonSAL households AROP	odds ratio SAL vs nonSAL AROP	statistical significance
2013	22.4%	16.9%	1.4	p < 0.000
2014	23.4%	17.1%	1.5	p < 0.000
2015	23.4%	17.5%	1.4	p < 0.000
2016	23.4%	17.7%	1.4	p < 0.000
2017	24.3%	17.4%	1.5	p < 0.000
2018	25.4%	17.4%	1.6	p < 0.000
2019	25.0%	17.4%	1.6	p < 0.000

Consistently, over the 2013-2019 period, a higher proportion of SAL households were AROP compared to nonSAL households, and SAL households were more likely to be AROP than nonSAL households, 1.4 times more in 2013 going up to 1.6 times more in 2019 (see Table 5.5, above).

Further analysis was carried out using the aggregated country data (see details in Appendix F, p. 466). In practically all countries, with some minor exceptions, throughout all the seven years (six years for Iceland and UK) a proportionately higher percentage of SAL households were AROP than nonSAL households. In Italy, throughout the seven years, a proportionately marginally higher percentage of nonSAL households than SAL households were AROP. Greece, where the difference between the two groups of households was never more than 2.2%, had one year (2016) unlike the general trend. The situation in the Netherlands was similar to Italy between 2013 to 2015, with a substantial rise in the difference between SAL and nonSAL households (AROP subgroup) from 2016 onwards. Spain's circumstances resembled the Netherlands for the first five years with an upsurge in 2018 and 2019. Iceland saw an increase in the proportionate percentage of SAL households AROP between 2014 and 2017, with a sharp decrease over 2018, while Denmark saw a shift upwards between 2013 and 2014 (see Table F.8, in Appendix F, p. 473). Similarly, again with parallel exceptions to those described above (as expected because of how odds ratios are calculated), SAL households were more likely to be AROP than nonSAL households, with the average odds ratio varying considerably from 0.9 for Italy to 2.3 for Slovenia. In drawing any conclusions from the trends in the odds ratios for each country, one has to bear in mind the impact of variability in sampling methods, in the actual annual sample, and the use of the household cross-sectional weights, given that the odds ratios are a product of the actual proportions in the 2 x 2 cross tabulations (SAL/nonSAL households x AROP/notAROP). What is however clear from this analysis is that being a SAL household generally increases the odds of being AROP. Further, the trends indicated by these odds ratios do not foresee the likelihood of being AROP as decreasing for SAL households (see Appendix F, pp. 474-489, for graphical analysis). Notably, SAL households compared to nonSAL households not only had higher deprivation scores but also were more likely to be AROP.

5.4.2 Deprivation for SAL and nonSAL households at-risk-of-poverty

The next analysis focused on the level of deprivation experienced by all households whose household equivalised disposable income (HEDI) is less than 60% of the country's median household equivalised disposable income (MHEDI) and therefore

considered to be AROP. This analysis compared the MDI scores for SAL and nonSAL households who are AROP (summarised in Table 5.6 below). Considering aggregate data for all countries, within the subgroup of households AROP, SAL households' MDI average was at a minimum 7.3 points more than the average for nonSAL households. This preliminary breakdown suggests that SAL households within the same income bracket as nonSAL households also experience a higher level of material deprivation as indicated by the MDI.

Similar analysis was carried out for each country over the seven-year spread (see Appendix G, Table G.1, p. 490). The general pattern in most countries is similar to the overall result described above, however with noteworthy variability. For instance, in Bulgaria, one of the countries with the highest MDI mean score, the average difference in the MDI scores between SAL and nonSAL households AROP was a low 3.5 points. At the other end, Denmark had a 15.0 points average MDI difference. The four countries besides Bulgaria with the lowest average difference in MDI scores between SAL and nonSAL households AROP were Cyprus, Finland, Greece and Lithuania; at the other end, the four countries in addition to Denmark with the highest average difference were Austria, Germany, Iceland and the Netherlands. With the exception of Finland, the other four countries with the lowest MDI difference are countries with a high average MDI score, an average of 20.2 points for the five countries, going up to 23.7 points if Finland is excluded. The countries with the highest MDI difference are countries with much lower MDI averages, 8.4 points for all five countries (see Table 5.7 below).

Table 5.6: MDI mean scores difference between SAL and nonSAL households at-risk-of-poverty

Independent Samples Test				
Year	MDI SAL-nonSAL mean difference	99% confidence intervals		statistical significance
		lower	upper	
2013	7.3	7.3	7.4	p < 0.000
2014	8.5	8.5	8.5	p < 0.000
2015	8.0	8.0	8.1	p < 0.000
2016	8.4	8.4	8.5	p < 0.000
2017	8.2	8.2	8.3	p < 0.000
2018	8.3	8.3	8.3	p < 0.000
2019	10.3	10.3	10.4	p < 0.000

Table 5.7: MDI means for countries with lowest and the highest MDI difference for SAL and nonSAL households AROP

Countries with lowest SAL - nonSAL households MDI difference		Countries with highest SAL - nonSAL households MDI difference	
	MDI country mean		MDI country mean
Bulgaria	31.6	Austria	7.9
Cyprus	17.9	Denmark	7.6
Finland	6.3	Germany	9.8
Greece	25.0	Iceland	8.5
Lithuania	20.3	Netherlands	8.4
average	20.2 (23.7 excluding Finland)	average	8.4

Although there are clear exceptions, the above analysis suggests that the deprivation gap between SAL and nonSAL households below the AROP threshold tends to be greater in countries with general lower deprivation rates as measured by the MDI. In other words, as deprivation in a country decreases, the gap between SAL and nonSAL households is more likely to increase or remain the same than it is likely to decrease for households AROP.

The analyses carried out converge towards an emerging picture in which SAL households' deprivation rates decrease in parallel to a decrease in national deprivation; however, they maintain a significant deprivation gap compared to nonSAL households if not experiencing an increased deprivation gap. Moreover, this gap in deprivation measured by the MDI scores is also present amongst households AROP, with a greater gap between AROP SAL households and AROP nonSAL households generally present in countries with the lower MDI country average. These findings suggest that the increased deprivation of SAL households compared to other households does not depend on a country's level of deprivation and that this pattern is also noticeable for households AROP.

5.5 SAL households' income and social transfers

Social transfers are instrumental to European states in fulfilling the overarching welfare state objective of promoting decommodification or, as Esping-Anderson (1990, p. 37) explained it, "the degree to which individuals, or families, can uphold a socially acceptable standard of living independently of market participation"

(Esping-Anderson, 1990, p. 37). The considerable role of social transfers in the income of SAL households was analysed by comparing the percentage contribution of all social transfers, excluding old age and survivor benefits, to the total disposable household income (TDHI) of SAL and nonSAL households. For this analysis, households for which no income was available were not included; however, households with zero income were included if zero income was not an outlier for that particular country. Additionally, some households were listed as having a negative income, either before or after social transfers or in both situations, due to the way this variable is computed by taking into consideration all income components less all taxes and inter-household cash transfers (Eurostat, 2013; 2014; 2016; 2017a; 2017b; 2019a; 2020); these households were also excluded from this analysis as their negative income depicts particular circumstances beyond the scope of this exercise.

Two different approaches were developed to further this analysis. In the first approach, the data was trimmed to exclude outliers by calculating the standardised values (z-scores) for the TDHI and excluding any score that was more than 2.0 s.d. or less than -2.0 s.d. (at country level). Not unpredictably, given the distribution of this variable, there were no units excluded from the sample because of a standardised score for TDHI less than -2.0. In the second approach, a much smaller sample was used by focusing the same analysis on households whose household equivalised disposable income (HEDI) was equal or less than the median of the country (MHEDI). These two approaches complemented each other: the first one focuses on a broader spectrum of households but excludes households whose TDHI is more than two standard deviations from the country mean, irrespective of the size of the household; the second approach takes into consideration household size, as it identifies households by their HEDI, and focuses on households at the lower half of the country MHEDI. The trimming of the data in the first approach was necessary considering that it was based on country means. Similarly, the exclusion of negative income values in both approaches, especially in income values before social transfers, ensured that means of the contribution of social transfers to the TDHI would not be inflated.

The resulting samples are summarised in Table 5.8 and Table 5.9 below, and more details are given in Appendix H (p. 492). In removing households with negative incomes, proportionately more SAL than nonSAL households are being excluded from this exercise. On the contrary, more nonSAL than SAL households are being discounted by trimming off any household with a standardised TDHI z-score of more than 2.0. Correspondingly, proportionately more nonSAL than SAL households are omitted by disregarding all households with HEDI greater than the country MHEDI. The resultant samples reflect an imbalance in the income spread of SAL and nonSAL households with proportionately more SAL households prevalent in the lower end of the household income spread.

Table 5.8: Samples for total disposable household income analysis, trimmed data

	2013	2014	2015	2016	2017	2018	2019
original sample	245,352	247,058	249,101	268,549	279,026	281,732	263,327
negative incomes removed	237,927	239,488	241,488	260,421	270,942	273,888	257,027
after trimming, sample used	229,228	230,575	232,907	251,860	262,263	264,801	249,028
households excluded	16,124	16,483	16,194	16,689	16,763	16,931	14,299
% of original sample excluded	6.57%	6.67%	6.50%	6.21%	6.01%	6.01%	5.43%

Table 5.9: Samples for total disposable household disposable income analysis, HEDI =< MHEDI

	2013	2014	2015	2016	2017	2018	2019
original sample	245,352	247,058	249,101	268,549	279,026	281,732	263,327
negative incomes removed	237,927	239,488	241,488	260,421	270,942	273,888	257,027
HEDI =< MHEDI, sample used	111,011	111,972	113,079	123,366	129,751	132,223	125,531
households excluded	134,341	135,086	136,022	145,183	149,275	149,509	137,796
% of original sample excluded	54.75%	54.68%	54.61%	54.06%	53.50%	53.07%	52.33%

These analyses take into consideration two main income variables, from which a third variable was computed: the total disposable household income (TDHI) which includes the resultant income of a household after paying all taxes and any regular inter-household cash transfers; and the total disposable household income before social transfers (TDHIBST) which excludes all income from any social benefits (including educational and housing benefits) but includes old age and survivor benefits. A new variable was computed for each household with the percentage contribution of social transfers to the TDHI by deducing the TDHIBST from TDHI, giving the value of the income from social transfers, and calculating this amount as

a percentage of the TDHI. This new variable gives the proportion of social transfers in the TDHI of each household. Country means of this variable were examined.

The choice to exclude old age and survivor benefits from the social transfer analysis was guided by the following considerations. Including old age and survivor benefits would significantly increase the gap between TDHI and TDHIBST considering that the bulk of social transfers are contributory pensions. For instance, using the trimmed sample and taking all countries together, in 2018, social transfers excluding old age and survivor benefits constituted 9.1% and 17.8% of nonSAL and SAL TDHI respectively, while when old age and survivor benefits are included the corresponding percentages increased to 27.2% and 59.0%. Using the same dataset and employing a similar breakdown for households with their HEDI =< the country MHEDI, the results are even more pronounced; social transfers excluding old age and survivor benefits constituted 14.8% and 22.9% of nonSAL and SAL TDHI respectively, while when old age and survivor benefits are included these percentages in turn increase to 37.2% and 67.3% respectively. As a consequence of this choice, the subsequent analysis does not reflect any gaps in SAL and nonSAL households' income arising from old age and survivor pensions, which are expected to be substantial considering the general poorer employment income history of disabled persons.

5.5.1 Analysis with trimmed sample

On average, over the 2013-2019 time span, social transfers contributed to 16.5% of the TDHI of SAL households compared to 9.1% of nonSAL households, ranging from 7.6% of the TDHI for SAL households in Greece (lowest) up to 37.6% in Norway (highest), in contrast to 4.0% of the TDHI for nonSAL households in Greece (lowest) up to 15.2% in Ireland (highest). Comprehensively, the contribution of social transfers (always excluding old age and survivor benefits) to the TDHI of all households has decreased between 2013 to 2019 for both SAL households and nonSAL households (1.2% and 1.3% respectively).

Given that the contribution of social transfers to SAL households TDHI is substantially more than the contribution to nonSAL households, social transfers played a major role in reducing the gap in income between SAL and nonSAL

households, a consistent pattern throughout all seven years. On average, social transfers contributed to reducing the gap by 7.3% (of nonSAL TDHI country means), from 2.0% in France up to 19.5% in Norway followed by 14.6% in Netherlands. Over the seven-year period, the impact of social transfers in reducing the gap between SAL and nonSAL households' TDHI shows a minimal downward trend. The full results can be seen in Appendix I (p. 494).

The higher contribution of social transfers in countries like Norway and Netherlands to reducing the gap between SAL and nonSAL TDHI is better understood in the context of the extent of the gap pre and post social transfers. Prior to social transfers, both Norway and Netherlands had, on average, the highest gap between SAL and nonSAL TDHI (43.3% and 44.1% respectively, followed by Sweden which is nearly 10.0% less at 34.3%). Following social transfers, the gap in Netherlands still remains the highest (29.5%) while the gap in Norway continued to be one of the highest (24.8%, trailing Finland and Sweden at 25.5%). In fact, the country average TDHI gap prior to social transfers was strongly associated with the country average TDHI gap after the social transfers ($\tau_b [32] = 0.799, p < .001, bCa\ 99\% \text{ CI } [0.641, 0.909]$); moreover, the country average percentage reduction in the SAL nonSAL TDHI gap was also somewhat associated with the pre social transfers gap, implying that a higher pre social transfers gap was also associated with a greater percentage reduction following social transfers ($\tau_b [32] = 0.372, p = 0.003, bCa\ 99\% \text{ CI } [0.034, 0.662]$). Consequently, in understanding the role of social transfers in improving the income of SAL households compared to nonSAL households, the extent of the gap prior to social transfers has to be factored in. For instance Luxembourg, at the lowest end of the TDHI gap hierarchy, starts with a gap of 9.5%, had social transfers that contribute on average 5.7% to reduce the gap between SAL and nonSAL TDHI, and reduces that gap to 3.8% after social transfers, compared to Norway with the highest pre social transfer gap of 44.3%, reducing the gap by 19.5% with social transfers to a still substantial gap of 24.8% after social transfers (see Table I.5, p. 498, in Appendix I; see also pp. 503-504 for details of correlations).

The final analysis explored whether any association existed between the country average impact of social transfers in reducing the gap between SAL and nonSAL TDHI and the changes in MDI scores for SAL and nonSAL households at country

level. A negative weak correlation was found for both groups, implying that higher impact of social transfers in reducing the gap between SAL and nonSAL TDHI was somewhat associated with smaller decreases in MDI scores for all households (for SAL households, τ_b [32] = -0.381, $p = 0.002$, bCa 99% CI [-0.610, -0.112]; for nonSAL households, τ_b [32] = -0.372, $p = 0.009$, bCa 99% CI [-0.591, -0.002]). No association was found between the impact of social transfers in reducing the gap between SAL and nonSAL TDHI and changes in the MDI score differences between SAL nonSAL households (see more detailed results in Appendix I, pp. 505-507).

One may tentatively interpret these results as implying that while social transfers are key to reducing the income gap between SAL and nonSAL households, their impact in reducing deprivation for all households cannot be ascertained. It is not those countries that are proportionately spending most on social transfers that seem to be reducing relative deprivation (as measured by the MDI when comparing SAL and nonSAL household scores). Moreover, the larger proportional share SAL households get of social transfers is not associated with a reduction in the deprivation gap between the two groups of households. This analysis suggests that in determining the degree of social transfers' effectiveness to achieve decommodification, one cannot rely solely on the input that goes into disability benefits and other social transfers. Interesting, Morris (2021), in a study of disability benefits across nine European countries (Denmark, Germany, Sweden and Switzerland classified as Nordic; Austria, Belgium, France, Italy and Spain classified as Residual) spanning a ten-year period, found that although there were higher rates of deprivation amongst recipients of disability benefits in 'Residual' countries, "the relative odds of hardship for a disability benefit recipient in the Nordic countries are, on average, higher than the relative odds of deprivation for disability benefit recipients in the Residual countries" (p. 25). Conceivably, while social transfers are critical in reducing the strength of the link between poverty and disability, they are less effective in reducing the deprivation gap between households supporting disabled people and other households.

5.5.2 Analysis with households whose HEDI =< country MHEDI

A similar analysis to the above was repeated with households whose HEDI is equal or less than the country MHEDI (see details in Appendix I, pp. 499-502). This analysis focused on the lower half of the household income spread with the size of the household factored in the sample through the equivalisation of the household income. All countries considered, over the seven-year period, social transfers contributed 19.0% to the TDHI of SAL households, ranging from 8.5% in Greece to 41.5% in Netherlands. This component of social transfers represents 2.5% more than in the previous analysis. For nonSAL households, the overall contribution of social transfers to their TDHI was 13.6% with a low 6.5% in Greece to a high 25.3% in Ireland. This component of social transfers represents 4.5% more than in the previous analysis. For this subgroup of households, the difference in the average proportion of social transfers between SAL and nonSAL households is less. This factor is understandable considering the substantial smaller gap between SAL and nonSAL households prior to social transfers for the subgroup of households (households whose HEDI falls in the lower half of the household income spread) being considered (see Table 5.10 below).

Table 5.10: Average differences in TDHI between SAL and nonSAL households, before and after social transfers (2013-2019)

	TDHI difference	
	Trimmed Sample	HEDI =< MHEDI
Before social transfers	23.3%	16.1%
After social transfers	10.9%	3.7%
TDHI difference is calculated as follows: (nonSAL TDHI – SAL TDHI)/nonSAL TDHI as a percentage.		

In general, these averages follow a somewhat similar pattern to the previous analysis, with the contribution of social transfers being proportionately higher across the board, not surprising considering that the subgroup of households used in this analysis are on the lower half of the household equivalised income spectrum to whom cash transfers (in this analysis excluding contributory old age and survivor benefits) are primarily addressed (see for instance Verbist and Matsaganis, 2014). There are, however, particular factors that emerge by focusing on households with less income:

1. For households in this lower income half subgroup, the difference in the proportional share SAL households receive from social transfers compared to nonSAL households is less (5.4% vs 7.5%);
2. Although, the overall EU gap between SAL and nonSAL TDHI is reduced considerably after social transfers to 3.7%, this numerical aggregate obscures the large spectrum of variability between different countries, from Austria, Bulgaria, Spain, Luxembourg and Romania, in which SAL households have a higher TDHI after social transfers (3.4%, 3.4%, 3.1%, 3.1%, and 2.5%) to Finland, Netherlands, Slovenia, Sweden and Croatia, in which the TDHI gap remains significant (15.9%, 15.8%, 15.6%, 11.7%, and 10.1% respectively);
3. Similar to the previous analysis, the higher contributions of social transfer in reducing the gap between SAL and nonSAL TDHI are associated with the differences prior to the social transfers, but not to the post social transfers gap;
4. For this subgroup of households, the gap between SAL and nonSAL TDHI is less prior to social transfers (10.9% vs 23.3%) and correspondingly after social transfers (3.7% vs 16.1%). No association was found between the difference in SAL and nonSAL TDHI after social transfers and the difference in their MDI scores;
5. Exceptionally, in Finland and France the gap between SAL and nonSAL TDHI increases marginally after social transfers, an average of 1.6% and 0.6% respectively over the seven years. However, the general trends are in opposite directions, with Finland moving towards a reducing gap and France towards an increasing gap.

Given the broad spectrum evident in the different countries, it is difficult to draw any general conclusions. Tentatively, one may infer that while social transfers are a major component of household income, and increasingly so in lower income households, their impact in addressing deprivation may be conditioned by a country's level of pre social transfers inequality. Also, while in a few countries SAL households have a higher average TDHI than nonSAL households after social transfers, this higher income does not translate itself into lower deprivation (as measured by country aggregate scores for MDI). For instance, Bulgaria and Netherlands had a similar MDI gap average over the seven years, 10.4 points (although the average level of deprivation for SAL households in both countries is

not comparable, 41.1 points for Bulgaria and 18.0 points for the Netherlands). Yet, after social transfers in Bulgaria, SAL households TDHI is 3.4% better than that of nonSAL households while in the Netherlands the balance is 15.85% in the opposite direction. Conversely, Finland, with the highest post social transfers difference between SAL and nonSAL TDHI, 15.8%, has a low SAL nonSAL MDI difference of 5.9 points, comparable to Luxembourg's 5.5 points in which the post social transfers TDHI average favoured SAL households by 3.1%. Differences in TDHI between the two groups of households whose HEDI falls in the bottom half of the income spectrum do not seem to explain differences in deprivation between the same groups at comparable country level (see Appendix I, Table I.22, p. 515, for more details). Supporting this conclusion is the fact that average reduction in gaps between SAL and nonSAL TDHI were not associated with any changes in MDI scores or in differences in MDI scores between SAL and nonSAL households. The only clear associations that resulted were one between the SAL and nonSAL TDHI gap before and after social transfers (τ_b [32] = 0.516, $p < 0.000$, bCa 99% CI [0.141, 0.755]) and a weaker association between the SAL and nonSAL TDHI gap before social transfers and the average reduction in that difference as a result of social transfers (τ_b [32] = 0.457, $p < 0.000$, bCa 99% CI [0.076, 0.759]). Details of corresponding correlations can be found in Appendix I (pp. 509-513).

An additional interpretation of the above analyses regarding the effect of social transfers on the relative deprivation of SAL households compared to other households is that these transfers may not be favouring SAL households in a considerable way; the gap in deprivation SAL households experience is neither eliminated nor substantially reduced by these transfers. To address this deprivation gap, it may be necessary to increase significantly the generosity of social transfers or pursue other complementary measures.

5.6 A more detailed analysis for 2018

Following the comparative analysis of the general trends in the level of material deprivation of SAL households as measured by the MDI over the 2013 to 2019 period, a more detailed analysis was carried out for 2018. The choice of using the 2018 dataset for a more in-depth analysis was taken on the basis of the 2018 data

including Iceland and the United Kingdom (UK). Given the UK's regional dimension, the UK data is an important factor in the multilevel analysis carried out further on in this study. Also, Iceland was a country that managed to narrow the deprivation gap between SAL and nonSAL households. (The details of the 2018 dataset can be seen in Appendix C, pp. 432-435.)

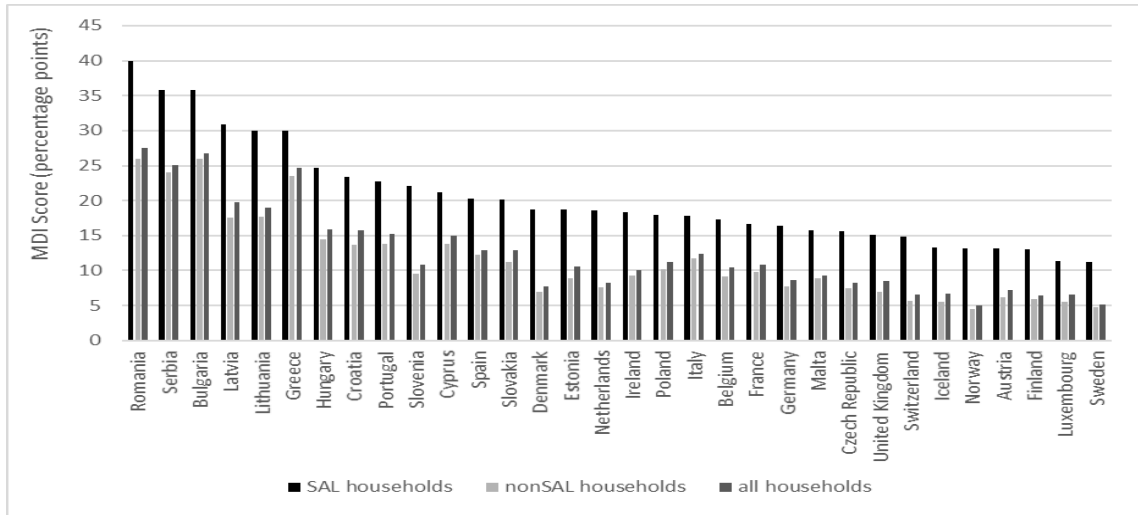


Figure 5.3: MDI scores for SAL households, nonSAL households and all households, by SAL households MDI descending (2018)

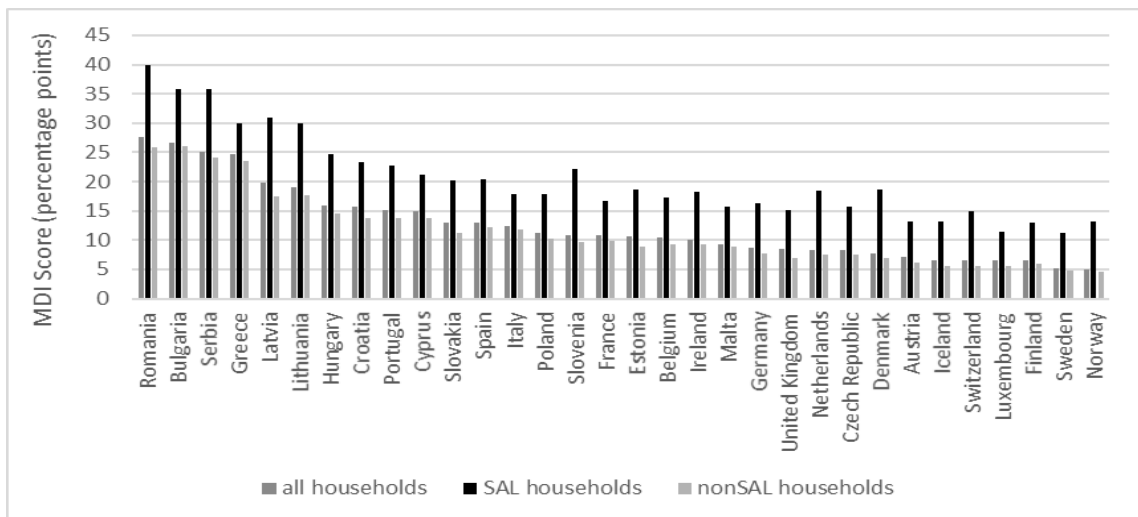


Figure 5.4: MDI scores for SAL households, nonSAL households and all households, by country MDI average for all households descending (2018)

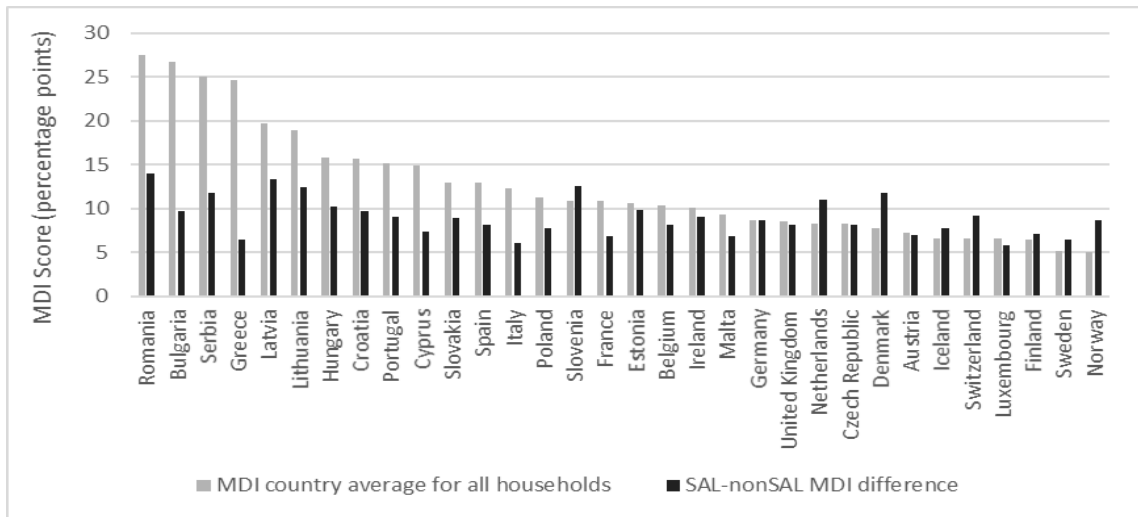


Figure 5.5: Difference in MDI scores between SAL households and nonSAL households compared to the country MDI average for all households, by all households MDI descending (2018)

Similar to all the years under consideration in this study, the deprivation in SAL households in all countries for 2018 was considerably more when compared to nonSAL households or to the average of all the households (see Figure 5.3 above). SAL households' deprivation generally decreased with country MDI average (see Figure 5.4 above). However, the difference between SAL and nonSAL households MDI score averages did not follow the pattern of country average MDI (see Figure 5.5 and Figure 5.6 below). Consequently, the difference in average MDI scores between SAL and nonSAL households as a percentage of country MDI average generally increased as a country's MDI average decreased (see Figure 5.7 below).

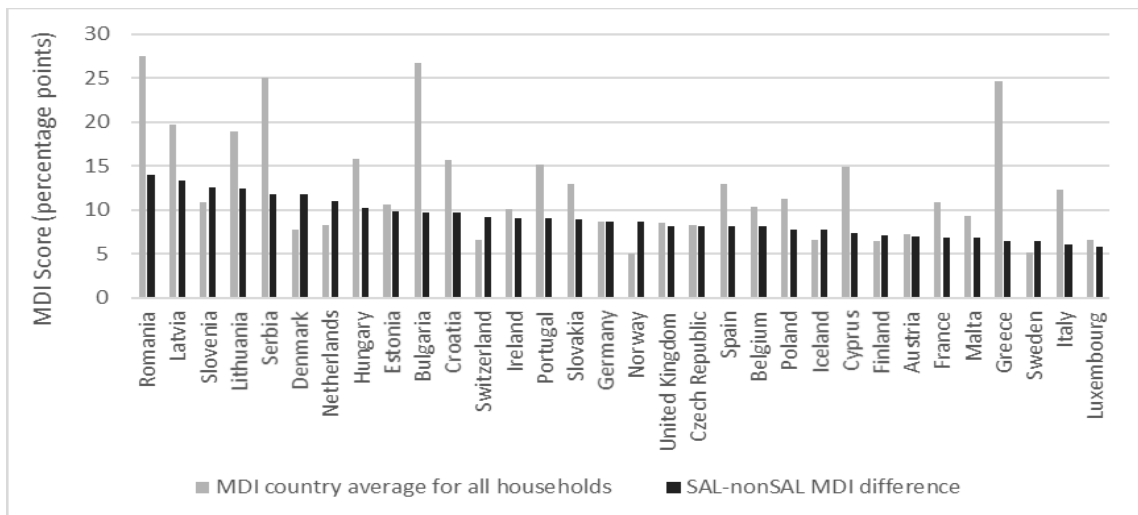


Figure 5.6: Difference in MDI scores between SAL households and nonSAL households compared to the country MDI average for all households, by SAL-nonSAL MDI difference descending (2018)

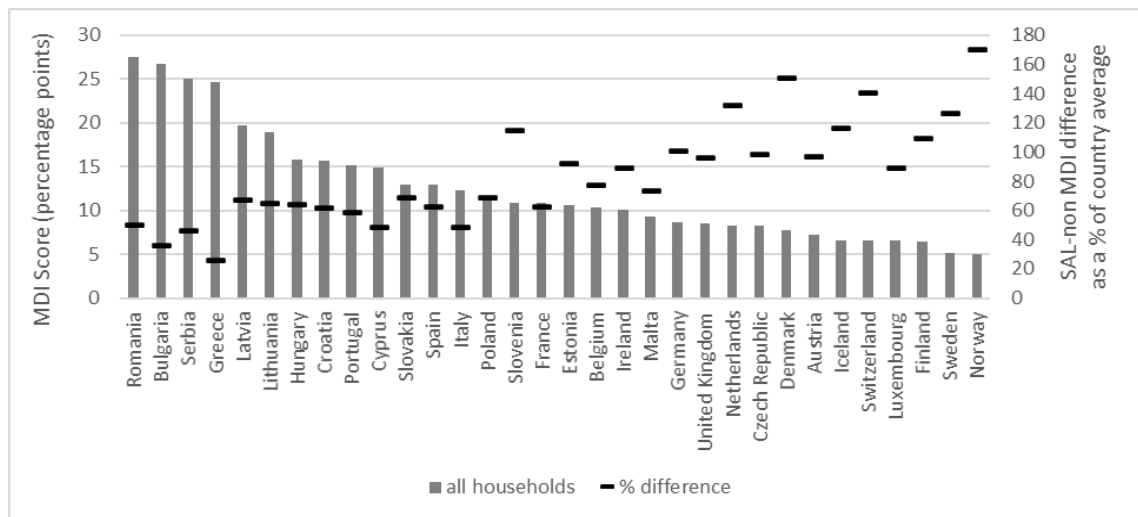


Figure 5.7: MDI country mean scores for all households compared to the difference in MDI scores between SAL and nonSAL households as a percentage of country MDI average for all households, by all households MDI descending (2018)

The exploration carried out so far points towards a consistent pattern of comparative compounded deprivation, year after year, for SAL households in all countries, and not limited to any particular bracket of the income spectrum; SAL and nonSAL households both below and above the AROP threshold exhibited parallel deprivation differentials. This initial analysis aimed at understanding the differential distribution of deprivation scores comparing households supporting disabled persons with other households. Focusing on 2018 and grouping the MDI scores, the compounded deprivation pattern is clearly evident in the percentage of households in each MDI score category. For instance, at the higher end of the MDI scores, 3.0% of SAL households compared to 1.0% of nonSAL households had an MDI score of 61 points or more. For households considered to be AROP, the disparity persists, with 7.6% of SAL households compared to 3.9% of nonSAL households having an MDI score of 61 points or more. This analysis further distinguished between SAL households including one adult with severe activity limitation (SAL₁) from households including two or more adults with severe activity limitation (SAL₊), and the pattern of compounded deprivation increases for households with more than one adult with severe activity limitation (see Figure 5.8 and Table 5.11, p. 229).

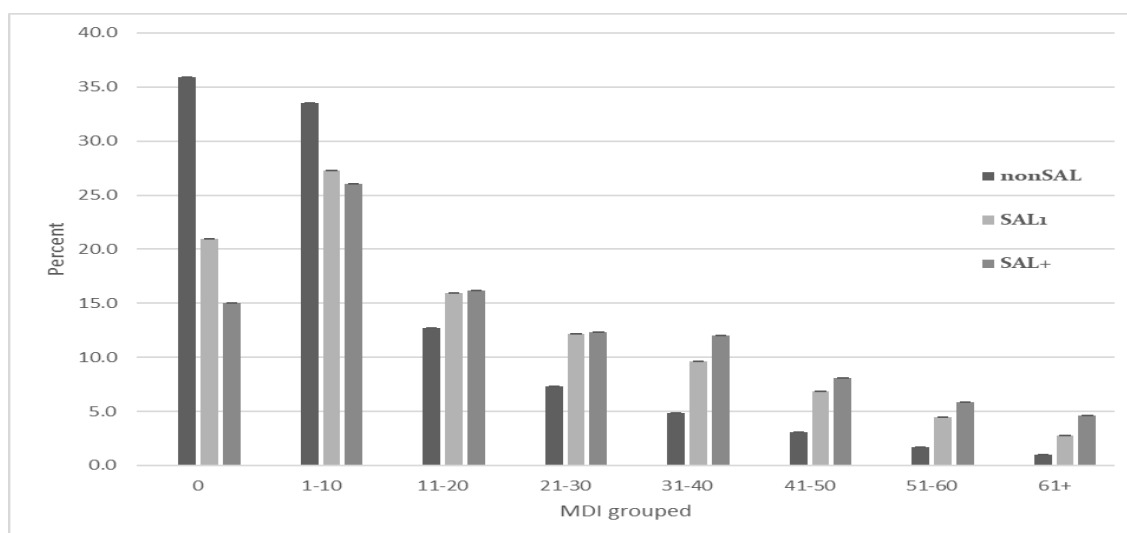


Figure 5.8: SAL+, SAL1 and nonSAL households by MDI grouped scores (full sample)

Table 5.11: Percentages of SAL+, SAL1 and nonSAL households in different categories of MDI scores for full sample and four other subsamples

Full Sample									
MDI score	0	0-10	11-20	21-30	31-40	41-50	51-60	61+	Total
SAL+ (%)	35.9	33.5	12.7	7.3	4.8	3.1	1.7	1.0	100%
SAL1 (%)	20.9	27.3	15.9	12.2	9.6	6.8	4.5	2.8	100%
nonSAL (%)	15.0	26.0	16.1	12.3	12.0	8.1	5.8	4.6	100%
Households at Risk of Poverty (HEDI < 60% of MHEDI)									
MDI Score	0	0-10	11-20	21-30	31-40	41-50	51-60	61+	Total
SAL+ (%)	15.6	23.4	17.6	13.6	11.3	9.0	5.7	3.9	100%
SAL1 (%)	7.2	15.4	16.0	16.6	13.9	13.4	10.1	7.3	100%
nonSAL (%)	6.5	12.0	14.5	14.3	17.0	10.8	13.9	11.0	100%
Households not at Risk of Poverty and HEDI <= MHEDI									
MDI score	0	0-10	11-20	21-30	31-40	41-50	51-60	61+	Total
SAL+ (%)	27.0	33.7	17.2	9.9	6.2	3.6	1.7	0.7	100%
SAL1 (%)	17.7	27.0	18.6	13.8	11.0	6.4	3.7	1.7	100%
nonSAL (%)	11.7	29.3	16.4	13.4	12.9	9.0	3.9	3.4	100%
Households HEDI > MHEDI									
MDI Score	0	0-10	11-20	21-30	31-40	41-50	51-60	61+	Total
SAL+ (%)	48.0	36.8	8.5	3.6	1.8	0.8	0.4	0.1	100%
SAL1 (%)	34.3	35.9	12.9	7.2	5.0	2.6	1.3	0.7	100%
nonSAL (%)	26.2	32.3	17.1	9.2	6.9	4.8	2.2	1.3	100%
Households without Low Work Intensity									
MDI Score	0	0-10	11-20	21-30	31-40	41-50	51-60	61+	Total
SAL+ (%)	37.2	34.9	12.6	6.9	4.1	2.4	1.2	0.7	100%
SAL1 (%)	21.7	29.4	15.3	12.4	9.5	6.1	3.6	2.0	100%
nonSAL (%)	11.9	26.1	16.4	10.7	15.8	9.1	5.8	4.1	100%

The same pattern emerges when subsamples from the income spectrum were analysed, implying that SAL households in 2018 experienced comparative higher levels of deprivation across the board. Further, households without low work intensity (total hours worked above the 20% of the household’s total potential) also exhibited similar patterns of MDI scores. Then again, the fact that a household did not have low work intensity does not imply similarity in work intensity patterns; SAL households without low work intensity may still have worked less than nonSAL households in the reference period of the survey data.

The use of the MDI serves the purpose of comparing the level of deprivation between SAL and nonSAL households, across different countries, and throughout the seven years covered. However, by using the MDI, the nature of the deprivation is obscured. A detailed analysis of the available data by breaking it down to the items of the MDI provides an insight into the deprivation picture of SAL households.

In the following section, the analysis zooms into identifiable factors that contribute more than others to the increased deprivation experience of SAL households, within the limitations of the measures available in the EU-SILC data.

5.6.1 An overview of deprivation in 2018

In this preliminary analysis, the frequencies of all the MDI 25 deprivation items were compared for SAL₁, SAL₊ and nonSAL households (Figure 5.9 below).

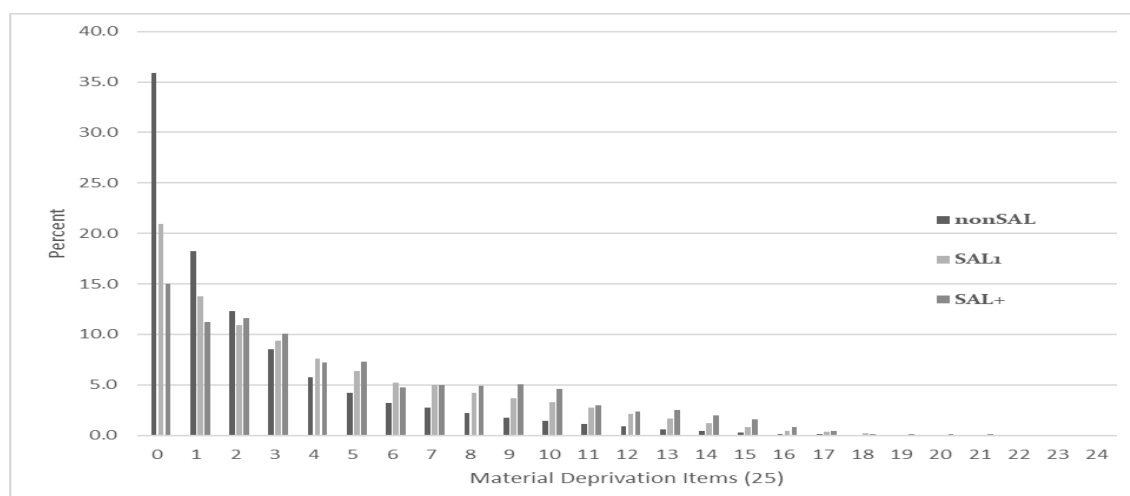


Figure 5.9: SAL₊, SAL₁ and nonSAL households grouped by number of deprivation items.

The general picture is one in which households with the presence of an adult or adults with severe activity limitation are proportionately more likely to experience a higher number of deprivation items than other households.

Moreover, the frequency of most deprivation items was also higher for SAL+ than for SAL₁ households. Over half SAL+ households and nearly half SAL₁ households did not have the capacity to face an unexpected required expense or afford a week-long annual holiday away from home. These two items were also the most frequent deprivation manifestations in nonSAL households but at a substantially less incidence (see Table 5.12, below). Nearly 25% more SAL than nonSAL households could not afford the annual holiday and over 19% more could not face an unexpected expense.

Using crosstabulations for these two most frequent deprivation manifestations, the percentage of SAL₁ and SAL+ experiencing these deprivations was found to be substantially higher than for nonSAL households. The standardised residuals confirmed that SAL₁ and SAL+ households are overrepresented in households experiencing a lack of capacity to face an unexpected required expense and who do not afford a week-long holiday away from home and underrepresented in households who do not experience these deprivations. The Pearson Chi-Square was significant at the 99% confidence level, therefore confirming an association between the presence of an adult with severe activity limitation in a household and a household experiencing these deprivation circumstances (see details in Appendix J, pp. 516-517).

Table 5.12: The percentage of SAL and nonSAL households experiencing the two most frequent deprivation manifestations.

	SAL ₁ (%)		SAL+ (%)		nonSAL (%)	
	deprived	not deprived	deprived	not deprived	deprived	not deprived
Does not have capacity to face an unexpected required expense	48.4	51.6	52	48	30.8	69.2
Does not afford a week-long annual holiday away from home	47.8	52.2	52.8	47.2	25.4	74.6

These differences are not only statistically significant but also substantial, as indicated through the calculated odds ratios, a good measure of the effect size and a useful summary of this focused comparison between the groups. The odds of SAL+ and SAL₁ households being deprived from the capacity to face an unexpected required expense is 2.4 times and 2.1 times higher than that of nonSAL households. The same analysis was carried out for three subgroups of households: households whose HEDI ≤ MHEDI; households whose HEDI > MHEDI; and households at-risk-of poverty (see Table 5.13, below). In all analysis, the odds of a SAL+ or a SAL₁ household facing these two deprivation situations was more than that of nonSAL households, irrespective of the income group represented by the sample being analysed. A SAL household earning more than the median of all the household equivalised disposable incomes in any country was still more likely not to have the capacity to face an unexpected required expense, or be able to afford a week-long annual holiday away from home than a nonSAL household. These findings also support the emerging picture of households supporting disabled persons experiencing more deprivation than other households within the same income bracket.

Table 5.13: Odds ratio for SAL vs nonSAL households experiencing the two most frequent deprivation manifestations

	odds ratios SAL ₁ vs nonSAL				odds ratios SAL+ vs nonSAL			
	Full sample	ARPO	HEDI ≤ MHEDI	HEDI > MHEDI	Full sample	ARPO	HEDI ≤ MHEDI	HEDI > MHEDI
Does not have capacity to face an unexpected required expense	2.1	1.9	1.7	2.0	2.4	2.2	1.7	2.7
Does not afford a week-long annual holiday away from home	2.7	2.2	2.1	2.9	3.3	2.9	2.4	3.7

Moreover, these odds ratios suggest an interesting picture. In the higher income brackets, the odds of SAL households not having the capacity to face an unexpected required expense or, more so, not being able to afford a week-long annual holiday, increase. This increase in the odds ratio means that the likelihood of a SAL household in the HEDI > MHEDI income bracket experiencing these deprivations while a nonSAL not experiencing them is more in the higher income bracket than in the lower income brackets, clearly because in the lower income brackets the

incidence of these deprivation circumstances in nonSAL households is greater. This consideration suggests that either deprivation for SAL households decreases at a slower rate with increase in income than it does for nonSAL households, or that in the HEDI > MHEDI income bracket SAL households earn less than nonSAL households, or both. This issue is explored further in Section 5.6.3 below.

Beyond the two most frequent manifestations of deprivation, a close comparative look at all the deprivation measures suggests that the patterns of deprivation across different groups are rather similar in nature but different in their incidence (see Figure 5.10 below). This emerging picture is understandably limited by the measures being used. These measures are not calibrated to tap into specific experiences of deprivation that may be particular to SAL households. However, when a household's deprivation involves a lack of capacity to face unexpected required expenses or to make both ends meet, the particular needs of SAL households will inevitably also be affected. It may also be argued that the different measures are a reflection of a common theme, a disparity between a household's income and the household's expenditure. In this respect, the inability to afford a washing machine, a mobile or fixed line, or a colour television, although not a frequent measure of deprivation, may indicate extreme circumstances of deprivation; if a household cannot even afford one of these items then its situation may be one of significant deprivation. However, the incidence of these specific deprivations are extremely low to allow for any meaningful analysis.

The above analysis used the aggregated data. In order to examine whether similar patterns held at country level, a similar analysis was carried out for each of the 32 countries. At country level, the general patterns of deprivation by the 25 MDI items show similarities, especially at the most frequent and least frequent items. Looking at each of the 32 countries, for both SAL and nonSAL households, the most common deprivation experiences were the lack of capacity to face unexpected required expenses (15 SAL and 19 nonSAL – number indicates the amount of countries), not able to afford a week-long annual holiday away from home (12 SAL and 4 nonSAL), and the inability to make both ends meet (2 SAL and 3 nonSAL), not affording to replace worn-out furniture (2 SAL and 2 nonSAL), household dwelling having too much noise from neighbours or outside (3 nonSAL) and household dwelling having

problems related to pollution (1 nonSAL). For SAL households, the top 10 most frequent deprivation situations included eight that reflect affordability and two related to the household's dwelling; for nonSAL households, six reflect affordability and four relate to the household's dwelling (see Appendix J, Table J.1, p. 518).

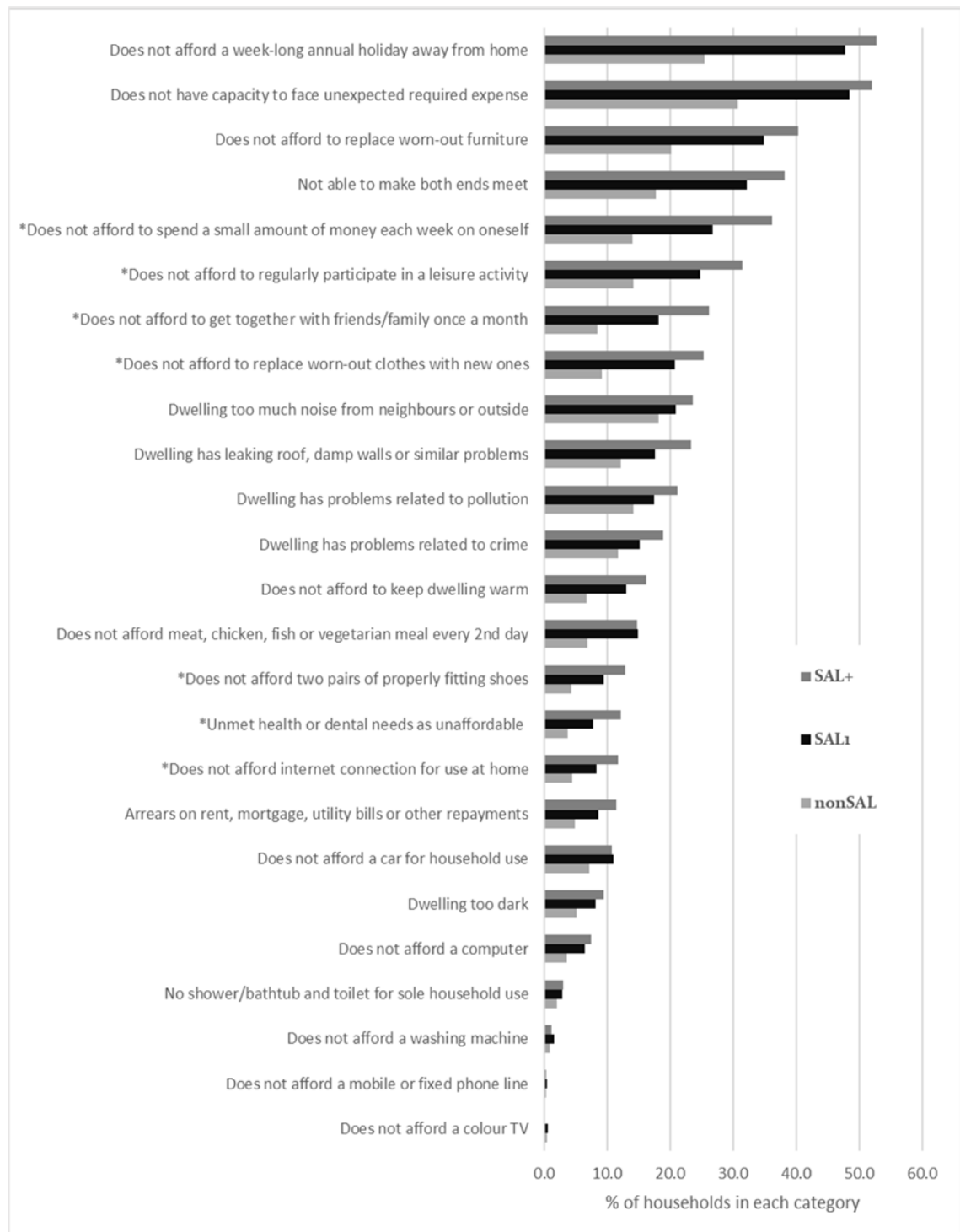


Figure 5.10: Percentages of SAL+, SAL1, and nonSAL households experiencing the 25 MDI deprivation occurrences, listed by frequency of SAL+ households (*at least one adult in household)

Although analysing each country's deprivation frequencies is beyond the scope of this analysis, three points are noteworthy:

- Deprivation items that are directly the result of a household not having the necessary disposable income feature higher in countries with higher deprivation rates. For instance, the top ten most frequent items in Romania, Bulgaria and Serbia for both SAL and nonSAL households are such items (with one exception for Romania, the tenth most frequent item for nonSAL items was households not having a shower/bath and toilet for the sole use of the household);
- There were no discernible differences in the most frequent deprivation items that can explain those countries with the highest and the lowest 2018 MDI score differences between SAL and nonSAL households, all sharing at least eight common items in the first 10 most frequent items. SAL household items not in the top 10 nonSAL households list are primarily affordability deprivation items while nonSAL household items not in the top 10 of SAL households deprivation list are primarily deprivation items related to the household dwelling. The above analysis suggests that the SAL-nonSAL MDI score differences are likely resulting from a higher occurrence of the deprivation items rather than from a different kind of deprivation. However, some deprivation items related to affordability, more frequent in SAL households compared to household dwelling items in nonSAL households, may further contribute to the difference between SAL and nonSAL households, bearing also in mind the weighting of the MDI (see details in Appendix J, Table J.2 & Table J.3, pp. 519-520);
- Curiously, in Norway, with the lowest MDI score in 2018 but a SAL-nonSAL MDI difference of 8.6 points, the sixth most frequent item of deprivation for SAL households was the presence of an adult who could not afford to replace worn out clothes with new ones while for nonSAL households, this item was down in the 17th place. A similar occurrence was found in Switzerland with this item being the 8th for SAL households and the 15th for nonSAL households.

Concluding this detailed overview of deprivation in 2018 for SAL households juxtaposed against nonSAL households, one may tentatively deduce that the 25 items used in this study suggest a higher prevalence of deprivation in SAL

households, across the whole income spectrum, in all countries, and following general similar patterns. SAL households are minimally more likely to show patterns of deprivation in items that reflect lack of affordability. However, there is nothing in the above analysis that suggests substantially different patterns of deprivation between the two categories of households being compared. Yet, the intensity of deprivation in SAL households is clearly considerably more than that of other households.

5.6.2 SAL households' deprivation and country deprivation

We know from previous analysis that the deprivation levels of SAL households parallel the general deprivation in a country (sec. 5.3 and Table 5.4 above) and that the general deprivation in a country reflects its standard of living (Łuczak and Kalinowski, 2020). Predictably, in 2018, SAL households in Serbia had one of the highest MDI averages (35.8 points) while those in Luxembourg had one of the lowest MDI averages (11.4 points); amongst the 32 countries being researched, Serbia had the lowest GDP per capita 2016-2018 average, 39 in Purchasing Power Standards (PPS), while Luxembourg had the highest, 265 in PPS (Eurostat, 2021c).

The above suggests that a country's good economic performance can benefit households supporting disabled persons as well as other households, and as the economic performance improves deprivation levels tend to decrease for both groups. Yet, this association does not mean that the relative deprivation standing of households supporting disabled persons improves compared to other households. In order to examine this issue, two sets of correlations were estimated to study any association between SAL household deprivation, country deprivation and economic performance (see details in Appendix J, Table J.4 to Table J.8, and Figure J.1 to Figure J.5, pp. 521-525). In the first set of correlations, the SAL households MDI average for 2018 and the difference between SAL and nonSAL households MDI average were correlated with the country MDI average. A strong positive association was found between SAL households MDI and country MDI average ($\tau_b [32] = 0.810, p = 0.000, bCa\ 99\% \text{ CI } [0.598, 0.933]$). The relationship between the difference in MDI scores for SAL and nonSAL households with the country MDI average was a weaker one, with confidence intervals crossing the zero threshold for what is considered to be

an important effect ($\tau_b [32] = 0.323, p = 0.009, \text{bCa } 99\% \text{ CI } [-0.042, 0.627]$). In the second set of correlations, the country MDI average, the SAL households MDI average, and the SAL-nonSAL MDI difference were correlated with the GDP per capita in PPS for each country (GDPPC-PPS). Both the country MDI average and the SAL households MDI average were moderately negatively associated with the GDPPC-PPS with satisfactory confidence intervals (for country MDI average, $\tau_b [32] = -0.714, p < 0.001, \text{bCa } 99\% \text{ CI } [-0.849, -0.532]$; for SAL MDI average, $\tau_b [32] = -0.629, p < 0.001, \text{bCa } 99\% \text{ CI } [-0.800, -0.395]$). The relationship between SAL-nonSAL MDI difference and the GDPPC-PPS was weak and the confidence interval includes a zero ($\tau_b [32] = -0.246, p = 0.048, \text{bCa } 99\% \text{ CI } [-0.555, 0.111]$).

Although the inclusion of a measure of subjective economic stress in the MDI (ability to make both ends meet) may attenuate the relationship between deprivation and GDP measures (Whelan and Maître, 2021), the above analysis showed a substantial relationship between the MDI and the country's economic indicator. It is possible that without the subjective economic stress measure, the relationship would have been stronger. While the deprivation of SAL households, as indicated by the MDI scores, was clearly associated with country level of deprivation, the country level of deprivation is not a good predictor for the difference in the deprivation between SAL and nonSAL households in that country. Correspondingly, a country's economic performance is a clear predictor of country deprivation and SAL household deprivation, but not a reliable predictor of the difference in deprivation between SAL and nonSAL households. Similar to previous findings, the outcomes of the above analyses for 2018 continue to suggest that the level of deprivation of households with an adult member having severe activity limitation reflects the level of country deprivation; however, SAL households generally remain at a notable deprivation disadvantage irrespective of economic progress or decrease in deprivation registered in any country. The deprivation gap between SAL and nonSAL households does not appear to decrease with improved economic performance or decrease in overall country deprivation.

5.6.3 Deprivation of households earning above median income

The previous analysis looking at the odds ratio of SAL households compared to nonSAL households experiencing the two most frequent manifestations of deprivation gave higher odds ratios for SAL households in the upper income brackets. Even though SAL households in the top half of the equivalised income spectrum have lower MDI scores, their odds ratio of not having the capacity to face an unexpected required expense, or not being able to afford a holiday away from home, were higher than those for SAL households with lower income. This finding was further analysed at country level in an attempt to understand the nature of deprivation experienced by SAL households who are not considered to be AROP. For this analysis two groups of SAL and nonSAL households were contrasted: households whose HEDI falls between 70% of the MHEDI and the MHEDI, and separately those households whose HEDI falls between the MHEDI and 1.4 times the MHEDI. These income brackets were chosen to avoid households who are just above the poverty threshold (60% of MHEDI) and to facilitate the comparison with two groups comparable in size.

The first analysis looked at the general trends within the two full sub-samples, comparing nonSAL, SAL₁ and SAL₊ households. This analysis was followed with a more detailed analysis at country level comparing nonSAL and SAL households.

Focusing on the ten most frequent items of deprivation, using crosstabulations and calculating the odds ratios comparing the likelihood of SAL₁ and SAL₊ households being found with a deprivation occurrence vis-à-vis nonSAL households, the emerging general picture is one in which on most measures, SAL households in the higher income brackets have higher odds ratios than similar households in the lower income brackets when both are compared to nonSAL households in their respective income brackets (see Table 5.14 below).

Table 5.14: SAL₁ vs nonSAL and SAL₊ vs nonSAL odds ratio for the 10 most frequent items of deprivation, for sub-sample HEDI greater than 70% of MHEDI but less than or equal to the MHEDI, and sub-sample HEDI greater than the MHEDI but less than or equal to 140% of the MHEDI.

MDI deprivation item	odds ratios			
	odds ratios SAL ₁ vs nonSAL		odds ratios SAL ₊ vs nonSAL	
	0.7 x MHEDI < HEDI <= MHEDI	MHEDI > HEDI <= 1.4 x MHEDI	0.7 x MHEDI < HEDI <= MHEDI	MHEDI > HEDI <= 1.4 x MHEDI
Does not afford a week-long annual holiday away from home	2.1	2.7	2.3	3.2
Does not have the capacity to face unexpected required expenses	1.6	1.7	1.7	2.1
Does not afford to replace worn-out furniture	1.7	1.9	1.9	2.5
Not able to make both ends meet	1.7	2.2	2.1	3.3
*Does not afford to spend a small amount of money each week on oneself	1.7	2.3	3.0	2.4
*Does not afford to regularly participate in a leisure activity	1.5	2.1	2.1	2.3
*Does not afford to replace worn out clothes with new ones	2.2	2.9	2.5	3.7
Household dwelling too much noise from neighbours or outside	1.1	1.1	1.3	1.3
Household dwelling has leaking roof, damp walls or similar problems	1.3	1.4	1.8	2.1
*Does not afford to get together with friends/family once a month	2.1	2.1	3.4	3.4

*At least one adult in household.

The percentage of SAL₁ and SAL₊ households experiencing each of the deprivation items was found to be significantly and substantially higher than nonSAL households for both income groups, with the gap being even more pronounced in the higher income group. The standardised residuals confirm that SAL₁ and SAL₊ households are overrepresented in households experiencing all these deprivations and underrepresented in households that do not experience them. In all cases, the Pearson Chi-Square was significant at the 99% confidence level, confirming an association between the presence of an adult with severe activity limitation in a household and the household experiencing these deprivation measures (see details in Appendix J, pp. 526-545). The only exceptions to the general pattern were the following:

- SAL₊ households in the higher income group had lower odds ratio than SAL₊ households in the lower income group in having a household member who

does not have a small amount of money each week to spend on oneself when compared to nonSAL households;

- There was no difference between SAL+ households from both income groups in their likelihood of having an adult member who could not afford to get together with friends or family at least once a month;
- There was no difference between SAL households across income groups on their likelihood of having a household dwelling with too much noise from neighbours or outside. Moreover, SAL households were only minimally more likely to experience this deprivation compared to nonSAL households. Interesting, this one deprivation in the top 10 list does not directly depend on affordability, although a household's financial means does impact where a household lives.

Breaking down the above analysis by country, the picture becomes less straightforward. In this analysis, the odds ratios comparing the likelihood of finding SAL vs nonSAL households with the 10 most frequent MDI deprivation circumstances were calculated for each country, looking at both sub-samples separately and comparing their relevant odds ratio. The variability is difficult to make sense of. For instance, in Finland, except for the lack of affordability of an annual holiday (item 1) and living in a noisy neighbourhood (item 8), the odds of SAL households with more income were less than the odds of SAL households in the lower income group. At the other extreme, SAL households in Denmark who earn more than the MHEDI but less than 140% of the MHEDI were more likely to experience all the 10 top deprivation items (compared to nonSAL households) than were SAL households in the lower income group. The countries that did not see an increase in the odds ratio for the higher income group were Finland, Slovenia, Netherlands, Croatia and Austria, while at the other end there are Denmark, Switzerland, Norway, Czech Republic and Sweden. On the other hand, if one sums the odds ratio differences between the two sub-samples, items 2, 8 and 9 are the items in which there is least difference in the odds of the two SAL household groups compared to their respective nonSAL households, while items 7 and 10 are the ones with the largest difference (see Appendix J, Table J.9, p. 546 for details).

It is difficult to draw any definite conclusions from the above analyses. Clearly, Finland stands out as it does not follow the aggregate pattern. So do, to a lesser degree, seven other countries. However, the leaning is more towards a greater likelihood of finding higher income SAL households rather than lower income SAL households with a deprivation item, always in comparison to the nonSAL households. This resultant increase in odds ratio may reflect two scenarios. In the first scenario, this higher ratio happens not because of a higher proportion of SAL households experiencing the deprivation but because of a decrease in the nonSAL households experiencing the same item. For instance, the lower income SAL subgroup in Czech Republic experiencing item 7 is split 90.9% no and 9.1% yes, while the higher income SAL subgroup is split 91.7% no and 8.3% yes. Still, because of a larger decrease in the percentage of nonSAL households experiencing item 7 (from 4.1% to 1.5%), the odds ratio increases from 2.3 for the lower income SAL group to 5.8 for the higher income SAL households. In other less frequent situations, there is an unexplainable increase in the proportion of SAL households experiencing the deprivation item. Again, focusing on item 7 and looking at Denmark, the percentage of SAL households experiencing the deprivation increases from 11.0% to 22.8% from the low-income group to the higher income SAL group. This increase, together with a corresponding change in the opposite direction for the nonSAL households (from 6.4% to 2.3%) results in a corresponding increase in the odds ratio from 1.8 to 12.8. However, in the majority of cases, this increase in odds ratio results from a larger percentage decrease in the nonSAL households experiencing the deprivation. Whatever the reason, SAL households in the upper income brackets are, in many instances, experiencing a higher level of relative deprivation to comparable nonSAL households. In other words, comparable income for SAL and nonSAL household is not associated with equivalent levels of deprivation, with SAL households experiencing compounded levels of deprivation for comparable household income. Even at the higher income bracket, a deprivation gap which is likely to contribute to a quality-of-life gap is evident between households supporting disabled persons and other households.

5.6.4 Income inequality

A household's income is an essential contributor to the household's ability to overcome the manifestations of deprivation being considered in this study, from being able to afford a colour TV to facing an unexpected required expense. In order to examine differentials in the spread of disposable income between SAL and nonSAL households, the two groups were split into 5 equal groups to determine the value of the household income that separates each group (20, 40, 60, 80 percentiles). The value used in this analysis was the household equivalised disposable income (HEDI) which factors in the household size. Using this value allowed for comparability between similar households in terms of the members of the household depending on the disposable income of the household.

The general pattern that emerges is one in which the HEDI value that separates the groups for SAL households is always less than the value that separates nonSAL households, with one exception being Italy for the 20th percentile of SAL and nonSAL households. There is a broad range of differences in these values; for instance, the difference between the SAL and the nonSAL 20th percentile ranges from 2.7% in Malta to 26.4% in Croatia (percentages difference calculated in proportion to nonSAL percentile value), with Italy SAL households' cut off value being exceptionally 0.6% more than that for nonSAL households. These differences show a marked increase along the HEDI income spectrum: in the 40th percentile, the differences range from 4.4% in Italy to 34.3% in Estonia; the 60th percentiles vary from 7.6% in Italy to 39.8% in Latvia; and the 80th percentile, the differences range from 10.7% in Italy to 38.6% in Latvia (see Table 5.15 below, and full details in Appendix J, Table J.10 to Table J.13 and correspondingly Figure J.6 to Figure J.9, pp. 547-554).

An examination of the percentiles in the different countries show both consistencies and variations; for instances Italy has the lowest gap in all four percentiles studied, while Malta starts with a low 20th percentile difference (2.7%) and moves to a middle range 80th percentile difference (20.8%).

Table 5.15: Summary of the 3 smallest and 3 largest differences between SAL and nonSAL households' 20th, 40th, 60th, and 80th percentile value for the household equivalised disposable income

	% average difference	3 minimum differences (%)			3 maximum differences (%)		
20 th percentile	13	Italy	Malta	Greece	Slovenia	Germany	Croatia
		-0.6	2.7	3.7	23.9	25.3	26.4
40 th percentile	19	Italy	Greece	Austria	Croatia	Latvia	Estonia
		4.4	6.9	9.1	27.3	33	34.3
60 th percentile	21	Italy	Greece	Austria	Lithuania	Estonia	Latvia
		7.6	11.2	11.9	33.5	39.5	39.8
80 th percentile	23	Italy	Slovakia	Greece	Estonia	Lithuania	Latvia
		10.7	11.9	13.2	34.4	35.6	38.6

The above analysis and a close look across the percentiles of all countries indicates a picture of household equivalised disposable income inequality between SAL and nonSAL households, a clear gap in the respective household's disposable income based on the presence of an adult member with activity limitation, and a gap that increases along the income spectrum. The income gap is the least at the lower end of the income range and highest at the other end.

Table 5.16: Percentages of SAL and nonSAL households at-risk-of poverty categorised according to their household equivalised disposable income

	household equivalised disposable income				TOTAL
	1 st decile	2 nd decile	3 rd decile	4 th decile	
SAL households AROP	47.8%	33.3%	10.9%	8.0%	100%
nonSAL households AROP	54.2%	27.5%	11.8%	6.5%	100%

In order to further understand the gap at the lower end of the income spectrum, the subgroup of SAL households and nonSAL households at-risk-of poverty were compared across their HEDI. Using the standardised Z scores of the HEDI, the deciles were calculated whereby all households AROP had a HEDI that fell within the first four deciles. However, the proportions were different with more nonSAL households falling in the lower deciles (see Table 5.16 above). This data indicates that in 2018, SAL households at-risk-of poverty had marginally higher income than nonSAL households. However, such a finding has to be read with the fact that 25.4% of SAL households compared to 17.4% of nonSAL households were AROP in 2018. More significantly, the MDI scores of SAL households AROP were still substantially

more than those of nonSAL households AROP (refer to Table 5.11, p. 229) notwithstanding the marginally higher income.

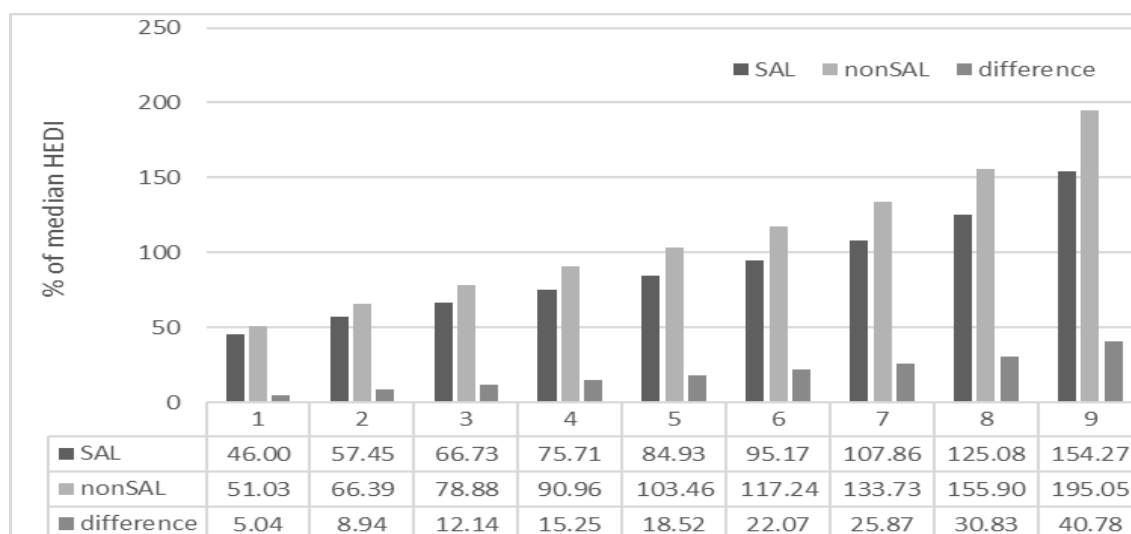


Figure 5.11: Deciles of HEDI as a percentage of MHEDI for SAL and nonSAL households (2018)

The last analysis focusing on income compared the SAL and nonSAL households deciles for the HEDI as a percentage of the MHEDI, basically confirming all of the previous investigations. For all the deciles, the SAL households values were substantially less, ranging from 5.04% in the first decile gradually increasing to 40.78% in the last decile (see Figure 5.11 above). The same pattern was observed for all countries with the exception of Bulgaria, Greece, Italy, Malta, Romania and Spain having a minimally higher first decile for SAL households, 0.28%, 3.05%, 3.11%, 0.38%, 0.47% and 1.83% respectively (see Table J.14, p. 555 in Appendix J for summary results).

This household income inequality points towards two main considerations: the reduced income potential of SAL households even at the higher income brackets and the apparent inadequacy of social benefits in rebalancing the income gap in the context of conceivable increased costs of SAL households due to living with impairment. The reality portrayed by this analysis conveys the picture of a particular group of households in a situation of relative disadvantage across the board. With the exception of some marginal instances where social transfers rebalance the disadvantage in favour of SAL households at the lower income end of

the spectrum, living with an adult who is severely limited in doing the things adults usually do increases the likelihood of experiencing additional limitations due to an array of deprivations and reduced household income. The increased deprivation of SAL households may correspond to the reduced household income compared to nonSAL households but also to the additional costs associated with living with an impairment.

5.6.5 Satisfaction with financial situation

Not surprisingly, the relative financial disadvantage of SAL households described above translates into SAL households being less satisfied than nonSAL households with their financial situation. In the 2018 EU-SILC survey special module, participants were asked to rate how satisfied they were with their financial situation on a scale from 0 (not at all satisfied) to 10 (completely satisfied). The data was collected for all adult members in each family, with the possibility of different members in a household having different subjective levels of satisfaction with their financial situation. For this analysis, two variables were computed from this data, one variable taking an average of the level of satisfaction with their financial situation of all household members in any household, and a second variable taking the least level of satisfaction expressed in any household. Given that the focus of this study is material deprivation at household level, the assumption being made here is that the level of satisfaction of any household with its financial situation is also a function of the individual level of satisfaction. This assumption ties to the fact that income poverty and deprivation are also both computed at household level in the EU-SILC data.

The analysis was carried out with the full 2018 aggregated sample and at country level, and with three sub-samples: households at-risk-of poverty; households not at-risk-of poverty whose HEDI \leq MHEDI; and households whose HEDI $>$ MHEDI. Altogether, the analyses carried out point towards one common picture; in all the income groups and in all countries, SAL households are significantly and substantially less satisfied than nonSAL households with their financial situation.

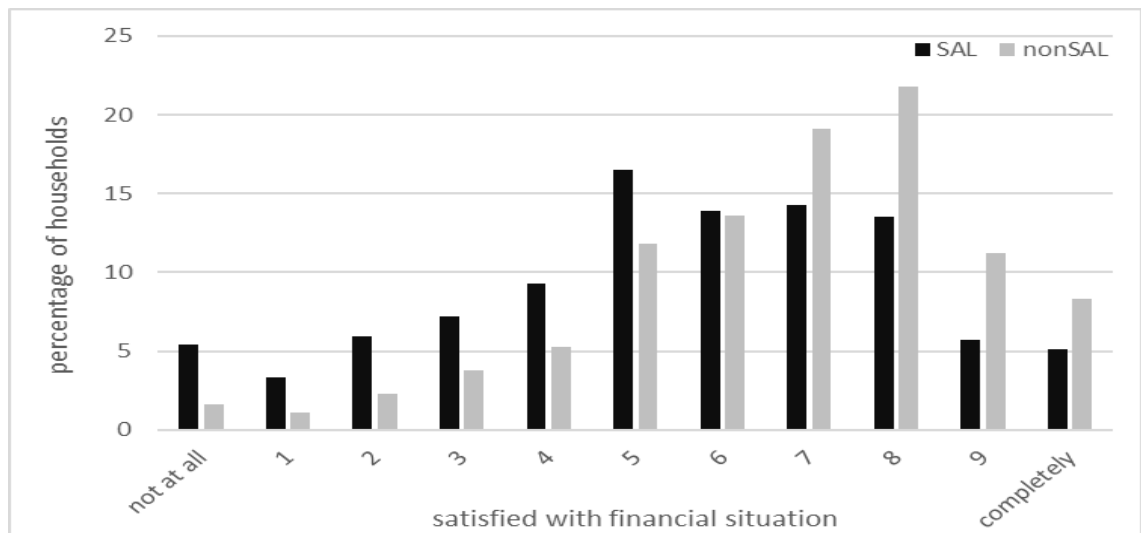


Figure 5.12: Average level of satisfaction of SAL and nonSAL households with their financial situation (2018)

Working with the full sample, 5.4% of all SAL households were on average not at all satisfied with their financial situation compared to 1.6% of nonSAL households while at the other end 5.1% of SAL households were completely satisfied weighing against 8.3% of nonSAL households (see Figure 5.12, above). If the analysis had to further differentiate between SAL₁ and SAL₊ households, the shift towards lack of satisfaction is greater for households with more than one adult with severe activity limitation (see Figure 5.13, below). Similar patterns emerged for the minimum level of satisfaction in households (instead of the average level of satisfaction) and for all the sub-samples studied (see full details in Appendix J, Table J.15 to Table J.18 and correspondingly Figure J.10 to Figure J.13, pp. 556-559).

The difference between SAL and nonSAL households was also analysed by dividing the two groups into five equal groups and looking at the percentiles. Proportionately, all the percentiles for SAL households were lower than those of nonSAL households for all samples studied (see Table 5.17, below). Some of the differences are quite noteworthy: for instance, for the sub-sample of households AROP, the mode for the minimum level of satisfaction for SAL households was zero (signifying households with at least one individual who was not at all satisfied with the financial situation), compared to a mode of 5 for nonSAL households. The differences persist also in the percentiles of the sub-sample with higher household

incomes, indicating that all across the board, SAL households are less satisfied with their financial situation than nonSAL households.

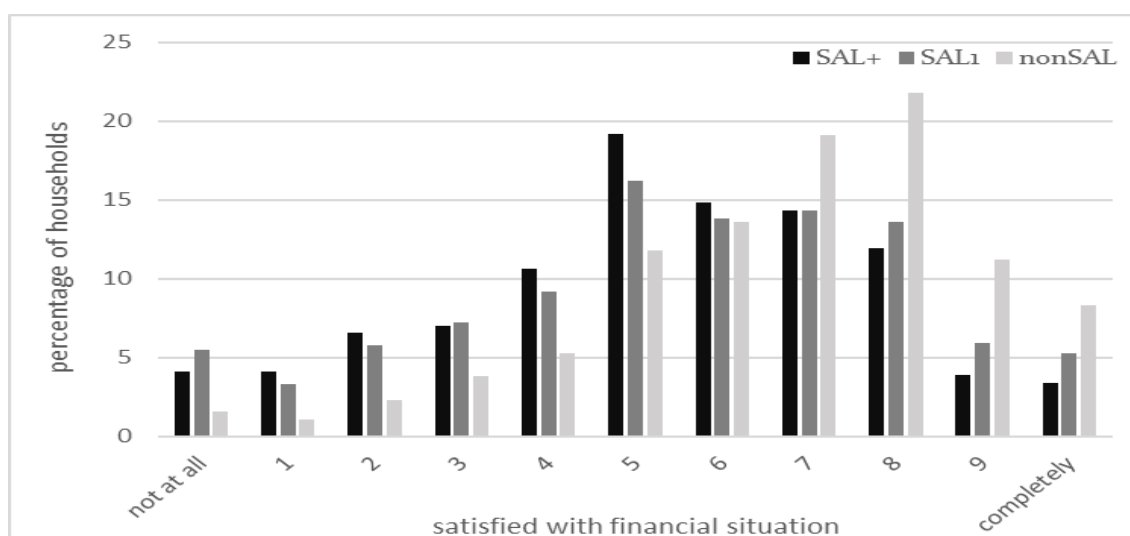


Figure 5.13: Average level of satisfaction of SAL+, SAL1 and nonSAL households with their financial situation (2018)

Table 5.17: Mean, median, mode, and 20th, 40th, 60th and 80th percentiles of SAL and nonSAL households' average (and minimum) level of satisfaction with their financial situation

full sample								
	mean	median	mode	percentile				valid
				20 th	40 th	60 th	80 th	
SAL	5.5(5.1)	6(5)	5(5)	3(3)	5(5)	6(6)	8(7)	85.6%
nonSAL	6.7(6.4)	7(7)	8(8)	5(5)	7(6)	8(7)	8(8)	88.7%
households at-risk-of poverty								
	mean	median	mode	percentile				valid
				20 th	40 th	60 th	80 th	
SAL	4.1(3.7)	4(4)	5(0)	1(1)	3(3)	5(5)	6(6)	87.7%
nonSAL	5.3(5.0)	5(5)	5(5)	3(3)	5(5)	6(6)	8(7)	90.0%
households not at-risk-of poverty and HEDI <= MHEDI								
	mean	median	mode	percentile				valid
				20 th	40 th	60 th	80 th	
SAL	5.5(5.1)	6(5)	5(5)	4(3)	5(5)	6(6)	8(7)	86.4%
nonSAL	6.3(6.0)	7(6)	7(7)	5(4)	6(6)	7(7)	8(8)	89.3%
households HEDI > MHEDI								
	mean	median	mode	percentile				valid
				20 th	40 th	60 th	80 th	
SAL	6.6(6.1)	7(6)	8(8)	5(4)	6(6)	7(7)	8(8)	84.1%
nonSAL	7.4(7.1)	8(7)	8(8)	6(6)	7(7)	8(8)	9(9)	88.2%

The satisfaction of SAL and nonSAL households with their financial situation in all of the 32 countries was analysed using the Mann-Whitney U Test for independent samples (for all countries). For all countries, both the distribution of the household minimum level of satisfaction and the distribution of the household average level of satisfaction with financial situation were not the same across the two different categories of households, with a lower level of satisfaction for SAL households (all results were significant at $p < 0.000$ level). However, given the large samples involved, such findings are not surprising; statistically significant results are not a measure of the effective difference between SAL and nonSAL households. A good measure of the effect size is the actual mean difference, taking into consideration the value of Cohen's d . The lowest average mean differences were 0.8 in France ($d = 0.437$) and Serbia ($d = 0.384$) and 0.9 ($d = 0.431$) in Ireland, with all the other differences being at least 1.0 or more, going up to 2.1 in Slovenia ($d = 0.920$) and Denmark ($d = 0.834$). These differences are substantial considering that they are derived from a 10 point satisfaction scale (see full details in Appendix J, Table J.19, p. 560).

Summarising the above analyses, one may conclude that across the board and in all countries, SAL households in 2018 were less satisfied than nonSAL households with their financial situation. The difference between these two groups of households was also present in the higher income brackets and does not evidently reflect a country's economic performance, a country's level of deprivation, and SAL households' level of deprivation. A weak association was found concerning the differences in the level of satisfaction of SAL and nonSAL households with the 2018 difference in the MDI scores between the two groups ($\tau_b [32] = 0.357, p = 0.006, bCa$ 99% CI [-0.013, 0.686]). However, the 99% confidence interval crosses the zero threshold and therefore no definite conclusions can be drawn from this association (see full details of correlations in Appendix J, Table J.20 to Table J.24 and correspondingly Figure J.14 to Figure J.18, pp. 561-565).

5.6.6 Deprivation, general health and chronic illness or condition

Disabled person are more likely to report having poorer overall health, or chronic illness or conditions (Froehlich-Grobe et al., 2016). How does one's self-perceived

health or chronic illness or chronic condition shape the deprivation experience of SAL and nonSAL households? Adult participants in the EU-SILC studies, in addition to being asked about their level of activity limitation, were also surveyed about their general health and whether they had any chronic illness or condition. The general health measure asked participants to rate their self-perceived health on a scale from 1 to 5, (very good, good, fair, bad, and very bad). It is a subjective measure of one's general health, not focused on short-term health problems, and "expected to include the different dimensions of health, i.e. physical, social and emotional functioning and biomedical signs and symptoms" (Eurostat, 2019a, p. 265). For this study, a new dichotomous variable was computed to identify households that included an adult member who identified their general health as bad or very bad; households, could therefore be identified as either households with long-term circumstances of bad or very bad health or households without such circumstances.

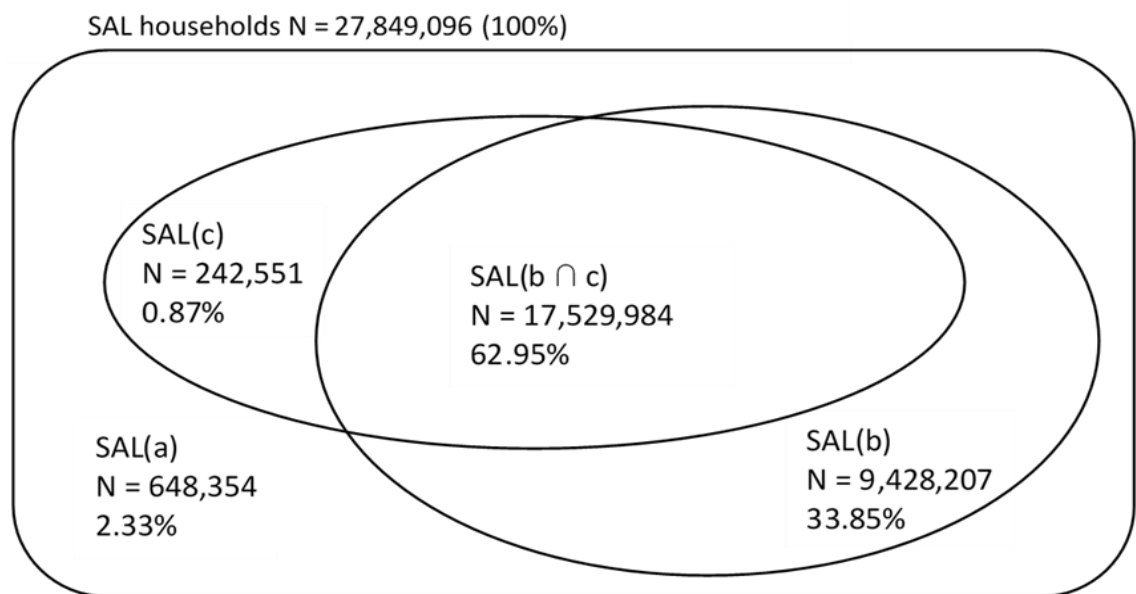


Figure 5.14: SAL households divided into four groups: SAL(a) no bad health or chronic condition; SAL(b) with chronic condition; SAL(c) with bad health; SAL (b ∩ c) with bad health and chronic condition

Adult participants are also asked whether they have a chronic or long-standing illness or condition, irrespective of the impact of the condition. The chronic illness or health condition is distinguished from a disability or impairment, but includes a vast array of possibilities, from chronic pain to seasonal problems, irrespective of whether the condition was medically diagnosed, irrespective of severity and not distinguishing whether or not the condition troubles the respondent (Eurostat,

2019a). The difficulty with this measure is that it is too unspecific in identifying participants living with a chronic condition which has a major impact on one's life. In this respect, it cannot replace the activity limitation measure and is not intended to do so (Eurostat, 2019a). A new dichotomous variable was calculated to distinguish those households who had an adult with a chronic or long-standing illness or condition from those that did not.

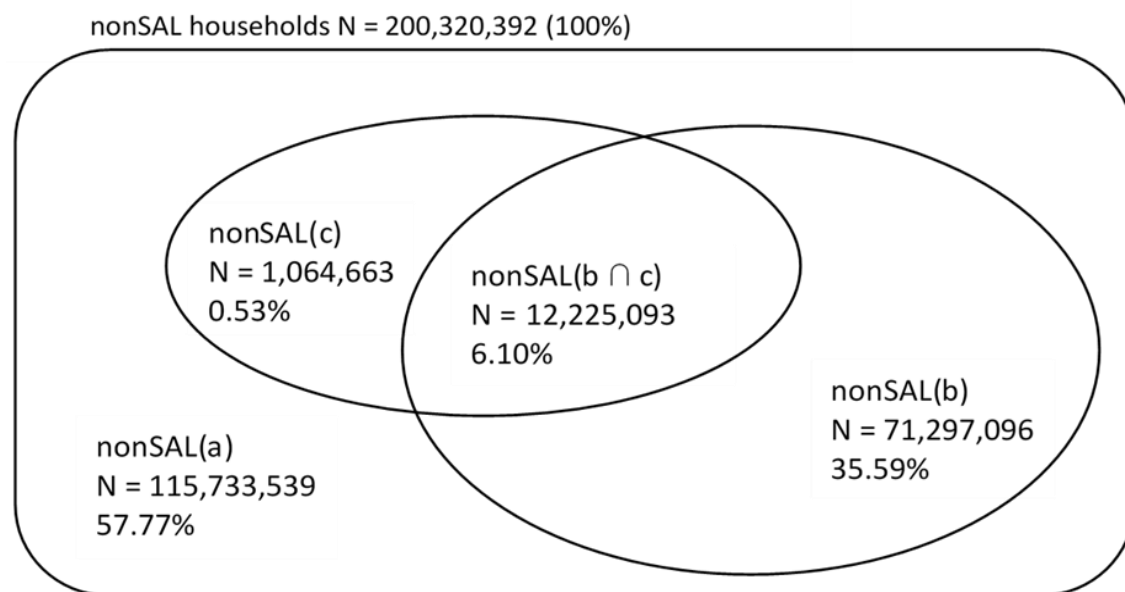


Figure 5.15: nonSAL households divided into four groups: nonSAL(a) no bad health or chronic condition; nonSAL(b) with chronic condition; nonSAL(c) with bad health; nonSAL (b ∩ c) with bad health and chronic condition

For this analysis, the distinction between SAL and nonSAL households was further differentiated to identify four distinct subgroups as follows:

- For SAL households
 1. SAL(a) – SAL households with no bad health and no chronic condition;
 2. SAL(b) – SAL households with a chronic condition but no bad health;
 3. SAL(c) – SAL households with bad health but no chronic condition;
 4. SAL(b ∩ c) – SAL households with both bad health and chronic condition.
- For nonSAL households
 1. nonSAL(a) – nonSAL households with no bad health and no chronic condition;

2. nonSAL(b) – nonSAL households with a chronic condition but no bad health;
3. nonSAL(c) – nonSAL households with bad health but no chronic condition;
4. nonSAL(b \cap c) – nonSAL households with both bad health and chronic condition.

This division allowed for a comparison between SAL and nonSAL households with similar health or chronic conditions. Understandably, the proportions of households in each subgroup for SAL and nonSAL households were considerably different: for instance, only 2.33% of SAL households did not have a bad health or a chronic condition, compared to 57.77% of nonSAL households. The resultant subgroups are summarised in Figure 5.14 and Figure 5.15 above.

In order to compare the distribution of deprivation within each of the subgroups described above, each subgroup was divided in 10 equal groups to estimate the value of the MDI score for each percentile. The results are summarised in Table 5.18 below. The results of this analysis throw new light on the SAL households deprivation gap when compared to nonSAL households. The substantial MDI score gap between SAL and nonSAL households is re-dimensioned when the different subgroups are compared, namely along the following lines:

1. When SAL and nonSAL households without any bad health or chronic condition situation are compared, the gap in deprivation is less than the gap when the two full groups are compared, but SAL households still show higher deprivation percentiles and mean scores;
2. A similar pattern resulted when comparing SAL and nonSAL households who have a chronic condition but no bad health circumstances. The results are minimally higher than those in 1 above. The presence of a chronic condition does not result in major changes in the pattern of deprivation score;
3. Interestingly, the gap between SAL and nonSAL households with bad health circumstances changes to the opposite direction of the trend seen so far: SAL households with bad or very bad health circumstances had lower MDI percentile and mean scores than nonSAL households in similar circumstances;

Table 5.18: MDI percentiles for different subgroups of SAL and nonSAL households

SAL households										
	MDI mean	percentile								
		10th	20th	30th	40th	50th	60th	70th	80th	90th
SAL(all)	18.5	0	0	4	8	12	20	26	36	46
SAL(a)	13.2	0	0	2	4	8	10	16	22	36
SAL(b)	13.8	0	0	2	4	8	12	18	26	38
SAL(c)	20.9	0	4	8	12	18	24	28	34	48
SAL(bnc)	21.3	0	2	6	10	16	22	30	40	50
nonSAL households										
	MDI mean	percentile								
		10th	20th	30th	40th	50th	60th	70th	80th	90th
nonSAL(all)	10.4	0	0	0	2	4	6	12	20	32
nonSAL(a)	9.4	0	0	0	2	4	6	10	16	30
nonSAL(b)	10.1	0	0	0	2	4	6	12	18	30
nonSAL(c)	23.6	0	4	8	14	20	26	34	42	54
nonSAL(bnc)	20.3	0	2	6	10	16	22	28	38	50
all SAL households & nonSAL households										
	MDI mean	percentile								
		10th	20th	30th	40th	50th	60th	70th	80th	90th
SAL(all)	18.5	0	0	4	8	12	20	26	36	46
nonSAL(all)	10.4	0	0	0	2	4	6	12	20	32
SAL & nonSAL households without bad health or chronic condition										
	MDI mean	percentile								
		10th	20th	30th	40th	50th	60th	70th	80th	90th
SAL(a)	13.2	0	0	2	4	8	10	16	22	36
nonSAL(a)	9.4	0	0	0	2	4	6	10	16	30
SAL & nonSAL households with chronic condition										
	MDI mean	percentile								
		10th	20th	30th	40th	50th	60th	70th	80th	90th
SAL(b)	13.8	0	0	2	4	8	12	18	26	38
nonSAL(b)	10.1	0	0	0	2	4	6	12	18	30
SAL & nonSAL households with bad health										
	MDI mean	percentile								
		10th	20th	30th	40th	50th	60th	70th	80th	90th
SAL(c)	20.9	0	4	8	12	18	24	28	34	48
nonSAL(c)	23.6	0	4	8	14	20	26	34	42	54
SAL households & nonSAL households with bad health and chronic condition										
	MDI mean	percentile								
		10th	20th	30th	40th	50th	60th	70th	80th	90th
SAL(bnc)	21.3	0	2	6	10	16	22	30	40	50
nonSAL(bnc)	20.3	0	2	6	10	16	22	28	38	50

- The deprivation gap between SAL and nonSAL households practically disappears when SAL households with bad health circumstances and chronic condition situations were compared with nonSAL households in the same situation;

5. The highest deprivation scores for SAL households were those households that identified as having both bad health and a chronic condition, while for nonSAL households the highest deprivation scores were those households with bad health circumstances but no chronic condition. This peculiar result may be reflecting the lack of specificity of the chronic condition measure. For instance, a SAL household may have identified having a chronic condition because of an adult member with schizophrenia while a nonSAL household might have identified having a chronic condition because of an adult member with persistent seasonal allergies; in one case the chronic condition results in strong activity limitation while in the other it does not.

As a final step to the above analysis, the MDI score means for households with a bad or very bad health situation were compared with the other households at country level and the difference in MDI scores were compared to the country differences between SAL and nonSAL households. Ignoring differences that were less than 2 points (considering the structure of the MDI), in 21 countries the difference between households on the basis of their health situation was more than the MDI difference on the basis of SAL condition (see Appendix J, Table J.25, p. 566). Although marginally, the picture is one in which MDI score differences are greater when comparing households on the basis of their health circumstances than on the basis of their SAL conditions. At country level, comparing SAL and nonSAL households without health problems was not considered because the numbers for SAL households are too small (less than 1% in most countries). However, the results were computed for Iceland and Luxembourg (having a SAL(a) population of 2.9% and 4.2% respectively). For Iceland, households with a bad health situation had 10.7 points more on the MDI than other households, SAL households had 7.7 points more than nonSAL households, and SAL(a) households had 2.2 points more than nonSAL(a) households; for Luxembourg, households with a bad health situation had 7.5 points more on the MDI than other households, SAL households had 5.8 points more than nonSAL households, and the differences between SAL(a) and nonSAL(a) households was negligible.

Considering all the factors ensuing from the analyses above, including the small number of SAL households that do not identify as having a bad health or a chronic

condition situation (2.33%), the results direct the focus on an important dimension in the lives of SAL households, namely the complexity of living with an impairment and its interrelation with one's assessment of one's health condition. If the results for 2018 are indicative of the more general trends, deprivation in SAL households cannot be understood divorced from the subjective health dimension. The data suggests that households that identify themselves as supporting an adult member with severe activity limitation because of a chronic condition and bad health circumstances are those households most likely to be at-risk-of the highest levels of material deprivation. Evidently, understanding deprivation in households supporting disabled persons cannot ignore the health dimension; self-perceived poor health and chronic conditions contribute to increased deprivation.

5.6.7 Perceived social exclusion

To what extent does the higher level of deprivation in households supporting disabled persons translate itself into a higher level of perceived social exclusion? A brief focus on perceived social exclusion concluded the detailed descriptive analysis of deprivation in 2018. The 2018 EU-SILC special module also collected data on participants' sensed level of social exclusion, identifying on a scale from 0 (not at all excluded) to 10 (completely excluded) the extent to which they felt excluded from society. Derived from Levitas et al. (2007) multi-dimensional analysis of social exclusion, for the purpose of this survey social exclusion was defined as involving not only the lack of resources necessary to participate in society but also the subjective feeling or opinion that one is rejected by society (Eurostat, 2019a). The data was collected for all adult members in any participating household. For this analysis, two variables were computed from this data, one variable taking an average level of perceived social exclusion of all household members, and a second variable taking the maximum level of social exclusion experienced in any household. Although the focus of this study is household material deprivation, the assumption being made here is that households facing higher levels of material deprivation may also possibly sense higher levels of social exclusion. Moreover, Levitas et al.'s (2007) definition of social exclusion overlaps with the broad material deprivation conceptualisation used in this study in that it includes "the lack or denial of resources, rights, goods and services, and the inability to participate in the normal

relationships and activities, available to the majority of people in society” (Levitas et al., 2007, p. 9), all factors captured by the MDI.

The first part of this analysis was carried out with the full 2018 aggregated sample and with the three sub-samples used in the previous analyses: households at-risk-of poverty; households not at-risk-of poverty with their HEDI \leq MHEDI; and households whose HEDI $>$ MHEDI. In each of the analysis, the focus was a comparative examination of SAL and nonSAL households’ social exclusion experience. The second part examined households’ perceived social exclusion on the basis of the presence of ill health within the household.

Working with the full sample and aggregate data, SAL households reported higher average (and maximum) levels of perceived social exclusion; for instance, 12.8% (12.7%) more nonSAL households experienced no exclusion while 1.0% (2.2%) more SAL households reported feeling completely excluded (see Figure 5.16 below). Similar patterns emerged for both the average level and maximum level of perceived social exclusion in three sub-samples studied (see full details in Appendix J, Table J.26 to Table J.29 and correspondingly Figure J.19 to Figure J.22, pp. 567-570).

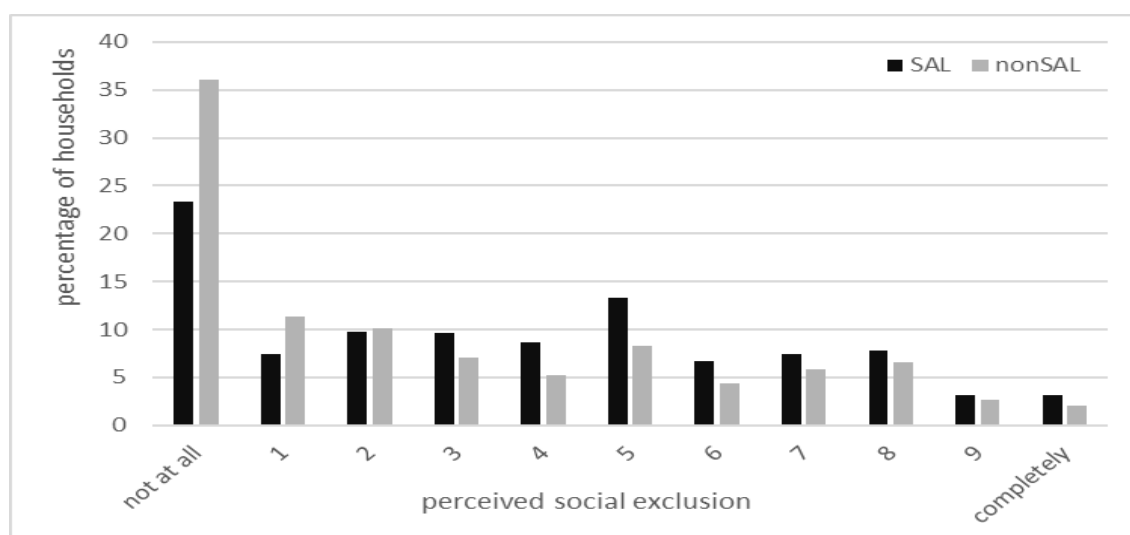


Figure 5.16: Average level of perceived social exclusion in SAL and nonSAL households (2018)

The difference between SAL and nonSAL households perceived level of social exclusion was also analysed by dividing the two groups into five equal groups and looking at the percentiles. Proportionately, all the percentiles for SAL households were higher than those of nonSAL households for all samples studied. The differences persist also in the percentiles of the sub-sample with higher household incomes, indicating that all across the board, SAL households perceived level of social exclusion is higher than that of nonSAL households (see **Error! Not a valid bookmark self-reference. Error! Not a valid bookmark self-reference.**).

Table 5.19: Mean, median, mode, and 20th, 40th, 60th and 80th percentiles of SAL and nonSAL households' average level of perceived social exclusion

full sample								
	mean	median	mode	percentile				valid
				20 th	40 th	60 th	80 th	
SAL	3.6(4.1)	3.3(4)	0(0)	0(0)	2(3)	4.5(5)	7(7)	83.7%
nonSAL	2.8(3.0)	2.0(2)	0(0)	0(0)	1(1)	3.0(3)	6(6)	87.6%
households at risk of poverty								
	mean	median	mode	percentile				valid
				20 th	40 th	60 th	80 th	
SAL	3.9(4.3)	4.0(5)	0(0)	0(0)	3.0(3)	5.0(5)	7(8)	84.4%
nonSAL	3.1(3.3)	2.3(3)	0(0)	0(0)	1.3(2)	3.7(4)	6(6)	88.2%
households not at risk of poverty and HEDI <= MHEDI								
	mean	median	mode	percentile				valid
				20 th	40 th	60 th	80 th	
SAL	3.7(4.2)	3.5(5)	0(0)	0(0)	2.5(3)	5(5)	7(7)	83.7%
nonSAL	3.0(3.2)	2.0(2)	0(0)	0(0)	1.0(1)	3(4)	6(7)	87.6%
households HEDI > MHEDI								
	mean	median	mode	percentile				valid
				20 th	40 th	60 th	80 th	
SAL	3.3(3.9)	3.0(4)	0(0)	0(0)	2.0(2)	4(5)	6.0(7)	83.3%
nonSAL	2.6(2.8)	1.0(2)	0(0)	0(0)	0.5(1)	2(3)	5.7(6)	87.5%

At country level, the difference between SAL and nonSAL households perceived average social exclusion varies from a high 2.3 in Norway to a low 0.4 in Hungary and all the way to a 1.9 difference in the opposite direction for Finland (that is nonSAL households' average perceived social exclusion was 1.9 higher than SAL households). Irrespective of the size and the direction of the difference, both the distributions of the household average and the household maximum level of

perceived social exclusion were not the same across the different categories of households (Mann-Whitney U Test for independent samples, $p < 0.000$). The actual difference and the value of Cohen's d is a good measure of how substantial the difference in perceived social exclusion between SAL and nonSAL households is (see Table J.30, in Appendix J, p. 571 for details). Although in the vast majority of countries SAL households reported feeling more socially excluded, the variability across countries is noteworthy, not least because it varies from a 2.3 ($d = -0.970$, 99% CI [-0.986, -0.972]) more for SAL households in Norway to 1.9 ($d = 0.990$, 99% CI [0.984, 0.996]) more for nonSAL households in Finland.

A closer examination of the situation in the countries at the two extremities revealed that even though the comparative situation of SAL households in Finland appears to be a more favourable one to Norway, this apparent result may not actually be the case. For instance, although the mean SAL social exclusion score for SAL households in Norway was 2.3 more than that of nonSAL households, it was still 1.8 less than that of SAL households in Finland. Comparing the 20th, 40th, 60th and 80th percentiles of SAL and nonSAL households perceived social exclusion in Norway and Finland showed that the 20th, 40th, and 60th percentiles of SAL households in Finland were higher than those of SAL households in Norway. A similar pattern was found in all the sub-samples, including those with higher household incomes (see details in Table J.31, Appendix J, p. 572). The results are so striking that one may need to look at the possibility that the social exclusion variable in Norway and in Finland was actually measuring a different concept. Moreover, such findings further underline the complexity of the deprivation picture and its relationship with the level of social exclusion experienced by households, especially when comparing data across different countries, cultures, and data collection regimes.

The second part of this analysis examined households' experience of social exclusion in the context of households that support adult members who identify their general health as bad or very bad. In the previous section, households with a bad health problem were identified as households that reported some of the highest levels of deprivation. The difference between households with (HEALTH) or without (nonHEALTH) a bad health problem was analysed by dividing the two groups into five equal groups and looking at the percentiles score for level of perceived social

exclusion. A similar analysis was also carried out with three subsamples; all SAL households; all nonSAL households; and households that identified as having a bad health problem divided on whether or not they were SAL or nonSAL households (see Table 5.20 below).

Table 5.20: Mean, median, mode, and 20th, 40th, 60th, and 80th percentiles of households' perceived average (and maximum) level of social exclusion comparing households with a health problem (HEALTH) to households without a health problem (nonHEALTH) for all households, for SAL households, for nonSAL households, and for all HEALTH households comparing SAL and nonSAL households.

all households								
	mean	median	mode	percentile				valid
				20 th	40 th	60 th	80 th	
HEALTH	2.8(3.0)	2(2)	0(0)	0(0)	1(1)	3(3)	6(6)	86.0%
nonHEALTH	3.6(4.0)	3(4)	0(0)	0(0)	2(3)	4(5)	6(7)	87.4%
SAL households								
	mean	median	mode	percentile				valid
				20 th	40 th	60 th	80 th	
HEALTH	3.8(4.3)	4(5)	0(0)	0(0)	3(3)	5(5)	7(8)	84.4%
nonHEALTH	3.5(3.9)	3(4)	0(0)	0(0)	2(2)	4(5)	7(7)	82.5%
nonSAL households								
	mean	median	mode	percentile				valid
				20 th	40 th	60 th	80 th	
HEALTH	3.3(3.6)	3(3)	0(0)	0(0)	2(2)	4(5)	6(7)	88.0%
nonHEALTH	2.8(3.0)	2(2)	0(0)	0(0)	1(1)	3(3)	6(6)	87.6%
all HEALTH households (households with a bad health problem)								
	mean	median	mode	percentile				valid
				20 th	40 th	60 th	80 th	
SAL	3.8(4.3)	4(5)	0(0)	0(0)	3(3)	5(5)	7(8)	84.4%
nonSAL	3.3(3.6)	3(3)	0(0)	0(0)	2(2)	4(5)	6(7)	88.0%

Proportionately, all the percentiles of HEALTH households were higher than those of nonHEALTH households for all the samples studied. Moreover, when HEALTH households were analysed, the percentiles of SAL households were higher than those of nonSAL households. These findings suggest that the presence of a health problem in a household is associated with an increased level of perceived social exclusion. Moreover, for SAL households the impact of a health problem on a household's perceived social exclusion is greater than for nonSAL households. Having someone with perceived ill-health can heighten the subjective sense of social exclusion, especially for households that support disabled individuals. Stated

another way, for SAL households the experience of social exclusion is even more severe when confronted with a health problem.

5.7 Conclusion

The above analyses point towards a complex picture in which severe activity limitation and health problems both contribute to the experience of social exclusion and deprivation, which result in SAL households with health problems reporting the highest levels of social exclusion in 2018. The high prevalence of SAL households with health problems needs to be factored in; SAL households without health problems are a minority in this subgroup. Consequently, it is not surprising that households with health problems exhibit similar levels of deprivation to SAL households.

The detailed descriptive analysis of the 2018 EU-SILC data followed similar patterns arising from the analyses of the 2013-2019 years. Throughout all the years and in all the 32 countries, SAL households experienced substantially higher levels of deprivation than nonSAL households. In general, variations in country deprivation levels did not alter the gap between SAL and nonSAL households deprivation. The compounded deprivation experienced by SAL households was fairly constant throughout. SAL households experienced greater poverty risk, and within the subgroup of households at-risk-of poverty, SAL households also experienced higher levels of deprivation. Social transfers played a major role in reducing the gap between the income of SAL and nonSAL households; social transfers are most effective in reducing this gap at the lower end of the household income spectrum. The extent to which social transfers reduced the gap in household income between SAL and nonSAL households is conditioned by the gap in household income prior to social transfers.

The more detailed analyses of the 2018 data showed that the deprivation experienced by SAL households was further increased for households with more than one adult with severe activity limitation, and this pattern was evident along all the income spectrum and also in households not experiencing low work intensity. The same pattern reflected itself in the two most frequent deprivations experienced,

namely households without the capacity to face an unexpected required expense and households who could not afford a week-long annual holiday away from home. The analyses also suggested that the nature of the deprivation measured in this study did not vary substantially between SAL and nonSAL households; however, SAL households experienced higher prevalence and were minimally more likely to show patterns of deprivation reflecting financial stress. The notable deprivation disadvantage of SAL households relative to nonSAL households did not shrink with economic progress as reflected in the reduction of a country's average MDI score. In general, for households with higher incomes, there is an increase in the likelihood of a SAL household experiencing a higher level of relative deprivation compared to nonSAL households. Clearly, SAL households experience income inequality and this income inequality is reflected in their lower levels of satisfaction with the households' financial situation.

In conclusion, a focus on how households perceived their general health situation identified households with an adult member claiming ill-health to be strongly associated with higher household deprivation rates. Severe activity limitation and health problems both compound the experience of social exclusion and deprivation, and SAL households with health problems reported the highest levels of social exclusion and deprivation in 2018. In the following chapter, the 2018 EU-SILC cross-sectional data is further analysed to identify predictors of deprivation, building on the descriptive analyses carried out in this chapter.

Chapter 6. Disability and deprivation – Contributory factors

6.1 Introduction

The general overview of deprivation in SAL and nonSAL households over the seven years 2013-2019 and the more detailed analysis from the 2018 EU-SILC data tell a story of a persistent gap that exists between the reported deprivation in the two categories of households being considered. This gap prevails in all countries and in all income groups, almost always at the disadvantage of households supporting an adult member with impairment who is severely limited in activities which adults usually do. In this chapter, the 2018 EU-SILC data is further analysed to understand the factors that contribute to deprivation. After identifying the main predictors of deprivation as measured by the MDI, the final focus is on deprivation in SAL households and its variation at region and country level.

6.2 Predictors of deprivation in 2018

What are the factors that contributed to the deprivation of SAL and nonSAL households in 2018? The analysis in the previous chapter points towards a number of predictor variables that can explain material deprivation in general, material deprivation in SAL households, and material deprivation at country level, namely the following:

- Equivalised household income (continuous variable);
- At-risk-of-poverty (dichotomous variable, no/yes);
- Low work intensity (dichotomous variable, no/yes);
- Household with someone having strong limitation in activities (dichotomous variable, no/yes);
- Household with bad or very bad health condition (dichotomous variable, no/yes);
- Household with member suffering from any chronic (long-standing) illness or condition (dichotomous variable, no/yes).

In addition to the above, a number of other variables were analysed to identify additional factors that can potentially explain material deprivation. As a result of this analysis, the following seven additional explanatory variables were identified, included below with their analysis.

6.2.1 Household with someone who is permanently disabled or unfit for work

All participating adults were asked to identify their self-defined economic status, on eleven different categories that capture the participant's "own perception of their main activity" (Eurostat 2019, p. 283). A dichotomous variable was computed to identify households that included an adult member who described themselves as 'permanently disabled or/and unfit to work'. Analysing this variable using the Mann-Whitney U Test for independent samples, the distribution of the household MDI scores were not the same across the two different categories of households, with households with an adult member who identified as 'permanently disabled or/and unfit to work' being 11.1 points higher ($p < 0.000$). The substantial mean difference is a good measure of the effect size, also taking into consideration the value of Cohen's d ($d = -0.737$, 99% CI $[-0.738, -0.736]$).

6.2.2 Households with or without non-material support

In the 2018 special module, households were asked to identify whether they had non-material support. Analysing households' MDI score by whether or not they had non-material support using the Mann-Whitney U Test for independent samples, the distribution of the household MDI scores were not the same across the two different categories of households, with households with no non-material support being 12.2 points higher ($p < 0.000$). The substantial mean difference is a good measure of the effect size, also taking into consideration the value of Cohen's d ($d = -0.814$, 99% CI $[-0.814, -0.813]$).

6.2.3 Households with or without material support

Households were also asked to identify whether they had material support. Analysing households' MDI score by whether or not they had material support using

the Mann-Whitney U Test for independent samples, the distribution of the household MDI scores were not the same across the two different categories of households, with households with no material support being 9.3 points higher ($p < 0.000$). The substantial mean difference is a good measure of the effect size, also taking into consideration the value of Cohen's d ($d = -0.624$, 99% CI $[-0.625, -0.624]$).

6.2.4 Household tenure status

Two approaches to analysing household tenure status were adopted, the first using a dichotomous predictor distinguishing households on the bases of whether they paid rent for housing, and the second using five categories of housing tenure, as explained below.

6.2.4.1 *Paying rent for accommodation*

Households that were either living in free accommodation or who owned the place they were living in (whether or not they were paying a mortgage) were distinguished from households who lived in rented accommodation (whether or not the rent paid was at market rate or at a lower than market rate). Using the Mann-Whitney U Test for independent samples to analyse the MDI scores of these two categories of households showed that the distributions of the household MDI scores were not the same across the two groups, with households living in rented accommodation being 5.4 points higher ($p < 0.000$). The substantial mean difference is a good measure of the effect size, also taking into consideration the value of Cohen's d ($d = -0.358$, 99% CI $[-0.358, -0.357]$).

6.2.4.2 *Housing tenure in categories*

Different housing tenures have been shown to predict household deprivation (Boarini and Mira d'Ercole, 2006). The EU-SILC provides five categories of home tenure, namely: outright owner; owner paying mortgage; tenant paying rent at prevailing or market rate; accommodation rented at reduced rate; and accommodation provided for free. Using the Independent-Samples Kruskal-Wallis Test to analyse the MDI scores of these five categories of households showed that the distributions of the household MDI scores were not the same across the five groups ($p < 0.000$), with 8.0 points difference between the lowest mean score

(outright owners) and the highest mean score (accommodation rented at reduced rate).

6.2.5 Financial burden of total housing costs and housing affordability

Defining and measuring housing affordability has yet to receive international consensus, with no single measure comprehensively addressing the various concerns associated with securing appropriate housing at an affordable cost in desirable locations (Ezennia & Hoskara, 2019). Stone, Burke and Ralston (2011, p. 8) define housing affordability as “the challenge each [household] faces in balancing the costs of its actual or potential housing, on the one hand, and its non-housing expenditures, on the other, within the constraints of its income”. Such a conceptualisation of affordability depicts the complexities involved in understanding and measuring affordability, with distinct objective and subjective dimensions which may not necessarily parallel each other. For instance, a household may consider its housing costs to be a heavy burden because it cannot afford what it aspires to (‘potential housing’) and not reflecting actual housing costs. Different metrics have their respective strengths and limitations. Two common metrics used in the EU-SILC are the ‘housing expenditure-to-income ratio’ and ‘subjective indicators of housing affordability’. These two measures, however, give different outcomes. Using EU-SILC data, Sunega and Lux (2016) showed empirically that the derived housing cost overburden rates differed significantly from the subjective evaluation of the burden of housing cost. Housing expenditure-to-income ratios, while relatively straightforward and intuitive, rely on an ‘overburden’ threshold that does not account for household characteristics and their relative income position. Such a measure may result in lack of nuance when assessing the burden of housing costs on different households and does not consider housing quality (OECD, 2021). Bramley’s (2012) findings had suggested that relying solely on price/income ratios may not be adequate to reflect the complexities of housing affordability in situations where factors such as sickness and disability contribute to low income. Nor do they account for household size. Conversely, subjective measures of housing affordability reflects individual perceptions of what constitutes a financial burden and may vary based on their socio-demographic characteristics (OECD, 2021). The subjective measures can capture a dimension not captured by the objective housing

expenditure-to-income ratios. Deidda's (2015) research on the impact of housing cost burden on household economic hardship used both the objective and subjective measures, explaining that a household's perception of its housing cost burden may also be affected by a household's comparison with its reference group. Brandolini et al. (2022) analysed the factors that affect a household's subjective burden of housing costs and concluded that although various household and country factors impact a household's assessment of its housing costs burden, "it is reasonable to think that higher perceived burdens are in line with actual housing costs, but also other cost burdens" (p. 123). Both measures will be used in this analysis. Overall, SAL households were 1.21 times more likely to have their total housing costs exceeding 40% of their household income and 1.77 times more likely to say that their housing costs were a heavy financial burden to the household.

6.2.5.1 *Financial burden of housing cost*

Data on the extent to which the total housing costs were considered to be a financial burden to one's household is also collected regularly in the annual EU-SILC surveys. Housing costs include all costs but primarily mortgage repayments and rents. A new variable was computed to distinguish households that considered their total housing costs to be a heavy burden from those that did not. Analysing the financial burden of the total housing costs using the Mann-Whitney U Test for independent samples, the distribution of the household MDI scores were not the same across the two different categories of households, with households that experienced the total housing costs as a heavy burden being 15.9 points higher ($p < 0.000$). The substantial mean difference is a good measure of the effect size, also taking into consideration the value of Cohen's d ($d = -1.172$, 99% CI [-1.172, -1.171]).

6.2.5.2 *Housing cost overburden*

Eurostat defines a household as overburdened with housing costs when the household's total housing costs net of any housing allowance exceeds 40% of its disposable income net of any housing allowance. In line with Eurostat analyses, the mortgage principal payment was not included in the housing costs (in their extensive study on housing and poverty in Europe, Hick, Pomati and Stephens, 2022, included the mortgage principal payments justifiably arguing that such payments reduce a household's effective disposable income). Two new variables were

computed, one with the housing expenditure-to-income ratio and a dichotomous variable to distinguish households that exceeded the 40% threshold from those that did not. Analysing the housing cost overburden using the Mann-Whitney U Test for independent samples, the distribution of the household MDI scores were not the same across the two different categories of households, with households whose total housing costs exceed 40% of the household's disposable income scoring 9.8 points higher ($p < 0.000$). The substantial mean difference is a good measure of the effect size, also taking into consideration the value of Cohen's d ($d = -0.655$, 99% CI [-0.656, -0.655]).

6.2.6 Financial burden of repayment of debt

The extent to which repayment of non-housing debts were considered to be a financial burden to one's household were also analysed, distinguishing between households that experienced such debts as a heavy burden from other households that did not. Similar to a household's assessment of its housing costs, this variable is a household's subjective assessment the impact debt repayment has on its disposable income. Debt burden has also been considered "a proxy for lack of wealth and (dis)saving" (Borg and Guio, 2021). Analysing this financial burden using the Mann-Whitney U Test for independent samples, the distribution of the household MDI scores were not the same across the two different categories of households, with households that experienced the repayment of debt as a heavy burden being 14.5 points higher ($p < 0.000$). The substantial mean difference is a good measure of the effect size, also taking into consideration the value of Cohen's d ($d = -0.968$, 99% CI [-0.968, -0.967]).

6.2.7 Overcrowded household

The EU-SILC provides a computed dichotomous variable to distinguish households that are considered to be overcrowded from those that are not. Overcrowded households are those that do not provide a minimum of rooms taking into consideration the composition of the household. Analysing households' MDI score using the Mann-Whitney U Test for independent samples, the distribution of the household MDI scores were not the same for households that were overcrowded

and those that were not so, with overcrowded households being 9.5 points higher ($p < 0.000$). The substantial mean difference is a good measure of the effect size, also taking into consideration the value of Cohen's d ($d = -0.636$, 99% CI [-0.636, -0.635]).

6.2.8 Type of household

Two approaches to analysing the type of household structure were adopted. The first approach used two dichotomous predictors, one identifying single person households and a second identifying single parent households with children. The second approach used eight categories of housing structure, as explained below.

6.2.8.1 Single adult households

Two different variables were computed to identify single person households and single parent households with one or more children. The distribution of household MDI scores was different for single person households and for single parent households with one or more children when compared with other households (Mann-Whitney U Test for independent samples, $p < 0.000$). Single person households had a MDI mean of 2.1 points more than other households ($d = -0.141$, 99% CI [-0.141, -0.140]), while single parent households with one or more children had a MDI mean of 7.2 points more than other households ($d = -0.475$, 99% CI [-0.476, -0.475]). Although the effect size of the MDI difference between single person households and other households is rather small, it will still be considered in the regression analysis to explore its possible differential effect for SAL and nonSAL households (interaction effect).

6.2.8.2 Type of household structure in categories

The EU-SILC provides 10 types of household structures which were regrouped into eight categories as follows: single person household with no children; 2 adult household with no dependent children (grouping together households where both adults were under 65 years and households in which at least one of the adult was 65 or older); 2 adult households with 1 or 2 dependent children (grouping together households with 2 adults and 1 or 2 children); 2 adult households with 3 or more dependent children; single parent household with children; other households with children; other households with no children; other households not classified. SAL households were less prevalent in the households without children. Using the

Independent-Samples Kruskal-Wallis Test to analyse the MDI scores of these eight categories of households showed that the distributions of the household MDI scores were not the same across the eight groups ($p < 0.000$), with 9.6 points difference between the lowest mean score (2 adult household with no children) and the highest mean score (single parent household with 1 or more children).

6.2.9 Potential confounders (predictors not prioritised in this study)

As discussed previously (see sec. 2.10), deprivation is commonly associated with various socio-economic and demographic factors that are more prevalent in persons experiencing material deprivation. These characteristics could potentially be factors that distinguish SAL from nonSAL households and, as a result, could be variables that explain some of the observed gap in deprivation between these two categories of households. The question is how to consider personal factors as household characteristics given that in this study deprivation is being examined at household level. Four additional variables were considered as household characteristics: age; education; basic activity status; and sex. These variables were incorporated in the further analysis carried out on the initial model (see sec. 6.4).

6.2.9.1 Age

There are various age-related factors that may theoretically affect household deprivation. Age increases the likelihood of developing an impairment, which implies that SAL households are more likely to be households in which the age of the household members is older. The challenge is how to factor in age when the unit of analysis is the household. Various possibilities were considered. Taking the average age of the household by adding up all the ages and dividing by the number of persons in the household does not make theoretical sense. The second possibility considered was to categorise households according to the age of the person with severe activity limitation, and if more than one person has severe activity limitation taking the average age. This approach does not serve the purpose of comparing SAL and nonSAL households as there are no equivalent nonSAL households with which to compare the disabled person's age-specified SAL household. The third possibility was to consider the age of the head of household. The nearest equivalent to this variable in the EU-SILC is the person responsible for the accommodation, that is the

person owning or renting the accommodation, or in the case of free accommodation, the person to whom the accommodation is provided (Eurostat, 2019a). This third approach, also used by Whelan and Maître (2007), was adopted for this study. Households were categorised according to the age of the person responsible for the accommodation, or if more than two persons shared the responsibility the age of the oldest person, using the age brackets 16-34, 35-49, 50-64, 65-72, 73 and over. (The preferred age categories 65-79 and 80+ could not be used because data for Germany is given up to 72 and all ages above 73 are given in one category.) SAL households are more prevalent in the older age groups and, markedly, the difference in MDI scores between SAL and nonSAL households decreases gradually in the older age brackets (Table 6.1 below).

Table 6.1: Age distribution of SAL and nonSAL households, and difference in MDI scores for SAL and nonSAL households by age categories (2018)

	percentage		MDI score		
	SAL	nonSAL	SAL	nonSAL	SAL - nonSAL difference
16-34 years	3.8	14.8	24.4	10.4	14.0
35-49 years	14.5	28.1	22.9	10.8	12.1
50-64 years	31.3	29.2	21.1	10.9	10.2
65-72 years	16.8	13.1	16.6	10.0	6.6
73 years or older	33.5	14.8	14.8	10.5	4.3
Total	100	100			

6.2.9.2 Education

As previously discussed, individuals with lower levels of education are more likely to face material deprivation and households whose head has received less education have greater odds of experiencing deprivation (Boarini and Mira d'Ercole, 2006). Similar to the age factor, the education level of a household is not a straightforward measure. Two approaches were considered: the highest level of education in a household; or alternatively, the education level of the person responsible for the accommodation. For this study, the second option was adopted. Households were grouped according to the education level of the person responsible for the accommodation, within the following categories: primary education or less; lower secondary education; upper secondary education and post-secondary non-tertiary education; tertiary education. SAL households are more prevalent in the lower

education groups, and predictably, for both SAL and nonSAL the MDI scores decrease with increased education, with SAL households having higher MDI scores in all education categories (Table 6.2 below).

Table 6.2: Education distribution of SAL and nonSAL households, and difference in MDI scores for SAL and nonSAL households by education categories (2018)

	percentage		MDI score		
	SAL	nonSAL	SAL	nonSAL	SAL - nonSAL difference
primary or lower	20.6	9.7	23.7	18.9	4.8
lower secondary	22.2	15.6	21.8	15.8	6.0
upper secondary & post-secondary, non-tertiary	39.4	41.8	18.6	11.0	7.6
tertiary	17.8	32.9	11.3	5.6	5.7
Total	100	100			

6.2.9.3 Basic activity status

The position of the labour market of the person responsible for the accommodation was also considered and households were grouped according to the self-defined basic activity status of the person responsible for the accommodation, with the following categories: at work; unemployed; retired (in retirement, early retirement or has given up business); and other inactive persons. SAL households are more prevalent in the 'retirement and inactive' categories and considerably less likely to be present in the 'at work' category. For both SAL and nonSAL households, the highest deprivation scores are present in the unemployed and inactive categories, but for all categories the MDI scores are higher for SAL households (Table 6.3 below).

Table 6.3: Activity status distribution of SAL and nonSAL households, and difference in MDI scores for SAL and nonSAL households by activity status (2018)

	percentage		MDI score		
	SAL	nonSAL	SAL	nonSAL	SAL - nonSAL difference
at work	24.1	59.8	15.5	8.8	6.7
unemployed	5.2	4.1	36.0	28.3	7.7
in retirement or early retirement	51.3	29.5	15.2	9.9	5.3
other inactive person	19.4	6.6	26.9	18.0	8.9
Total	100	100			

6.2.9.4 Sex

Households were also grouped according to sex of the person responsible for accommodation. For both SAL and nonSAL households, the MDI scores were higher in households falling in the female category, but SAL households MDI were higher in both sex categories (Table 6.4 below).

Table 6.4: Sex distribution of SAL and nonSAL households, and differences in MDI scores for SAL and nonSAL households by sex (2018)

	percentage		MDI score		
	SAL	nonSAL	SAL	nonSAL	SAL - nonSAL difference
female	43.4	56.2	21.0	12.3	8.7
male	40.0	60.0	16.7	9.3	7.4
Total	100	100			

6.3 Regression analysis

The 14 variables resulting from the analyses carried out so far were considered for a regression analysis to understand the impact of each variable on deprivation as measured by the Modified Deprivation Index (MDI), focusing on possible differential effects on SAL and nonSAL households. Preliminary analysis indicated that the variable identifying households with a chronic (long-standing) condition and the variable identifying households with an adult permanently disabled or unfit for work did not contribute to the R square value of the regression and were therefore omitted in the final regressions.

Two approaches were considered: the first approach explored was a regression analysis including an interaction variable for all predictors with the SAL/nonSAL households variable; the second approach considered was two identical, but separate, regression analyses for SAL and nonSAL households. Split sample regression analysis is equivalent to running one regression analysis with an interaction term for all the predictors. However, the first approach faced the problem of a high multicollinearity between the SAL/nonSAL households dichotomous variable and the variable that distinguished households with and without a bad health problem. This high multicollinearity results from the fact that

some 63% of SAL households also have a bad health problem compared to about 6.5% of nonSAL households. A split sample analysis was therefore carried out to examine how all the coefficients of the predictors differ between SAL and nonSAL households, in essence equivalent to a fully interacted model.

The regression analyses were carried out using an enter methodology with all 11 variables, using the at-risk-of-poverty dichotomous variable in one set of analyses and then replacing this variable by a household income continuous variable.

6.3.1 At-risk-of-poverty and other predictors of deprivation

The first round of analyses used the dichotomous poverty variable (whether or not households were at-risk-of poverty). The summary data of the first two regression analyses for SAL and nonSAL households are given in Table 6.5 and Table 6.6 below. The predictors explain 43.4% of the variance in MDI deprivation for SAL households and 38.7% for nonSAL households. Although the general pattern of the predictors that best explain deprivation (as measured by the MDI) is quite similar for both groups of households, there are also noteworthy differences.

The main results of the regression analyses are summarised below:

First, the predicted deprivation for SAL and nonSAL households without any of the situations covered by the predictors would be minimal (value of the constants), with no substantial difference between them. This finding represents the unlikely scenario in which SAL households would not have any of the conditions described by the predictors compared to nonSAL households in similar circumstances. Beyond this unlikely scenario, the higher deprivation in SAL households results from the higher prevalence of the predictors circumstances and, as we shall see, the greater impact of some of the predictors on SAL households.

Table 6.5: Linear model of predictors of deprivation in SAL households (2018)

	unstandardised coefficients		standardised coefficients	t	99.0% confidence interval for B	
	B	std. error	Beta		lower bound	upper bound
(Constant)	2.121	0.006		361.111	2.106	2.136
Total housing costs a heavy burden	14.236	0.006	0.369	2359.851	14.221	14.252
At risk of poverty	9.066	0.007	0.209	1296.445	9.048	9.084
Debt repayments a heavy burden	8.231	0.011	0.116	761.824	8.203	8.259
Overcrowded household	5.643	0.009	0.097	641.884	5.621	5.666
Low work intensity	5.471	0.008	0.110	686.331	5.450	5.491
No non-material support	4.732	0.009	0.093	529.902	4.709	4.755
No material support	4.286	0.007	0.106	605.393	4.267	4.304
Paying rent for accommodation	4.038	0.006	0.099	628.334	4.022	4.055
General bad health circumstances	3.945	0.006	0.100	663.869	3.929	3.960
Single parent household with children	3.608	0.018	0.031	201.470	3.562	3.654
One-person household	2.147	0.006	0.054	344.952	2.131	2.163
For all coefficients, p < 0.000						
R² = 0.433						

Table 6.6: Linear model of predictors of deprivation in nonSAL households (2018)

	unstandardised coefficients		standardised coefficients	t	99.0% confidence interval for B	
	B	std. error	Beta		lower bound	upper bound
(Constant)	1.983	0.001		1503.500	1.980	1.987
Total housing costs a heavy burden	10.861	0.002	0.326	5461.401	10.856	10.866
At risk of poverty	8.331	0.002	0.217	3519.377	8.325	8.338
Debt repayments a heavy burden	7.615	0.004	0.114	1958.689	7.605	7.625
Low work intensity	7.404	0.004	0.125	2082.906	7.395	7.413
General bad health circumstances	5.942	0.003	0.102	1778.242	5.933	5.950
No non-material support	4.814	0.003	0.097	1430.729	4.805	4.823
Overcrowded household	4.481	0.003	0.100	1728.706	4.474	4.487
No material support	4.091	0.002	0.113	1660.099	4.084	4.097
Single parent household with children	2.871	0.004	0.040	684.232	2.860	2.882
Paying rent for accommodation	2.135	0.002	0.067	1133.212	2.130	2.139
One-person household	1.430	0.002	0.046	778.209	1.425	1.435
For all coefficients, p < 0.000						
R² = 0.386						

Second, the subjective financial burden of total housing costs emerged as the strongest predictor of material deprivation for all households. This finding requires careful consideration and will be further interpreted in Section 6.4 when the objective measure of housing cost overburden is introduced. One plausible

interpretation is that the household's subjective assessment of its housing costs as a heavy burden is a measure of subjective financial stress and the strong relationship observed is one between two subjective variables (subjective heavy burden of housing costs and a household's difficulty making ends meet – in subsequent analysis, an amended version of the MDI excluding the 'making ends meet' component is used to test for this factor). Alternatively, this variable may be considered as paralleling a household's evaluation of the housing costs on its disposable income; with this consideration, the results of these analyses suggest that household disposable income is highly impacted by housing costs in the resultant household material deprivation. Moreover, the difference in this predictor's coefficients for SAL and nonSAL households implies a more severe impact of the subjective assessment of financial burden of total housing costs on SAL households (see Table 6.7 below). This more severe impact has to also factor in the higher prevalence of such a burden in SAL households. The percentage of SAL households experiencing a subjective heavy financial burden because of total housing costs in 2018 was 37.1%, compared to 24.8% in nonSAL households. Congruently, paying rent for accommodation and living in an overcrowded household further contribute to deprivation and were stronger predictors of deprivation for SAL households.

Third, as expected, another strong predictor of material deprivation for all households was being at-risk-of poverty, with SAL households being slightly more impacted. This point will be explored in more detail when discussing the two regressions analyses using the deciles of the standardised Z score for HEDI instead of the dichotomous AROP predictor.

Table 6.7: Differences in SAL and nonSAL households' regression coefficients in linear model of predictors of deprivation, signifying interaction effects of predictors with whether or not a household has SAL circumstances

	SAL households coefficients	nonSAL households coefficients	coefficients difference SAL - nonSAL
	B SAL	B nonSAL	
(Constant)	2.121	1.983	0.138
Total housing costs a heavy burden	14.236	10.861	3.375
Paying rent for accommodation	4.038	2.135	1.903
Overcrowded household	5.643	4.481	1.162
Single parent household with children	3.608	2.871	0.737
At risk of poverty	9.066	8.331	0.735
One-person household	2.147	1.430	0.717
Debt repayments a heavy burden	8.231	7.615	0.616
No material support	4.286	4.091	0.195
No non-material support	4.732	4.814	-0.082
Low work intensity	5.471	7.404	-1.933
General bad health circumstances	3.945	5.942	-1.997

Fourth, low work intensity was a stronger predictor of deprivation in nonSAL households, as was general bad health circumstances, but both were strong predictors of deprivation in all households. Debt repayment, lack of material and non-material support, being a single parent with children and living alone were all predictors of deprivation in all households.

Fifth, the predictors in this model explain 43.3% and 38.6% of the deprivation in SAL and nonSAL households respectively.

6.3.2 Income and other predictors of deprivation

The impact of household income on deprivation was examined by substituting the at-risk-of-poverty dichotomous variable with a continuous variable giving each household's equivalised disposable income (HEDI) as a percentage of the country median of the household equivalised disposable income (MHEDI), and running two regression analyses similar to the above. The regressions were carried out with the full sample first followed by parallel regressions with a trimmed sample in which households with a negative HEDI (609 units or 0.22% of the sample) and households with a HEDI more than five times the MHEDI (1224 units or 0.43% of the sample) were excluded. The regressions with the trimmed sample (excluding 0.65% of the

units) were justified to estimate a more realistic picture of the relationship between income and the MDI. (The results of these regressions are summarised in Table 6.8 to Table 6.11 below). The analyses with both the full sample and the trimmed sample give similar results. However, the coefficients of the income variable for the trimmed sample are considered to be more realistic as they are not influenced by a small number of negative household incomes or extremely high household incomes (more than five times the median income). These analyses further explain how household income predicts deprivation in SAL and nonSAL households. Focusing on the analyses from the trimmed sample, the main findings are the following:

First, the predicted deprivation for SAL and nonSAL households disregarding their equivalised disposable income and without any of the situations covered by the predictors (value of the constants) is substantially more for SAL households than for nonSAL households (3.5 points on the MDI). As the income increases, the deprivation score decreases at a faster rate for SAL households than for nonSAL households (see Table 6.12 below). Using these predicted values, the MDI scores for SAL and nonSAL households at 60% of MHEDI (AROP threshold) are 7.4 and 6.1 respectively (1.3 points difference); at MHEDI, the predicted scores are 4.2 for all households. As the income increases, the predicted difference in deprivation due to income decreases. This difference in SAL and nonSAL households coefficients for their equivalised disposable income represents an interaction effect suggesting that SAL households' deprivation scores are more sensitive to changes in household disposable income. The MDI score increases more rapidly for SAL households with a decrease in household income than it does for nonSAL households. Put differently, the SAL nonSAL MDI gap narrows with an equivalent increase in income and the gap widens for a comparable decrease in the households' income bracket. The mediating effect of income on deprivation is more pronounced for SAL households compared to nonSAL households.

Table 6.8: Second linear model of predictors of deprivation in SAL households (2018)

	unstandardised coefficients		standardised coefficients	t	99.0% confidence interval for B	
	B	std. error	Beta		Lower Bound	Upper Bound
(Constant)	10.711	0.009		1206.617	10.688	10.734
HEDI as % of country median HEDI	-0.067	0.000	-0.196	-1226.300	-0.067	-0.067
Total housing costs a heavy burden	14.010	0.006	0.363	2303.609	13.994	14.025
Debt repayments a heavy burden	7.911	0.011	0.112	730.376	7.883	7.939
Low work intensity	6.310	0.008	0.127	800.378	6.289	6.330
Overcrowded household	6.026	0.009	0.104	684.777	6.003	6.048
No non-material support	4.801	0.009	0.094	535.941	4.778	4.824
No material support	4.397	0.007	0.109	619.367	4.379	4.415
General bad health circumstances	3.890	0.006	0.098	652.385	3.874	3.905
Single parent household with children	3.880	0.018	0.033	216.066	3.834	3.926
Paying rent for accommodation	3.734	0.006	0.092	576.395	3.717	3.751
One-person household	2.311	0.006	0.058	370.773	2.295	2.327
For all coefficients, p < 0.000						
R² = 0.429						

Table 6.9: Second linear model of predictors of deprivation in SAL households (2018 trimmed sample) – SALModel-1

	unstandardised coefficients		standardised coefficients	t	99.0% confidence interval for B	
	B	std. error	Beta		Lower Bound	Upper Bound
(Constant)	12.297	0.009		1311.876	12.273	12.321
HEDI as % of country median HEDI	-0.081	0	-0.215	-1331.37	-0.081	-0.081
Total housing costs a heavy burden	13.81	0.006	0.358	2276.967	13.794	13.825
Debt repayments a heavy burden	8.023	0.011	0.113	743.61	7.995	8.05
Low work intensity	6.018	0.008	0.122	764.623	5.998	6.039
Overcrowded household	5.915	0.009	0.102	674.839	5.893	5.938
No non-material support	4.766	0.009	0.093	533.883	4.743	4.789
No material support	4.357	0.007	0.108	615.916	4.338	4.375
General bad health circumstances	3.844	0.006	0.097	646.563	3.828	3.859
Single parent household with children	3.758	0.018	0.032	209.869	3.712	3.804
Paying rent for accommodation	3.507	0.006	0.086	542.311	3.49	3.523
One-person household	2.094	0.006	0.052	336.589	2.078	2.11
For all coefficients, p < 0.000						
R² = 0.434						

Table 6.10: Second linear model of predictors of deprivation in nonSAL households (2018)

	unstandardised coefficients		standardised coefficients	t	99.0% confidence interval for B	
	B	std. error	Beta		Lower Bound	Upper Bound
(Constant)	4.361	0.002		2514.523	4.357	4.366
HEDI as % of country median HEDI	-0.014	0.000	-0.112	-1877.812	-0.014	-0.014
Total housing costs a heavy burden	11.361	0.002	0.341	5604.479	11.356	11.366
Low work intensity	10.102	0.004	0.171	2868.938	10.093	10.111
Debt repayments a heavy burden	7.309	0.004	0.109	1838.780	7.299	7.319
General bad health circumstances	6.150	0.003	0.106	1800.056	6.141	6.159
No non-material support	5.091	0.003	0.103	1480.243	5.082	5.100
Overcrowded household	5.053	0.003	0.113	1911.995	5.047	5.060
No material support	4.229	0.003	0.116	1678.547	4.222	4.235
Single parent household with children	3.372	0.004	0.047	786.486	3.361	3.383
Paying rent for accommodation	2.398	0.002	0.075	1245.093	2.393	2.403
One-person household	2.049	0.002	0.066	1097.679	2.044	2.054
For all coefficients, p < 0.000						
R² = 0.358						

Table 6.11: Second linear model of predictors of deprivation in nonSAL households (2018 trimmed sample) – nonSAL Model 1

	unstandardised coefficients		standardised coefficients	t	99.0% confidence interval for B	
	B	std. error	Beta		Lower Bound	Upper Bound
(Constant)	8.832	0.002		3741.848	8.826	8.838
HEDI as % of country median HEDI	-0.046	0	-0.205	-3331.37	-0.046	-0.046
Total housing costs a heavy burden	10.661	0.002	0.32	5298.873	10.656	10.666
Low work intensity	8.833	0.004	0.149	2518.757	8.824	8.842
Debt repayments a heavy burden	7.321	0.004	0.11	1871.35	7.311	7.331
General bad health circumstances	5.699	0.003	0.098	1692.868	5.69	5.707
No non-material support	4.935	0.003	0.099	1454.439	4.926	4.943
Overcrowded household	4.601	0.003	0.103	1765.977	4.595	4.608
No material support	4.019	0.002	0.11	1616.269	4.013	4.026
Single parent household with children	2.524	0.004	0.035	595.988	2.513	2.535
Paying rent for accommodation	1.828	0.002	0.057	957.536	1.823	1.833
One-person household	1.441	0.002	0.047	777.156	1.436	1.446
For all coefficients, p < 0.000						
R² = 0.382						

Second, similar to the first set of linear regressions, the subjective burden of total housing costs was the strongest predictor of deprivation in both SAL and nonSAL households, and a much stronger predictor for SAL households. The value of the

coefficient of the subjective burden of total housing cost compared to the household income coefficient suggests that a household's assessment of its housing costs compared to household income is a major contributory factor to household deprivation. The burden of debt repayment was also a high predictor for all households. For nonSAL households, low work intensity was the second highest predictor of deprivation. These findings highlight additional contributors to deprivation that are income related but which limit the validity of household income as the sole proxy of a household's quality of life.

Table 6.12: Differences in SAL and nonSAL households' regression coefficients in second linear model of predictors of deprivation, signifying interaction effects of predictors with whether or not a household has SAL circumstances (2018 trimmed sample)

	SAL households coefficients	nonSAL households coefficients	coefficients difference SAL - nonSAL
	B SAL	B nonSAL	
(Constant)	12.297	8.832	3.465
HEDI as % of country median HEDI	-0.081	-0.046	-0.035
Total housing costs a heavy burden	13.81	10.661	3.149
Debt repayments a heavy burden	8.023	7.321	0.702
Low work intensity	6.018	8.833	-2.815
Overcrowded household	5.915	4.601	1.314
No non-material support	4.766	4.935	-0.169
No material support	4.357	4.019	0.338
General bad health circumstances	3.844	5.699	-1.855
Single parent household with children	3.758	2.524	1.234
Paying rent for accommodation	3.507	1.828	1.679
One-person household	2.094	1.441	0.653

Third, for all households, even if none of the circumstances covered by the predictors are present, they are still likely to be experiencing some deprivation when their income falls between the AROP threshold and the MHEDI.

6.3.3 Regression analysis at country level

The regression results described so far were based on the aggregate scores of all households from all the countries. They conceal country differences and particularities. In order to explore possible dissimilarities and variations, the regression analyses with the continuous household income predictor variable used above together with the other predictors were repeated for all countries with the trimmed sample (the full results of the country regressions and details of the

trimmed samples used are given in Appendix K, Table K.1 to Table K.32, pp. 573-604).

Clearly, there are country effects on the level of deprivation as represented by the constant coefficient for each country, varying from a low of 2.6 for SAL households in Finland and 3.1 for nonSAL households in Sweden to a high of 36.3 for SAL households and 31.4 for nonSAL households in Romania. Also, the income predictor coefficients give a sense of how the predicted deprivation score decreases with an increase in income, all other things being equal. The main findings from the country predictions are the following:

First, in the majority of the countries surveyed, the heavy burden of total housing costs was the strongest predictor of deprivation for all households. For SAL households, this predictor was the strongest in 23 countries followed by the heavy burden of debt repayments in five countries; likewise for nonSAL households, with 19 countries having the housing costs burden and 7 countries the debt repayment burden as the main predictors. Although both these predictors have a direct impact on a household's realistic disposable income, the prevalence of the burden of housing costs is especially noteworthy considering the minimal flexibility that most households have in managing payments related to their housing costs.

Second, the size of the housing costs burden predictor coefficient compared to the income predictor coefficient is indicative of the impact of housing costs on a household's disposable income. In all countries, any household with an income below the AROP threshold would not be able to overcome the deprivation predicted as a result of the burden of housing costs; and in most countries, an income at the median would still not overcome the predicted deprivation.

Third, the country regressions also predict a higher level of deprivation for SAL households in 25 out of the 32 countries when all predictors are present, without factoring in any income. At 50% of MHEDI, the situation is unchanged. At the MHEDI, one other country shifts in favour of SAL households, and at 150% of MHEDI, 20 countries show higher predicted deprivation scores for SAL households (see Table K.33, p. 605 in Appendix K).

Fourth, amongst the countries for which the predicted deprivation scores are less for SAL households, there are a mix of low and high country MDI averages. For instance, Norway's MDI average for 2018 was 5.0 points and Bulgaria's was 26.7 points. At the other end, amongst the countries with the highest predicted differences in deprivation scores for SAL households there were countries with high MDI averages like Romania (27.5 points) and Serbia (25.1 points) but also Poland (11.2 points) and Luxembourg (6.5 points). The picture is even less clear when one considers the 2018 differences in the country averages MDI scores for SAL and nonSAL households, with Bulgaria (9.7 points) and Norway (8.6 points) from one end, and Romania (13.9 points), Serbia (11.7 points), Poland (7.7 points) and Luxembourg (5.8 points) at the other end. This contradiction between the scores predicted by the country regressions and the actual deprivation averages can be explained on the basis of the actual prevalence of the deprivation situations covered by the MDI; the actual MDI averages depict the score computed based on the household's actual situation while the predicted score envisages the presence of the deprivation indicators.

Fifth, most of the deprivation predictors had a larger impact on SAL households (as measured by their regression coefficients). The two predictors with generally higher coefficients for nonSAL households were households with a bad health situation and households with low work intensity.

6.3.4 Households burdened with housing costs and deprivation

The previous analyses indicated the subjective burden of total housing costs as a main predictor of deprivation in both SAL and nonSAL households. In order to explore this finding further, an interaction variable of income and burden of housing costs was added to the linear model discussed above. The theoretical assumption here is that, the extent to which a household's subjective assessment of its housing costs as a heavy burden predicts a household's deprivation, depends on the household's income; put differently, the combined effect of a household that considers its housing costs a heavy burden when the household has low income is more than what is predicted by the individual effect of each variable. For the

purpose of this section, the coefficients that concern us are summarised in the following table (see Table K.34 and Table K.35 , p. 606 in Appendix K for full results):

Table 6.13: Summary of non-interaction and interaction linear model predicting deprivation

	non interaction model		interaction model	
	SAL households coefficients	nonSAL households coefficients	SAL households coefficients	nonSAL households coefficients
(Constant)	12.297	8.832	10.121	7.186
HEDI as % of country median HEDI	-0.081	-0.046	-0.059	-0.032
Total housing costs a heavy burden	13.81	10.661	20.687	18.216
HEDI x Housing costs burden	NA	NA	-0.078	-0.076
R²	0.434	0.382	0.443	0.398
For all coefficients, p < 0.000				
All coefficients have relative narrow 99% confidence intervals that do not cross the zero threshold.				

Table 6.14: Predicted scores for deprivation as a result of the burden of total housing costs

		non interaction model			interaction model		
		50% of MHEDI	MHEDI	150% of MHEDI	50% of MHEDI	MHEDI	150% of MHEDI
housing costs a burden	SAL	22.057	18.007	13.957	23.958	17.108	10.258
	nonSAL	17.193	14.893	12.593	20.002	14.602	9.184
housing costs not a burden	SAL	8.247	4.197	0.147	7.171	4.221	1.271
	nonSAL	6.532	4.232	1.932	5.586	3.986	2.368

The two models were used to work out the predicted deprivation score for three levels of income, at 50% of MHEDI, at MHEDI, and at 150% of MHEDI, for both SAL and nonSAL households, without any of the other deprivation situations covered by the predictors of the linear model (see predicted scores in Table 6.14 above and Table K.36 to Table K.43, pp. 607-608 in Appendix K for workings). The predicted scores in the three income scenarios illustrate how households that experience their total housing costs as a heavy burden are more negatively or positively affected by changes in income when compared to non-burdened households. Moreover, this effect is experienced more acutely by SAL households especially at the lower income brackets; a change in income of SAL households has a larger impact on the change in household deprivation (as measured by the MDI) than for nonSAL households. A one euro increase or decrease in household income will have the largest effect on deprivation for SAL households considering themselves heavily burdened with

housing costs. This finding parallels Notten and Guio's (2021, p. 151) assertion that "the impact of social transfers on material deprivation is higher when standards of living are lower, an effect that is present both within and across countries."

6.4 Supplementary analyses

The regression analyses carried out so far excluded potential confounders that may capture demographic differences between SAL and nonSAL households. Theoretically, this exclusion was rationalised on the understanding that the focus of this study is the consequential deprivation in the quality of life of SAL households because they are SAL households, that is because they support a household member living with an impairment. Living with an impairment may imply that one's education trajectory is hindered (European Network on Independent living, 2022; European Parliament, 2020; Dávila and Naya, 2007) or that one's employment opportunities are limited (European Network on Independent living, 2022; Vornholt et al., 2018; Hästbacka, Nygård and Nyqvist, 2016). Also, age is likely to increase impairment (Petretto et al, 2019; Putman, 2002). Further analyses will examine to what extent the difference in SAL and nonSAL households' deprivation is explained by demographic confounders (explained in sec. 6.2.9 above). The reference categories used were as follows: for education - tertiary education; for basic activity status - being employed; for age - the 50-64 age group; for sex - male.

In the analyses carried out in Section 6.3, household tenure status and type of household structure were studied with three dichotomous variables. For household tenure, the predictor variable identified households that were paying rent from other households; both SAL and nonSAL households paying rent were likely to experience higher levels of deprivation, with a higher coefficient for SAL households. To further examine its impact on deprivation, household tenure status is further analysed with five categories, using 'outright owner' as the reference category. The previous analyses also identified that being a single parent household with children or a one-person household predicted higher levels of deprivation. This finding is further analysed through eight categories of household structure, using the 'two adults with no children' as the reference category.

Further analyses was also carried out on the burden of housing cost. The housing cost overburden measure used so far is a subjective measure (discussed in subsec. 6.2.5.2 above) which assesses the extent to which a household considers its total housing costs to be a heavy financial burden. This measure is a measure of the subjective financial stress experienced by the household attributed to housing costs; it is not a measure of the actual housing costs of the household as a percentage of the household disposable income. Given that the 40% cost-to-income ratio measure (HCO) does not function like the subjective measure of housing cost (HCB), (see for instance Sunega and Lux, 2016), both predictors were used, first separately and finally together (considering that no multicollinearity concerns resulted).

All the further analyses were carried out with the trimmed sample (described in sec. 6.3.2 above), and separate regressions were run for SAL and nonSAL households (explained in sec. 6.3 above). The findings are described below.

6.4.1 Including dummy variables for household tenure status, household structure, age, education, activity status, and sex (Models-2)

The first round of further analyses included dummy variables for household tenure status, household structure, age, education, activity status and sex. The predictors explain 46.1% of the variance in MDI deprivation (2.7% more than SALModel-1) for SAL households and 41.6% for nonSAL households (3.4% more than nonSALModel-1). The summary data of the two regression analyses for SAL and nonSAL households are given in Table 6.15 and Table 6.16 below (pp. 285-286). The new regressions will be referred to as SALModel-2 and nonSALModel-2 and the main results are summarised below, highlighting any notable developments from SALModel-1 and nonSALModel-1:

First, the predicted deprivation for SAL and nonSAL households at the reference categories, disregarding their equivalised disposable income and without any of the situations covered by the predictors is more for SAL households compared to nonSAL households (3.2 points on the MDI). This marginally larger predicted deprivation score concerns a SAL household of two adults with no children, with a male person outright owner of their accommodation, who is employed, in the 50-64 years age category, with a tertiary level of education.

Table 6.15: Linear model of predictors of deprivation in SAL households, including dummy variables for sex, age, education, activity status, housing tenure and household structure (2018 trimmed sample) – SALModel-2

	unstandardised coefficients		standardised coefficients	t	99.0% confidence interval for B	
	B	std. error	Beta		Lower Bound	Upper Bound
(Constant)	9.486	0.014		664.045	9.449	9.523
HEDI as % of country median HEDI (MHEDI)	-0.069	0	-0.183	-1104.956	-0.069	-0.069
Total housing costs subjective heavy burden	12.909	0.006	0.335	2141.951	12.894	12.925
Debt repayments a heavy burden	7.403	0.011	0.104	691.926	7.375	7.43
Low work intensity	3.779	0.009	0.076	437.262	3.757	3.801
Overcrowded household	4.559	0.009	0.078	501.877	4.536	4.583
No non-material support	4.385	0.009	0.086	500.303	4.363	4.408
No material support	4.621	0.007	0.115	665.218	4.603	4.639
General bad health circumstances	3.771	0.006	0.095	638.722	3.756	3.786
Sex (ref: male)						
female	1.51	0.006	0.04	254.134	1.494	1.525
Age (ref: 50-64)						
16-34	1.669	0.015	0.017	109.656	1.629	1.708
35-49	0.245	0.01	0.005	25.627	0.22	0.269
65-72	-1.356	0.011	-0.027	-128.18	-1.384	-1.329
73+	-3.864	0.01	-0.097	-381.32	-3.89	-3.838
Education (ref: tertiary education)						
primary or lower vs tertiary	6.357	0.01	0.136	646.674	6.331	6.382
lower secondary vs tertiary	3.849	0.009	0.085	418.331	3.825	3.873
upper secondary & post-secondary non-tertiary	1.756	0.008	0.046	217.442	1.735	1.776
Activity status (ref: at work)						
unemployed	6.72	0.014	0.08	473.947	6.683	6.756
in retirement or early retirement	-0.203	0.011	-0.005	-18.736	-0.23	-0.175
other inactive person	1.946	0.01	0.041	193.05	1.92	1.972
Tenure (ref: outright owner)						
owner paying mortgage	-0.819	0.01	-0.014	-85.144	-0.844	-0.795
accommodation rented at prevailing or market rate	2.458	0.007	0.056	329.111	2.439	2.478
accommodation rented at a reduced rate	3.888	0.011	0.053	339.678	3.859	3.918
accommodation provided free	2.288	0.013	0.026	171.906	2.254	2.322
Household structure (ref: 2 adults no children)						
single person no children	2.139	0.007	0.054	300.571	2.121	2.158
other households no children	0.431	0.01	0.007	45.31	0.407	0.456
2 adults 1 or 2 children	0.528	0.012	0.008	44.542	0.497	0.558
2 adults 3 or more children	0.831	0.025	0.005	33.929	0.768	0.895
single parent with 1 or more children	3.083	0.019	0.026	164.862	3.035	3.131
other households with children	1.791	0.013	0.022	134.783	1.756	1.825
other households not classified	-3.495	0.046	-0.011	-76.78	-3.612	-3.378
For all coefficients, p < 0.001						
R² = 0.461						

Table 6.16: Linear model of predictors of deprivation in nonSAL households, including dummy variables for sex, age, education, activity status, housing tenure and household structure (2018 trimmed sample) – nonSALModel-2

	unstandardised coefficients		standardised coefficients	t	99.0% confidence interval for B	
	B	std. error	Beta		Lower Bound	Upper Bound
(Constant)	6.245	0.004		1633.219	6.236	6.255
HEDI as % of country median HEDI (MHEDI)	-0.036	0	-0.16	-2457.272	-0.036	-0.036
Total housing costs subjective heavy burden	9.766	0.002	0.293	4870.159	9.761	9.771
Debt repayments a heavy burden	7.196	0.004	0.107	1864.443	7.186	7.206
Low work intensity	6.223	0.004	0.105	1655.095	6.213	6.232
Overcrowded household	3.922	0.003	0.087	1461.556	3.915	3.929
No non-material support	4.598	0.003	0.093	1381.608	4.589	4.607
No material support	3.9	0.002	0.107	1590.411	3.893	3.906
General bad health circumstances	5.016	0.003	0.086	1497.525	5.007	5.024
Sex (ref: male)						
female	1.219	0.002	0.041	681.499	1.214	1.223
Age (ref: 50-64)						
16-34	-0.337	0.003	-0.008	-118.393	-0.344	-0.33
35-49	0.348	0.002	0.011	141.732	0.341	0.354
65-72	-0.415	0.004	-0.01	-113.873	-0.425	-0.406
73+	-1.89	0.004	-0.046	-501.787	-1.899	-1.88
Education (ref: tertiary education)						
primary or lower vs tertiary	6.367	0.003	0.129	1888.677	6.359	6.376
lower secondary vs tertiary	3.883	0.003	0.096	1434.954	3.876	3.89
upper secondary & post-secondary non-tertiary	1.722	0.002	0.058	855.319	1.717	1.727
Activity status (ref: at work)						
unemployed	8.381	0.005	0.115	1862.101	8.369	8.392
in retirement or early retirement	-0.52	0.003	-0.016	-153.215	-0.529	-0.511
other inactive person	0.656	0.004	0.011	176.347	0.647	0.666
Tenure (ref: outright owner)						
owner paying mortgage	-1.256	0.002	-0.036	-530.781	-1.262	-1.25
accommodation rented at prevailing or market rate	1.158	0.002	0.034	504.488	1.152	1.164
accommodation rented at a reduced rate	3.602	0.004	0.054	902.291	3.592	3.612
accommodation provided free	1.259	0.004	0.018	306.839	1.249	1.27
Household structure (ref: 2 adults no children)						
single person no children	1.29	0.002	0.042	584.934	1.284	1.296
other households no children	0.339	0.004	0.006	95.481	0.33	0.349
2 adults 1 or 2 children	-0.222	0.003	-0.006	-80.518	-0.23	-0.215
2 adults 3 or more children	1.173	0.005	0.014	223.922	1.159	1.186
single parent with 1 or more children	2.023	0.005	0.028	441.212	2.011	2.035
other households with children	0.883	0.004	0.012	199.74	0.872	0.895
other households not classified	-2.618	0.012	-0.012	-216.712	-2.649	-2.587
For all coefficients, p < 0.001						
R² = 0.416						

Second, as the income increases, the deprivation score decreases faster for SAL households than for nonSAL households. The difference in the SAL and nonSAL households' coefficients for their equivalised income is minimally less than the difference in Models-1, likewise representing an interaction effect that suggests SAL households' deprivation to be more susceptible to changes in household disposable income. Using these predicted values, the MDI scores for SAL and nonSAL households at 60% of MHEDI (AROP threshold) are 5.3 and 4.1 respectively (1.2 points difference); the difference between SAL and nonSAL households at the reference categories without any additional predictor situations disappears at 98.2% of the MHEDI at which point the predicted deprivation is 2.7 points. The model also predicts that SAL and nonSAL households with two adults in the 65-72 age group, who are retired, with no dependent children, with a male outright owner of their accommodation, having a tertiary level of education and earning minimally above 79.3% of the AROP threshold have the same predicted deprivation score of 2.5 points.

Third, following the introduction of the dummy variables for household characteristics, there was no change in the general pattern indicated by the predictors for SAL and nonSAL households. The main predictor remained the subjective burden of housing costs, minimally less for both categories but with a similar difference of more than 3 points. The coefficients for low work intensity were 2.2 and 2.6 points less than in SALModel-1 and nonSALModel-1, but this change has to factor in the introduction of the activity status of the household in the new analyses. In fact, the unemployed activity status predicted a substantial increase in deprivation for all households (compared to the 'in work' reference category) and more so for nonSAL households (corresponding to the low work intensity predictor).

Fourth, for both categories of households, a female responsible for the accommodation increased marginally the predicted deprivation. SAL and nonSAL households also showed an equivalent pattern for the impact of education on deprivation with the predicted deprivation being circa 6.4 points more for households with a primary or lower education level when compared to households with a tertiary education.

Fifth, age provided unexpected results, with different deprivation patterns across the age categories for SAL and nonSAL households. For SAL households, the 16-34 age category predicted the highest level of deprivation (compared to the reference category 50-64 age group) with the deprivation decreasing gradually for each category; being in the 73+ age category predicted 3.9 points less in deprivation compared to the 50-64 age category. The impact of age functioned differently for nonSAL households; there were only minor differences in deprivation between the first four age categories with a drop of 1.9 points in the 73+ age category compared to the reference category. These results reveal an intriguing pattern: controlling for all other predictor variables, the most significant deprivation gap between SAL and nonSAL households is observed in the 16-34 age category (5.2 points), whereas the smallest disparity is found in the 73+ age category (1.3 point). This seemingly counterintuitive finding warrants further discussion, and will be explored in more detail alongside the additional analyses to follow. It does, however, parallel the last published Eurostat data for the severe material and social deprivation rate by age group for 2021; the SMSD rate was highest amongst persons under 18 years (7.5%), less in the 18-64 years category (6.3%) and least for persons 65 years and over (5.3%) (Eurostat, 2022b).

Sixth, for households renting at reduced or non-market rates the predicted deprivation was at least 3.6 points more than for outright owners, marginally more than for households renting at market rates (1.4 points for SAL households and 2.4 points for nonSAL households), and also marginally more than for households provided with free accommodation (1.6 points for SAL households and 2.3 points for nonSAL households). One plausible explanation for this finding is that households renting at reduced or non-market rates are those households who are being provided with subsidised housing because of their low income, which in turn explains the deprivation predictive value of their tenure status. For owners paying mortgage, the predicted deprivation values are marginally less than for outright owners. SAL households renting at market prices and those for whom accommodation is free have higher predicted deprivation than nonSAL households.

Finally, single parents with one or more children had the highest predicted deprivation compared to two adult households with no children (3.1 points for SAL

households and 2.0 points for nonSAL households). These households were followed by single person households with no children (2.1 points for SAL households and 1.3 points for nonSAL households) and other households with children (1.8 points for SAL households and 0.9 points for nonSAL households).

The above analyses gives a more detailed picture of similarities and differences in deprivation between the two categories of households being examined. SAL households AROP with the person responsible for accommodation being a female single parent with children, in the 16-34 age category, with a primary or lower level of education, unemployed, renting at reduced rates, have the highest predicted deprivation scores and more than equivalent nonSAL households (28.6 vs 25.3 points, 3.2 points more for SAL households). As households age, the predicted deprivation difference between SAL and nonSAL households decreases. For both SAL and nonSAL households, the subjective burden of housing costs was the highest predictor of deprivation. All other predictors followed similar patterns to Models-1.

In the following analyses, the subjective burden of housing costs predictor will be replaced with the objective cost-to-income ratio predictor. Given that the two variables do not function in the same way, the expectation was that the objective measure will give different results to the subjective one.

6.4.2 Replacing the subjective housing burden measure with the objective measure of housing cost overburden (Models-3)

The second round of further analyses removed the subjective burden of housing costs predictor (HCB) and introduced the objective costs-to-income ratio housing overburden predictor (HCO). The summary data of the two regression analyses for SAL and nonSAL households are given in Table 6.17 and Table 6.18 below (p. 290 & p. 291 respectively). The new regressions will be referred to as SALModel-3 and nonSALModel-3 and the main changes from SALModel-2 and nonSALModel-2 are summarised below. SALModel-3 explains 36.5% of the variance in MDI for SAL households (down 9.6% from SALModel-2) and nonSALModel-3 explains 34.7% of the variance in MDI for nonSAL households (down 6.8% from nonSALModel-2).

Table 6.17: Linear model of predictors of deprivation in SAL households, replacing subjective housing burden predictor with objective measure of housing cost overburden (2018 trimmed sample) – SALModel-3

	unstandardised coefficients		standardised coefficients	t	99.0% confidence interval for B	
	B	std. error	Beta		Lower Bound	Upper Bound
(Constant)	12.286	0.016		783.709	12.245	12.326
HEDI as % of country median HEDI (MHEDI)	-0.079	0	-0.211	-1141.147	-0.08	-0.079
Housing cost overburden (40%)	3.482	0.009	0.067	373.967	3.458	3.506
Total housing costs subjective heavy burden	-	-	-	-	-	-
Debt repayments a heavy burden	11.587	0.011	0.164	1010.281	11.558	11.617
Low work intensity	4.37	0.009	0.088	463.192	4.346	4.394
Overcrowded household	5.891	0.01	0.101	593.883	5.865	5.916
No non-material support	4.956	0.01	0.097	518.439	4.931	4.981
No material support	4.984	0.008	0.124	658.126	4.965	5.004
General bad health circumstances	5.024	0.006	0.127	783.193	5.007	5.04
Sex (ref: male)						
female	2.114	0.006	0.056	326.056	2.097	2.13
Age (ref: 50-64)						
16-34	1.511	0.017	0.015	90.631	1.468	1.554
35-49	0.163	0.01	0.003	15.608	0.136	0.19
65-72	-1.311	0.012	-0.026	-113.818	-1.341	-1.282
73+	-4.033	0.011	-0.102	-365.375	-4.061	-4.004
Education (ref: tertiary education)						
primary or lower vs tertiary	9.034	0.011	0.195	846.374	9.007	9.062
lower secondary vs tertiary	4.459	0.01	0.098	442.644	4.433	4.485
upper secondary & post-secondary non-tertiary	2.355	0.009	0.061	267.02	2.332	2.377
Activity status (ref: at work)						
unemployed	8.575	0.015	0.102	553.982	8.535	8.615
in retirement or early retirement	-0.25	0.012	-0.007	-21.242	-0.28	-0.22
other inactive person	2.424	0.011	0.05	220.084	2.396	2.452
Tenure (ref: outright owner)						
owner paying mortgage	-1.08	0.011	-0.018	-102.715	-1.107	-1.053
accommodation rented at prevailing or market rate	1.22	0.008	0.028	145.619	1.198	1.241
accommodation rented at a reduced rate	2.857	0.013	0.039	228.283	2.825	2.889
accommodation provided free	2.289	0.015	0.026	157.457	2.251	2.326
Household structure (ref: 2 adults no children)						
single person no children	1.983	0.008	0.05	252.595	1.963	2.003
other households no children	1.371	0.01	0.024	132.536	1.345	1.398
2 adults 1 or 2 children	1.573	0.013	0.023	121.276	1.539	1.606
2 adults 3 or more children	1.446	0.027	0.009	53.669	1.377	1.516
single parent with 1 or more children	4.378	0.02	0.037	213.929	4.325	4.43
other households with children	2.853	0.014	0.035	197.023	2.816	2.891
other households not classified	-1.808	0.05	-0.006	-35.846	-1.938	-1.678
For all coefficients, p < 0.001						
R² = 0.365						

Table 6.18: Linear model of predictors of deprivation in nonSAL households, replacing subjective housing burden predictor with the objective measure of housing cost overburden (2018 trimmed sample) – nonSALModel-3

	unstandardised coefficients		standardised coefficients	t	99.0% confidence interval for B	
	B	std. error	Beta		Lower Bound	Upper Bound
(Constant)	7.488	0.004		1829.464	7.477	7.498
HEDI as % of country median HEDI (MHEDI)	-0.038	0	-0.168	-2364.67	-0.038	-0.038
Housing cost overburden (40%)	4.277	0.003	0.099	1490.699	4.269	4.284
Total housing costs subjective heavy burden						
Debt repayments a heavy burden	10.694	0.004	0.159	2633.118	10.683	10.704
Low work intensity	6.429	0.004	0.107	1597.673	6.418	6.439
Overcrowded household	4.882	0.003	0.109	1708.023	4.874	4.889
No non-material support	5.152	0.004	0.104	1457.673	5.143	5.161
No material support	4.055	0.003	0.112	1559.856	4.048	4.062
General bad health circumstances	6.151	0.004	0.106	1735.832	6.142	6.16
Sex (ref: male)						
female	1.507	0.002	0.051	792.769	1.502	1.512
Age (ref: 50-64)						
16-34	-0.628	0.003	-0.015	-206.754	-0.636	-0.62
35-49	0.588	0.003	0.018	225.287	0.581	0.594
65-72	-0.456	0.004	-0.011	-117.955	-0.466	-0.446
73+	-2.129	0.004	-0.052	-533.383	-2.14	-2.119
Education (ref: tertiary education)						
primary or lower vs tertiary	8.672	0.004	0.176	2438.53	8.663	8.681
lower secondary vs tertiary	4.939	0.003	0.123	1722.013	4.932	4.947
upper secondary & post-secondary non-tertiary	2.116	0.002	0.072	988.664	2.111	2.122
Activity status (ref: at work)						
unemployed	9.42	0.005	0.128	1963.264	9.407	9.432
in retirement or early retirement	-0.688	0.004	-0.022	-191.185	-0.698	-0.679
other inactive person	0.791	0.004	0.013	198.492	0.78	0.801
Tenure (ref: outright owner)						
owner paying mortgage	-1.414	0.003	-0.04	-562.332	-1.421	-1.408
accommodation rented at prevailing or market rate	0.229	0.002	0.007	92.173	0.223	0.236
accommodation rented at a reduced rate	2.752	0.004	0.041	649.673	2.741	2.763
accommodation provided free	1.374	0.004	0.02	314.25	1.363	1.385
Household structure (ref: 2 adults no children)						
single person no children	0.932	0.002	0.03	395.419	0.926	0.938
other households no children	1.019	0.004	0.018	269.549	1.01	1.029
2 adults 1 or 2 children	0.371	0.003	0.01	126.143	0.363	0.378
2 adults 3 or more children	1.765	0.006	0.021	317.212	1.75	1.779
single parent with 1 or more children	2.575	0.005	0.036	528.557	2.562	2.587
other households with children	1.895	0.005	0.027	403.757	1.883	1.907
other households not classified	-1.438	0.013	-0.007	-110.724	-1.471	-1.404
For all coefficients, p < 0.001						
R² = 0.347						

Expectedly, the HCO did not emulate the HCB in its predictive power. Although it is a predictor of deprivation, minimally more so for nonSAL (4.3 points) than for SAL (3.5 points) households, it is not comparable to a low level of education, or to being unemployed, or to the burden of debt repayment.

The net effect of replacing HCB with HCO was that most of the coefficients of the other predictors increased, notably the coefficients for the burden of debt repayment and for low level of education. Consequently, with Models-3, the predicted deprivation difference for SAL and nonSAL households at the reference categories, disregarding their equivalised disposable income and without any of the situations covered by the predictors is 4.8 points (3.2 in Models-2). This larger predicted difference in deprivation score concerns households of two adults with no children, with a male person outright owner of their accommodation, who is employed, in the 50-64 years age category, with a tertiary level of education. If these households' total housing costs exceeded 40% of their disposable income, their predicted deprivation would increase by 3.5 for SAL households and 4.3 for nonSAL households; that is to say, at the reference categories, the deprivation of SAL households are predicted to exceed that of nonSAL households by 4.0 points when both categories have housing costs exceeding 40% of their disposable income

In a comparable manner to the other models, as the income increases the deprivation score decreases faster for SAL households than for nonSAL households, again suggesting SAL households' deprivation to be more susceptible to changes in household disposable income. Using Models-3, the predicted deprivation values for SAL and nonSAL households at the reference categories with a HEDI at 60% of MHEDI (AROP threshold) are 7.5 and 5.2 respectively (2.3 points difference). For SAL and nonSAL households at the reference categories, with housing costs exceeding 40% of their disposable income but without any additional predictor situations, the predicted difference between them disappears when their HEDI exceeds 97.6% of MHEDI, at which point both categories of household will have a predicted deprivation of 8.1 points.

Removing HCB and replacing it with HCO resulted in a marginal increase in the MDI difference between SAL and nonSAL households for households at the reference categories. When factoring in both categories of households paying over 40% of

their disposable income in housing costs, the difference in their predicted deprivation is minimally less, but SAL households' predicted deprivation is more than that of nonSAL households up to 97.6% of MHEDI.

At this point, we know that for all households whose housing costs top 40% of their disposable income the predicted deprivation is more than for other households, though not remarkable. Moreover, for households who consider their housing costs a heavy burden, the predicted deprivation score is substantially more. We also know that the predictors function differently and show different aspects of housing related costs. HCO is a simple ratio of total housing costs over a household's disposable income; HBO reflects how the households evaluates its housing costs in the context of its disposable income but also in the context of its needs, its expectations and reference point, and possibly other subjective considerations such as whether they judge their housing costs as justifiable, or a worthwhile outlay for what they are getting, or as reasonable given the burden it puts on the household. Theoretically, a household can consider its housing costs a heavy burden but still not be materially deprived. And a household may be materially deprived but not experience their housing costs as a heavy burden, such as when accommodation is provided free. Given the distinctive nature of both predictors, both predictors are included together in the ensuing analyses.

6.4.3 The final micro model with both subjective and objective housing cost predictors (Models-4)

The final analyses included both the subjective (HCB) and objective housing cost overburden (HCO) predictors and an interaction variable of income and HCO. In the original model, the interaction variable of income and HCB showed that households considering themselves heavily burdened with housing costs were the most sensitive to a change in household disposable income. The underlying theoretical assumption for including the income x HCO interaction in this further analysis is that the overburden of housing costs is contingent upon household income; the lower the household income, the combined effect of the housing costs and income goes beyond the individual effect of each variable, leading to a heightened level of deprivation.

Table 6.19: Linear model of predictors of deprivation in SAL households, with both the objective measure of housing cost overburden and subjective housing burden measure, and interaction for income and objective housing cost overburden (2018 trimmed sample) – SALModel-4

	unstandardised coefficients		standardised coefficients	t	99.0% confidence interval for B	
	B	std. error	Beta		Lower Bound	Upper Bound
(Constant)	8.669	0.015		591.136	8.631	8.707
HEDI as % of country median HEDI (MHEDI)	-0.063	0	-0.168	-959.069	-0.064	-0.063
HEDI as % MHEDI x Housing cost overburden (40%)	-0.047	0	-0.059	-183.605	-0.048	-0.046
Housing cost overburden (40%)	4.669	0.017	0.089	268.341	4.624	4.714
Total housing costs subjective heavy burden	12.739	0.006	0.331	2093.59	12.723	12.754
Debt repayments a heavy burden	7.442	0.011	0.105	691.116	7.414	7.47
Low work intensity	3.661	0.009	0.074	420.201	3.638	3.683
Overcrowded household	4.636	0.009	0.08	505.58	4.613	4.66
No non-material support	4.257	0.009	0.083	482.45	4.235	4.28
No material support	4.621	0.007	0.115	661.327	4.603	4.639
General bad health circumstances	3.808	0.006	0.097	640.047	3.793	3.824
Sex (ref: male)						
female	1.564	0.006	0.041	261.304	1.549	1.579
Age (ref: 50-64)						
16-34	1.749	0.015	0.018	113.744	1.709	1.788
35-49	0.243	0.01	0.005	25.246	0.219	0.268
65-72	-1.33	0.011	-0.027	-125.107	-1.357	-1.302
73+	-3.721	0.01	-0.094	-365.365	-3.748	-3.695
Education (ref: tertiary education)						
primary or lower vs tertiary	6.495	0.01	0.14	654.587	6.469	6.52
lower secondary vs tertiary	3.92	0.009	0.086	421.683	3.896	3.944
upper secondary & post-secondary non-tertiary	1.81	0.008	0.047	222.375	1.789	1.831
Activity status (ref: at work)						
unemployed	6.664	0.014	0.079	465.381	6.627	6.701
in retirement or early retirement	-0.158	0.011	-0.004	-14.507	-0.186	-0.13
other inactive person	1.882	0.01	0.039	185.18	1.856	1.908
Tenure (ref: outright owner)						
owner paying mortgage	-0.796	0.01	-0.014	-82.042	-0.821	-0.771
accommodation rented at prevailing or market rate	2.246	0.008	0.051	288.701	2.226	2.266
accommodation rented at a reduced rate	4.111	0.012	0.056	355.479	4.081	4.141
accommodation provided free	2.286	0.013	0.026	170.508	2.252	2.321
Household structure (ref: 2 adults no children)						
single person no children	1.94	0.007	0.049	267.663	1.921	1.958
other households no children	0.435	0.01	0.008	45.513	0.41	0.459
2 adults 1 or 2 children	0.629	0.012	0.009	52.582	0.598	0.66
2 adults 3 or more children	1.221	0.025	0.008	49.113	1.157	1.285
single parent with 1 or more children	2.664	0.019	0.023	141.005	2.616	2.713
other households with children	1.979	0.013	0.024	148.049	1.944	2.013
other households not classified	-3.44	0.047	-0.011	-73.933	-3.56	-3.32
For all coefficients, p < 0.001						
R² = 0.46						

Table 6.20: Linear model of predictors of deprivation in nonSAL households, with both the objective measure of housing cost overburden and subjective housing burden measure, and interaction for income and objective housing cost overburden (2018 trimmed sample) – nonSALModel-4

	unstandardised coefficients		standardised coefficients	t	99.0% confidence interval for B	
	B	std. error	Beta		Lower Bound	Upper Bound
(Constant)	5.409	0.004		1385.873	5.399	5.419
HEDI as % of country median HEDI (MHEDI)	-0.031	0	-0.136	-1986.406	-0.031	-0.031
HEDI as % MHEDI x Housing cost overburden (40%)	-0.032	0	-0.055	-514.691	-0.033	-0.032
Housing cost overburden (40%)	5.159	0.005	0.12	1060.096	5.147	5.172
Total housing costs subjective heavy burden	9.609	0.002	0.288	4752.979	9.604	9.615
Debt repayments a heavy burden	7.401	0.004	0.11	1900.567	7.391	7.411
Low work intensity	5.809	0.004	0.097	1525.679	5.799	5.819
Overcrowded household	3.933	0.003	0.088	1454.599	3.926	3.94
No non-material support	4.593	0.003	0.092	1376.973	4.584	4.602
No material support	3.884	0.002	0.107	1583.779	3.877	3.89
General bad health circumstances	5.012	0.003	0.087	1495.45	5.003	5.02
Sex (ref: male)						
female	1.231	0.002	0.041	686.257	1.226	1.236
Age (ref: 50-64)						
16-34	-0.357	0.003	-0.009	-124.478	-0.364	-0.349
35-49	0.409	0.002	0.013	166.21	0.403	0.415
65-72	-0.362	0.004	-0.008	-99.175	-0.371	-0.352
73+	-1.795	0.004	-0.044	-476.57	-1.804	-1.785
Education (ref: tertiary education)						
primary or lower vs tertiary	6.577	0.003	0.134	1944.051	6.568	6.586
lower secondary vs tertiary	3.905	0.003	0.097	1438.737	3.898	3.912
upper secondary & post-secondary non-tertiary	1.794	0.002	0.061	888.01	1.789	1.799
Activity status (ref: at work)						
unemployed	8.065	0.005	0.11	1777.338	8.053	8.076
in retirement or early retirement	-0.54	0.003	-0.017	-158.906	-0.548	-0.531
other inactive person	0.411	0.004	0.007	109.328	0.401	0.421
Tenure (ref: outright owner)						
owner paying mortgage	-1.244	0.002	-0.035	-524.404	-1.25	-1.238
accommodation rented at prevailing or market rate	0.676	0.002	0.02	287.296	0.67	0.682
accommodation rented at a reduced rate	3.437	0.004	0.051	859.531	3.427	3.447
accommodation provided free	1.323	0.004	0.019	320.849	1.312	1.334
Household structure (ref: 2 adults no children)						
single person no children	1.029	0.002	0.033	462.762	1.023	1.035
other households no children	0.392	0.004	0.007	109.7	0.382	0.401
2 adults 1 or 2 children	-0.141	0.003	-0.004	-50.707	-0.148	-0.133
2 adults 3 or more children	1.339	0.005	0.016	255.16	1.326	1.353
single parent with 1 or more children	1.964	0.005	0.027	427.298	1.952	1.976
other households with children	1.038	0.004	0.015	234.301	1.027	1.05
other households not classified	-2.435	0.012	-0.011	-198.768	-2.466	-2.403
For all coefficients, p < 0.001						
R² = 0.419						

Consistent with previous research (see for instance Sunega and Lux, 2016), the 40% cost-to-income ratio housing costs overburden measure (HCO) does not function like the subjective measure (HCB). It is not as strong a predictor of deprivation as the subjective measure. Moreover, coefficients for nonSAL households were marginally stronger in the non-interaction model.

SALModel-4 explains 46% of SAL household deprivation while nonSALModel-4 explains 41.9% of nonSAL household deprivation. The summary of the two regressions analyses are given in Table 6.19 and Table 6.20 above (pp. 294-295). The coefficients of the new model correspond closely to those of Models-2 in direction and quantity; in essence, including the HCO and the income x HCO interaction did not change Models-1 with the exception of a minimal decrease in the value of the constant. For households at the reference categories, the predicted difference between SAL and nonSAL households disappears at the MHEDI.

Table 6.21: Predicted scores of deprivation using Models-4, for SAL and nonSAL households with and without objective housing costs overburden (HCO) and subjective housing costs heavy burden (HCB)

		Models-4 (including interaction income x HCO)		
		50% of MHEDI	MHEDI	150% of MHEDI
housing costs not a burden	SAL	5.5	2.4	-0.8
	nonSAL	3.8	2.3	0.7
housing costs an objective burden (40%)	SAL	7.9	2.4	-3.1
	nonSAL	7.4	4.2	1.0
housing costs a subjective heavy burden	SAL	18.2	15.1	11.9
	nonSAL	13.3	11.8	10.2
housing costs both a subjective and objective burden	SAL	20.6	15.1	9.6
	nonSAL	16.9	13.7	10.5

The two models were used to work out the predicted deprivation scores for three levels of income, at 50% of MHEDI, at MHEDI, and at 150% of MHEDI, for both SAL and nonSAL households at the reference categories, without any of the other deprivation situations covered by the predictors of the linear model, in the context of households with and without HCO, HCB and both (see predicted scores in Table 6.21 above). The predicted deprivation scores in the three income scenarios illustrate the impact of housing costs on all households. At the low-income scenario, SAL households' predicted deprivation scores are always more than nonSAL

households' scores. However, the main distinguishing factor concerns households that consider their housing costs a heavy burden. There is no difference in the predicted deprivation between SAL and nonSAL household with their housing cost exceeding 40% of their disposable income, while at the country median income the predicted deprivation score of nonSAL households is twice that of SAL household, though moderate. Although the difference between SAL and nonSAL households at the 150% of MHEDI either disappears completely or is fairly small, the predicted deprivation score for all households considering their housing cost a heavy burden remains high. Clearly, a household's assessment of the impact its housing costs has on its ability to do the things it aspires to, includes more than a simple statement on their cost of housing, if not something completely different. The different nature of the subjective and objective housing cost variables has showed up in other studies (discussed above in sec. 6.2.5) in spite of different ways in which the two measures are related (see for instance Heylen, 2023). Borg and Guio's (2021, p. 214) analyses found that the two measures differed to the extent that for the objective measure "some risk factors go in the opposite direction compared with the subjective housing cost overburden and the other housing problems analysed". In this study, both measures are predictors of increased deprivation; however, the subjective measure is much stronger than the objective measures, and especially so in predicting a higher deprivation in SAL households at low income and median income levels.

Summarising the above results, one may suggest two possible ways of making sense of this result:

1. It may be argued that the performance of the subjective housing heavy burden measure in the above analyses is a relationship between two subjective variables in that both are correlated to economic stress. The deprivation measured by the Modified Deprivation Index and the subjective heavy burden of housing costs both reflect a measure of the households' subjective feeling of being poor or subjective economic stress. The argument would be that when a household considers its housing costs 'a heavy burden' it is another way of expressing its difficulty in 'making ends meet' or 'afford unexpected expenses' (two components of the MDI), amongst others.

2. Alternatively, or perhaps as an additional factor, it may be argued that the subjective experience of housing affordability concerns much more than a mathematical ratio of housing costs and household disposable income. Yang and Shen (2008, p. 318) make this point, arguing that affordability in housing “is not a simple question of comparing house prices to family income” for a number of reasons, namely the influence of “the subjective values and differing social expectations of consumers ...[and] ... the large disparities in family income and in housing quality”. In this understanding, the subjective housing cost heavy burden measure is not a measure of what a household actually pays or realistically affords to pay; rather, it is a household’s assessment of their housing costs factoring in the suitability of their housing in comparison to the costs and what they aspire to and the household’s resources in relation to their needs. Consequently, a household paying a hefty mortgage may not consider their housing costs ‘a heavy burden’ because their mortgaged home is what they are working towards; on the contrary, a household living in free accommodation may consider their housing costs a heavy burden because their free accommodation may not be what they aspire to, but they have to accept the free accommodation because they cannot afford otherwise.

These corresponding explanations are tentative suggestions and are in themselves a possible topic for further research. At this point, the conclusion drawn is that while the subjective measure of housing cost burden cannot be interpreted as objective measure of housing costs burden, it is a strong predictor of deprivation, possibly because it reflects a household’s negative assessment of the accommodation it is managing to secure within the reality of their available resources. In this interpretation, it is understandable why the subjective measure of housing cost burden is a stronger predictor for deprivation in SAL households. In essence, if one wants to identify households supporting disabled persons who are experiencing material and subjective deprivation, one will get more information when inquiring about whether their housing costs are a heavy burden than by estimating their actual housing costs as a ratio of their disposable income.

6.4.4 Sensitivity analysis reducing the subjective measure of economic stress component in the MDI

Considering the structure of the MDI and the results obtained in the above analysis, Models-4 were rerun using two slightly modified versions of the MDI.

Table 6.22: Comparing the coefficients for predictors in SALModel-4 and nonSALModel-4, using the MDI and two slightly different versions of the MDI

	SALModel-4			nonSALModel-4		
	MDI	MDI-1	MDI-2	MDI	MDI-1	MDI-2
(Constant)	8.669	8.547	7.328	5.409	5.39	4.709
HEDI as % of country median HEDI (MHEDI)	-0.063	-0.061	-0.053	-0.031	-0.03	-0.024
HEDI as % MHEDI x Housing cost overburden (40%)	-0.047	-0.046	-0.048	-0.032	-0.034	-0.032
Housing cost overburden (40%)	4.669	4.404	4.577	5.159	4.955	4.718
Total housing costs subjective heavy burden	12.739	11.05	10.123	9.609	8.199	7.25
Debt repayments a heavy burden	7.442	6.733	6.026	7.401	6.662	5.617
Low work intensity	3.661	3.584	3.337	5.809	5.606	5.25
Overcrowded household	4.636	4.582	4.384	3.933	3.804	3.568
No non-material support	4.257	4.105	4.008	4.593	4.201	4.158
No material support	4.621	4.585	4.565	3.884	3.845	3.562
General bad health circumstances	3.808	3.633	3.359	5.012	4.845	4.565
Sex (ref: male)						
female	1.564	1.573	1.367	1.231	1.24	0.999
Age (ref: 50-64)						
16-34	1.749	1.722	1.475	-0.357	-0.214	-0.428
35-49	0.243	0.288	0.181	0.409	0.386	0.317
65-72	-1.33	-1.398	-1.413	-0.362	-0.346	-0.271
73+	-3.721	-3.783	-3.688	-1.795	-1.724	-1.591
Education (ref: tertiary education)						
primary or lower vs tertiary	6.495	6.084	5.342	6.577	6.243	5.326
lower secondary vs tertiary	3.92	3.775	3.144	3.905	3.651	3.041
upper secondary & post-secondary non-tertiary	1.81	1.759	1.361	1.794	1.743	1.289
Activity status (ref: at work)						
unemployed	6.664	6.473	6.449	8.065	7.602	7.15
in retirement or early retirement	-0.158	-0.03	0.209	-0.54	-0.489	-0.416
other inactive person	1.882	1.825	1.718	0.411	0.389	0.14
Tenure (ref: outright owner)						
owner paying mortgage	-0.796	-0.894	-1.38	-1.244	-1.124	-1.308
accommodation rented at prevailing or market rate	2.246	2.62	1.528	0.676	0.921	0.143
accommodation rented at a reduced rate	4.111	4.354	3.428	3.437	3.627	2.76
accommodation provided free	2.286	2.203	1.635	1.323	1.158	0.786
Household structure (ref: 2 adults no children)						
single person no children	1.94	1.655	1.196	1.029	0.948	0.644
other households no children	0.435	0.368	0.471	0.392	0.44	0.48
2 adults 1 or 2 children	0.629	0.494	0.475	-0.141	-0.196	-0.209
2 adults 3 or more children	1.221	0.892	0.619	1.339	1.22	1.048
single parent with 1 or more children	2.664	2.076	1.932	1.964	1.789	1.123
other households with children	1.979	1.994	2.098	1.038	1.023	1.19
other households not classified	-3.44	-3.476	-3.585	-2.435	-2.167	-1.994
R²	0.460	0.437	0.404	0.419	0.394	0.360
For all coefficients, p < 0.005						

In the first modified version, MDI-1, the measure 'ability to make ends meet' was removed and the remaining measures, adding up to 96, were calculated as a percentage to give a score comparable to the MDI. The second modified version, MDI-2 removed both the measure 'ability to make ends meet' and 'capacity to face unexpected required expense', and the remaining measures, adding up to 88, were expressed as a percentage. Table 6.22 above gives the coefficients for SALModel-4 and nonSALModel-4 using the MDI, the MDI-1 and the MDI-2.

Using the two slightly different versions of the MDI, the subjective heavy burden of housing costs loses some of its predictive power. However, it remains the most substantial predictor of deprivation for both SAL and nonSAL households, more so for SAL households. Moreover, the overall explanatory picture given by Models-4 does not change with the use of the slightly modified versions of the MDI.

6.4.5 Regression analyses with Models-4 at country level

The analysis with Models-1 at country level (sec. 6.3.3) showed substantial country effects on levels of deprivation. In order to further examine the variation at country level, regression analysis were run for SAL and nonSAL households separately using Models-4. Summary tables comparing the Models-4 regression analyses coefficients for SAL and nonSAL households are given in Appendix K (pp. 640 to 609).

The new regressions control for sex, age, education, basic activity status, housing tenure and household structure. Comparing households at the reference categories without any additional difficulties (households of two adults with no children, in the 50-64 age group, male outright owner of their accommodation, having a tertiary level of education and at work), whose household equivalised disposable income is at the AROP threshold (60% of country median), in 22 of the 32 countries, the predicted deprivation scores for SAL households is at least 2 points more than for nonSAL households (ranging from 2.2 in Poland to 8.6 in Cyprus). At the country median household equivalised income, SAL households are still at a disadvantage of at least 2 points in 13 countries (see Table 6.23 below).

Table 6.23: SAL and nonSAL constant coefficients with Models-4, and predicted MDI scores at AROP (60% of MHEDI) and at MHEDI, sorted by MDI difference at 60% of MHEDI (largest to smallest).

	constant coefficients			predicted MDI score difference (SAL – nonSAL)	
	SAL households	nonSAL households	difference	at 60% of MHEDI	at MHEDI
Cyprus	21.2	8.3	12.9	8.6	5.8
Portugal	16.3	8.3	8.0	6.0	4.7
Latvia	19.7	12.6	7.1	5.7	4.9
Germany	11.4	2.8	8.7	5.2	2.9
Bulgaria	26.8	20.3	6.5	5.1	4.2
Hungary	18.8	12.1	6.7	4.4	2.8
Italy	10.2	4.5	5.7	4.1	3.1
Greece	22.4	17.3	5.1	4.0	3.2
Spain	10.6	4.5	6.0	3.6	2.0
Denmark	9.6	4.0	5.6	3.6	2.2
Estonia	12.3	7.1	5.1	3.6	2.5
Netherlands	9.4	4.9	4.5	3.3	2.5
Croatia	15.9	10.1	5.8	3.2	1.5
Romania	32.2	27.8	4.4	3.2	2.4
Slovakia	16.2	10.5	5.8	3.0	1.2
Austria	6.6	1.9	4.7	2.7	1.5
Belgium	7.1	2.4	4.7	2.7	1.4
Czech Republic	9.1	5.4	3.7	2.5	1.6
Finland	5.7	1.1	4.6	2.3	0.7
Serbia	24.0	18.8	5.2	2.2	0.2
Lithuania	13.9	11.2	2.7	2.2	1.8
Poland	10.8	5.8	4.9	2.2	0.3
Slovenia	8.5	5.8	2.7	1.2	0.3
France	6.4	2.9	3.4	1.2	-0.3
Luxembourg	2.2	0.4	1.8	0.4	-0.6
Ireland	2.5	3.0	-0.5	-0.4	-0.2
United Kingdom	3.0	3.1	-0.1	-0.8	-1.2
Norway	3.0	1.4	1.6	-0.8	-2.5
Switzerland	3.4	2.2	1.2	-0.9	-2.2
Iceland	0.2	2.0	-1.8	-1.9	-1.9
Sweden	-4.4	2.3	-6.7	-5.0	-3.8
Malta	-3.0	5.1	-8.0	-7.0	-6.2

Given the focus on housing costs in the previous analyses, the SAL and nonSAL coefficients for the objective housing cost overburden measure (HCO) and the subjective heavy burden of housing costs (HCB) measure were compared for all the countries (see Table 6.24 and Table 6.25 below).

Table 6.24: Country SAL and nonSAL housing cost overburden (40%) and housing costs subjective heavy burden coefficients (Models-4) and the difference in the coefficients, listed by SAL – nonSAL difference in the housing cost overburden (HCO) coefficients(largest to smallest)

	housing cost overburden (40%)			housing costs subjective heavy burden		
	SAL	nonSAL	difference	SAL	nonSAL	difference
Ireland	15.958	0.069	15.889	13.764	10.076	3.688
Czech Republic	13.852	4.966	8.886	11.645	10.332	1.313
Iceland	10.062	2.116	7.946	8.527	5.326	3.201
Cyprus	8.556	1.203	7.353	7.008	6.24	0.768
Austria	10.034	3.191	6.843	14.842	11.33	3.512
Hungary	9.253	2.654	6.599	16.811	16.176	0.635
Poland	7.428	1.843	5.585	8.554	6.291	2.263
Italy	8.782	3.215	5.567	13.646	9.16	4.486
Latvia	4.11	-1.037	5.147	13.292	14.588	-1.296
Portugal	2.518	-0.165	2.683	14.391	10.606	3.785
Slovakia	5.763	3.15	2.613	12.684	11.949	0.735
Luxembourg	7.951	5.447	2.504	7.27	3.964	3.306
Spain	6.813	5.22	1.593	10.646	9.256	1.39
United Kingdom	2.605	1.92	0.685	13.357	10.288	3.069
Lithuania	-0.295	-0.863	0.568	14.833	14.055	0.778
Croatia	2.759	2.53	0.229	9.786	9.566	0.22
Netherlands	-0.233	-0.344	0.111	11.417	12.408	-0.991
France	5.573	5.814	-0.241	11.766	8.831	2.935
Estonia	-3.158	-2.119	-1.039	11.388	12.464	-1.076
Germany	3.788	4.951	-1.163	9.868	7.474	2.394
Sweden	-2.17	-0.512	-1.658	12.746	9.663	3.083
Bulgaria	4.094	6.465	-2.371	13.887	12.563	1.324
Greece	3.871	6.431	-2.56	8.33	9.221	-0.891
Belgium	7.114	10.446	-3.332	12.48	8.841	3.639
Denmark	1.274	5.727	-4.453	16.652	10.482	6.17
Romania	-1.993	2.819	-4.812	16.708	14.14	2.568
Serbia	-4.058	1.575	-5.633	10.368	11.062	-0.694
Slovenia	-3.514	2.686	-6.2	12.02	9.493	2.527
Malta	-7.399	-0.709	-6.69	13.087	7.256	5.831
Switzerland	-4.013	4.207	-8.22	11.223	4.689	6.534
Norway	-9.532	-0.508	-9.024	20.032	10.753	9.279
Finland	-9.589	-0.21	-9.379	8.013	5.745	2.268

In most of the countries, the HCB is a substantially stronger predictor of MDI scores than HCO. However, there are some interesting exceptions. For instance, in Luxembourg, the HCO and HCB measures parallel each other, with HCO being marginally greater than HCB. Interestingly, the difference between SAL and nonSAL households' deprivation in Luxembourg in 2018 (and also in the previous years examined in Chapter 5) is one of the smallest. Cyprus, which has one of the largest MDI differences between SAL and nonSAL households gives a marginally higher

HCO score for SAL households while a substantially larger HCB score for nonSAL households. In Ireland, with one of the smallest MDI difference between SAL and nonSAL households, HCO is a stronger predictor for deprivation in SAL households than HCB while for nonSAL households the HCB far more stronger than HCO.

Table 6.25: Country SAL and nonSAL housing cost overburden (40%) and housing costs subjective heavy burden coefficients (Models-4) and the difference in the coefficients, listed by SAL – nonSAL difference in the housing cost subjective burden (HCB) coefficients(largest to smallest)

	housing cost overburden (40%)			housing costs subjective heavy burden		
	SAL	nonSAL	difference	SAL	nonSAL	difference
Norway	-9.532	-0.508	-9.024	20.032	10.753	9.279
Switzerland	-4.013	4.207	-8.22	11.223	4.689	6.534
Denmark	1.274	5.727	-4.453	16.652	10.482	6.17
Malta	-7.399	-0.709	-6.69	13.087	7.256	5.831
Italy	8.782	3.215	5.567	13.646	9.16	4.486
Portugal	2.518	-0.165	2.683	14.391	10.606	3.785
Ireland	15.958	0.069	15.889	13.764	10.076	3.688
Belgium	7.114	10.446	-3.332	12.48	8.841	3.639
Austria	10.034	3.191	6.843	14.842	11.33	3.512
Luxembourg	7.951	5.447	2.504	7.27	3.964	3.306
Iceland	10.062	2.116	7.946	8.527	5.326	3.201
Sweden	-2.17	-0.512	-1.658	12.746	9.663	3.083
United Kingdom	2.605	1.92	0.685	13.357	10.288	3.069
France	5.573	5.814	-0.241	11.766	8.831	2.935
Romania	-1.993	2.819	-4.812	16.708	14.14	2.568
Slovenia	-3.514	2.686	-6.2	12.02	9.493	2.527
Germany	3.788	4.951	-1.163	9.868	7.474	2.394
Finland	-9.589	-0.21	-9.379	8.013	5.745	2.268
Poland	7.428	1.843	5.585	8.554	6.291	2.263
Spain	6.813	5.22	1.593	10.646	9.256	1.39
Bulgaria	4.094	6.465	-2.371	13.887	12.563	1.324
Czech Republic	13.852	4.966	8.886	11.645	10.332	1.313
Lithuania	-0.295	-0.863	0.568	14.833	14.055	0.778
Cyprus	8.556	1.203	7.353	7.008	6.24	0.768
Slovakia	5.763	3.15	2.613	12.684	11.949	0.735
Hungary	9.253	2.654	6.599	16.811	16.176	0.635
Croatia	2.759	2.53	0.229	9.786	9.566	0.22
Serbia	-4.058	1.575	-5.633	10.368	11.062	-0.694
Greece	3.871	6.431	-2.56	8.33	9.221	-0.891
Netherlands	-0.233	-0.344	0.111	11.417	12.408	-0.991
Estonia	-3.158	-2.119	-1.039	11.388	12.464	-1.076
Latvia	4.11	-1.037	5.147	13.292	14.588	-1.296

From the examination of the country regressions, it is difficult to draw any definite conclusions about the way the HCO and the HBO predictors vary between countries;

one may reiterate the observations already observed above, namely that the objective measure of housing cost overburden and the subjective measure of the heavy burden of housing costs do tap into the same reality. The subjective measure reflects a higher propensity of deprivation in SAL households; however, so does the objective measure to a lesser degree; for 12 countries, SAL households had a higher HCO coefficient of at least 2 points than nonSAL households while for 19 countries, SAL households had a higher HCB coefficient of at least 2 points.

6.4.6 Concluding note on supplementary analyses

The introduction of the dummy variables for possible confounders and the addition of the objective measure of housing cost overburden has further explained the observed difference in SAL and nonSAL households' deprivation. Although when controlling for various household characteristics the deprivation gap decreases, SAL households' predicted deprivation remains overall higher. Clearly, the subjective measure of housing costs burden and its predictive power when using the MDI to examine deprivation cannot be interpreted as a measure of actual housing costs. In general, even at country level, both the objective and the subjective measures of housing costs predicted deprivation (with some interesting exceptions which would be worth examining further in future research); however, the subjective measure is reflecting a reality beyond the actual impact of the housing costs on a household budget.

6.5 Multilevel analysis of SAL households' deprivation

6.5.1 Introduction to the model

The regression models developed above clearly show both strong predictors of deprivation but also substantial variation between countries. In modelling predictions of deprivation in European households, attention must be given to the clustered nature of the survey data (as previously discussed in Chapter 4, sec. 4.5.6.5). Although the regression analyses show clear variation at country level, a three-level multilevel analysis adjusts the standard errors to account for the dependency in the data at both region and country level. Both household and

contextual variables and interactions between them were investigated as predictors of deprivation, reflected in the MDI score. The multilevel model allows for the variation in deprivation to be divided between households within regions nested in countries and between the region and country clusters. In the model adopted, the MDI mean random variation between regions and countries is studied through the random intercept, the relationship between the explanatory predictor variables and the MDI score is explained in the coefficients of the predictor variables. The analysis allows us to understand how deprivation varies between regions and countries, the effect of different explanatory variables on deprivation, and the extent to which household, region and country factors contribute to the variation in deprivation.

The analyses above in Sections 6.3 and 6.4 have established that deprivation in SAL and nonSAL households follows general similar patterns in most countries, with a consistent and persistent higher prevalence in SAL households; SAL households are likely to experience higher levels of deprivation as measured by the MDI. Also, while deprivation varies with income and decreases with an increase in income, the regression analysis with the income continuous variable suggests that the relationship between material deprivation and income is different for SAL and nonSAL households with SAL households experiencing a higher degree of material deprivation with reduced household income. The MDI score increases more rapidly for SAL households with a decrease in household income than it does for nonSAL households; put differently, the SAL - nonSAL MDI gap narrows with an increase in income and the gap increases with a decrease in income (see Figure 6.1 below).

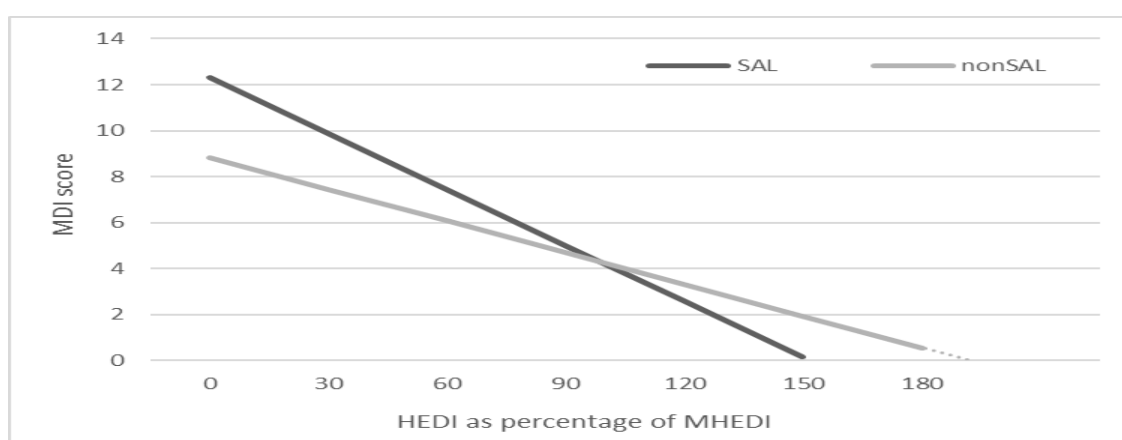


Figure 6.1: Relationship between household income and deprivation for SAL and nonSAL households.

The following multilevel analysis is focused on SAL households to further understand the factors that contribute to SAL households' deprivation and how these vary across regions and countries. The analysis used the 2018 trimmed sample of SAL households (excluding SAL households with a HEDI less than zero or a HEDI more than five times the MHEDI, described above in sec. 6.3.2). The model developed is a three-level households (37,814 units) within regions (124 units) within countries (32 units) variance components model for material deprivation as measured by the MDI. Although data about regions in Germany and the Netherlands was not included in the EU-SILC dataset used, multilevel modelling can withstand missing data (Field, 2018, p. 975).

The final model was developed as follows. The first step was the specification of the hierarchical structure (explained above), with random intercepts specified for the region and the country. Next, the predictors of the linear model were included as fixed effects in various steps, retaining only those variables that tested significant. The final model includes only parameters which resulted significant. Unless otherwise indicated, all steps in the development of the model were estimated using the Markov chain Monte Carlo (MCMC) estimation in MLwiN version 3.06, with a burn-in length of 5000 and 100,000 iterations. The final model was rerun with a burn-in length of 5000 and 500,000 iterations to obtain more precise estimates.

6.5.1.1 Model specification

Three random-effects structures, excluding all covariates, were considered, for all possible combinations of random effects, region, country, region and country. All models gave significant results for the higher level random effects (see Table 6.26 below). The change in the deviance information criterion, 'DIC change', gives the difference in DIC for each model compared to Model ML0 and is a good measure for model fit; lower DIC values indicate the better fit model (Goldstein, 2011). The Wald test was used for significance testing of the random effects (Snijders and Bosker, 2012).

Table 6.26: Variance estimates and DIC values for various specifications of the multilevel model

Model	random terms in the model	variance (standard error)	DIC	DIC change
ML0	none (household)		328805.951	
ML1	region	298.160 (2.167)*	322879.272	-5926.68
ML2	country	301.955 (2.201)*	323271.628	-5534.32
ML3	region and country	298.247 (2.175)*	322873.472	-5932.48
* p < 0.000				

One random effect at a time was explored comparing the DIC change to ML0. Both the region (model ML1) and the country (model ML2) random effects improved the model fit, but including a random effect for both region and country had the best fit (model ML3). When tested for significance using the Wald test, both random parameters were found to be significant at the 99% confidence level in the model including both random terms.

6.5.1.2 Predictors and determinants of deprivation at household level

Once the 3-level random structure was confirmed, the predictors and determinants of deprivation examined in the previous analysis (sec. 6.3 and 6.4) were added in groups to Model ML3 in the following order:

- Household determinants:
 - Step 1 – income
 - Step 2 - housing affordability and overcrowding
 - Step 3 – burden of debt
 - Step 4 - health and support
 - Step 5 – work and employment
 - Step 6 – education
 - Step 7 - housing tenure
 - Step 8 - household demographics (sex, age, household structure)
- Regional predictors:
 - Step 9 - regional GDP-PPP-EU average for 2016-2018
- Country predictors:
 - Step 10 - country GDP-PPP-EU average for 2016-2018
 - Step 11 - country GINI coefficient 2016-2018 average
 - Step 12 - typology of disability policy systems
 - Step 13 - country median household equivalised disposable income.

These potential predictors were chosen on the basis of the analyses in the previous sections, the review of the research literature, and on theoretical grounds.

Table 6.27 and Table 6.28 below (which should be read as one table) show the estimates of the region and country random effect as the explanatory variables were added in groups, starting with the null model and each row representing a new model, as per steps outlined above. For every group added, the percentage reduction in variance (separately for region in Table 6.27, and for country in Table 6.28) is compared with the variance of the null model (b) and the variance of the preceding model (a). The VPC gives the proportion of total variance attributed to region and country at each additional step. The DIC values, which are specific to each model run, and therefore the same values at each step are shown for the two tables (region and country), show the fit of the model with the addition of each group of the explanatory variables or fixed effects.

Table 6.27: Estimates of the region random effect as groups of variables are added

fixed effects parameters (number of parameters)	region					
	variance	(standard error)	(a) % reduction	(b) % reduction	VPC	model DIC
none	8.642	1.773			0.024	322873.472
added income (1)	6.740	1.354	22.01%	22.01%	0.021	316101.763
added housing concerns (4)	3.953	0.834	41.35%	54.26%	0.017	302723.733
added debt (1)	3.652	0.786	7.61%	57.74%	0.016	301763.913
added health and support (3)	3.400	0.733	6.90%	60.66%	0.015	286009.743
added work (4)	2.816	0.633	17.18%	67.41%	0.013	283801.354
added education (3)	2.948	0.656	-4.69%	65.89%	0.014	282146.768
added housing tenure (4)	2.732	0.603	7.33%	68.39%	0.012	281316.320
added household demographics (12)	2.695	0.601	1.35%	68.82%	0.012	280942.587
added GDP-PPP-2016-2018 regional average (removed)	2.811	0.640	-4.30%	67.47%	0.013	280943.210
added GDP-PPP-2016-2018 country average	2.681	0.598	0.52%	68.98%	0.014	280942.319
added Gini coefficient 2016-2018 average	2.655	0.582	0.97%	69.28%	0.014	280942.236
added typology of disability policy systems (removed)	2.651	0.587	0.15%	69.32%	0.014	280942.235
added country median household equivalised income (removed)	2.663	0.590	-0.45%	69.19%	0.014	280942.125
* p < 0.000						

Table 6.28: Estimates of the country random effect as groups of variables are added

fixed effects parameters (number of parameters)	country					
	variance	(standard error)	(a) % reduction	(b) % reduction	VPC	model DIC
none	60.102	17.715			0.164	322873.472
added income (1)	58.537	16.900	2.60%	2.60%	0.186	316101.763
added housing concerns (4)	36.342	10.465	37.92%	39.53%	0.153	302723.733
added debt (1)	38.705	11.079	-6.50%	35.60%	0.165	301763.913
added health and support (3)	32.899	9.546	15.00%	45.26%	0.150	286009.743
added work (4)	37.394	10.603	-13.66%	37.78%	0.174	283801.354
added education (3)	36.582	10.426	2.17%	39.13%	0.172	282146.768
added housing tenure (4)	47.666	13.558	-30.30%	20.69%	0.217	281316.320
added household demographics (12)	48.570	13.830	-1.90%	19.19%	0.222	280942.587
added GDP-PPP-2016-2018 regional average (removed)	45.368	13.382	6.59%	24.51%	0.211	280943.210
added GDP-PPP-2016-2018 country average	25.059	7.333	48.41%	58.31%	0.129	280942.319
added Gini coefficient 2016-2018 average	16.879	5.151	32.64%	71.92%	0.090	280942.236
added typology of disability policy systems (removed)	15.019	4.713	11.02%	75.01%	0.081	280942.235
added country median household equivalised income (removed)	16.481	5.549	-9.73%	72.58%	0.088	280942.125

* p < 0.000

Both the region and the country random effects remained significant throughout all the steps in the model building. Among those variables that were attempted for inclusion in the model but were excluded on the basis that they were not significant were the following contextual variables: region GDP-PPP average for 2016-2018, the Halvorsen et al. (2017) six model typology of disability policy systems (reference category: high levels of spending on cash transfers and services provisions, and low degree of means-testing -Finland, Luxembourg, Netherlands, Norway, Sweden – see sec. 2.10.6), and the country median of the household equivalised disposal income.

In the development of the model, an interesting, unexpected increase in level 3 (country) variance took place when the ‘debt’, ‘work’, ‘housing tenure’, and ‘household demographics’ groups of explanatory variables were added. An increase in variance at level 2 also took place when the ‘education’ explanatory variables were added. In multilevel models, the higher level variance can increase when explanatory variables are added, unlike level 1 variation for a random intercept model (Pillinger, n.d.). This increase further explains the contribution that these variables have in explaining deprivation.

In the case of the education explanatory variables, not accounting for education underestimates some of the differences in deprivation within regions. Similarly, at a country level, before we adjust for work, housing tenure, and household demographics, the deprivation within different countries will appear more homogenous; once we adjust for work (work intensity and employment), housing tenure (home ownership, renting at market prices, subsidised renting) and household demographics (sex, age and household structure), the differences within countries become more evident.

Some of the categories of the categorical variables included in the model were not statistically significant, namely the following: 'in retirement or early retirement' category of activity status; the 16-34 and the 35-49 categories of age; the 'other households with no children', 'households with 2 adults with 3 or more children', and 'other households not classified' categories in the household type. The significance of the full variable was tested by means of the Wald test, including all the categories of each variable at a time to test the overall significance of the variable. So, for instance the activity status variable was tested using the Wald test with three degrees of freedom.

After the inclusion of all the explanatory variables and before deciding on the final specification of the model, the region and country random components were again tested for statistical significance and the three-level random structure was confirmed as the model of best fit. The final model adopted is shown in Table 6.29 (p. 311) and main components of the model are discussed in detail.

Table 6.29: Estimates coefficients of the final household-region-country multilevel model predicting deprivation in SAL households

Explanatory variable (reference category)	Category	β	standard error	β /standard error	p-value
constant		4.496	0.940	4.783	0.000
Household variables					
Household equivalised income % of country median [AROP]		-0.071	0.002	-35.500	0.000
Income x housing cost overburden [HCO]		-0.060	0.007	-8.571	0.000
housing costs exceed 40%, HCO (no)	yes	4.269	0.462	9.240	0.000
Subjective heavy burden housing costs, HCB (no)	yes	11.764	0.157	74.930	0.000
Overcrowded household (no)	yes	3.607	0.231	15.615	0.000
Heavy burden debt repayment (no)	yes	7.134	0.268	26.619	0.000
Household with bad health (no)	yes	2.863	0.158	18.120	0.000
Household with no non-material support (yes)	no	2.958	0.226	13.088	0.000
Household with no material support (yes)	no	4.583	0.184	24.908	0.000
Low work intensity (no)	yes	3.883	0.225	17.258	0.000
Activity status (at work)	unemployed	7.125	0.383	18.603	0.000
	in retirement or early retirement	0.020	0.269	0.074	0.470
	other inactive person	2.448	0.268	9.134	0.000
Education (tertiary level)	primary or lower	4.498	0.275	16.356	0.000
	lower secondary	3.255	0.253	12.866	0.000
	upper secondary & post-secondary non tertiary	0.916	0.220	4.164	0.000
Tenure status (outright owner)	owner paying mortgage	1.484	0.270	5.496	0.000
	accommodation rented at prevailing market rate	5.246	0.257	20.412	0.000
	accommodation rented at reduced or subsidised rate	6.985	0.365	19.137	0.000
	accommodation is free	2.729	0.290	9.410	0.000
Sex (male)	female	1.287	0.154	8.357	0.000
Age (50-64)	16-34	0.317	0.484	0.655	0.256
	35-49	0.036	0.272	0.132	0.448
	65-72	-0.964	0.255	-3.780	0.000
	73+	-3.330	0.249	-13.373	0.000
Household type (2 adults no children)	single person no children	1.144	0.188	6.085	0.000
	other households no children	-0.222	0.226	-0.982	0.163
	2 adults 1 or 2 children	-0.530	0.323	-1.641	0.050
	2 adults 3 or more children	-0.440	0.664	-0.663	0.253
	single parent with children	2.464	0.550	4.480	0.000
	other households with children	-1.266	0.328	-3.860	0.000
	other households not classified	-0.739	1.431	-0.516	0.304
Country variables					
GDP-PPP 2016-2018 average (EU-100)		-0.084	0.019	-4.421	0.000
Gini coefficient 2016-2018 average		0.740	0.202	3.663	0.000

6.5.2 Basic deprivation

The overall predicted MDI mean of a SAL household, having a value of 0 in the continuous income explanatory variable (at 60% of MHEDI, or at-risk of- poverty [AROP] threshold) and having baseline characteristics in terms of the categorical explanatory variables (total housing costs do not exceed 40% of household income, does not consider housing costs to be a heavy burden, not an overcrowded household, debt repayment not a heavy burden, no serious health problem, has non-material support, has material support, no low work intensity, comprising of two adults with no children, with a male outright owner of their accommodation, who is at work and has a tertiary level education, aged between 50-64, and living within a country with a GDP-PPP at EU average [100] and Gini Coefficient at EU average [30]), and living within an average region [$u_{0 \text{ region, country}} = 0$] and an average country [$v_{0 \text{ country}} = 0$] is 4.5 points. The intercept for the fitted line for each region nested in a country will differ from the overall line by $v_{0 \text{ country}} + u_{0 \text{ region, country}}$, the country level residual and the region level residual, which are assumed to follow a normal distribution with country level variance $\sigma_{v_{0 \text{ country}}}^2$ equal to 16.8 and region level variance $\sigma_{u_{0 \text{ region, country}}}^2$ equal to 2.7. The standard deviation for the country effect is $\sqrt{16.79}$ while the standard deviation for the region effect is 2.657. The corresponding 99% coverage interval for country intercepts has the interval limits $4.5 \pm 2.58\sqrt{16.79} = 15.07, -6.08$. For a household with the same characteristics but living in a country having a random effect of -2.58 s.d. the predicted deprivation score is 0, whilst for a household living in a country having a random effect of +2.58 s.d. the predicted MDI score is 15.1 points. Correspondingly, the 99% coverage interval for region intercepts has the interval limits $4.5 \pm 2.58\sqrt{2.657} = 8.71, 0.29$. For a household with the same characteristics but living in a region having a random effect of -2.58 s.d. the predicted deprivation score is negligible, whilst for a household living in a region having a random effect of +2.58 s.d. the predicted MDI score is 8.7 points. The large differences in the predictions for households with base circumstances coming from the 32 European countries indicates that country differences are much more substantial than regional differences.

The coefficients for the fixed effects indicate the cluster-specific average change in MDI score for a unit increase (or decrease) in the income continuous explanatory

variable, or for the dummy category compared to the reference category for dichotomous explanatory variables, when holding all other variables constant (for instance whether or not a SAL household in an average region and an average country - GDP-PPP and Gini coefficient at EU average – has its total housing costs in excess of 40% of its total income is predicted to make a difference of 4.3 points on the MDI score, with the worse scores registered for SAL households living in accommodation that is rented at reduced or subsidised rates).

6.5.3 Income and deprivation

Focusing on the impact of income on deprivation as given by the income continuous explanatory variable, an increase of 10 percentage points in a household's equivalised disposable income (HEDI) results in a 0.71 point decrease in MDI. In the model, the income variable has been centred at the at-risk-of-poverty (AROP) threshold, that is at 60% of median income (which therefore takes the value of 0 in the equation); therefore, a 10 percentage points increase means that a household would be earning 10% more of the country household equivalised median income (MHEDI). For instance, for a SAL household with housing costs not in excess of 40% of the household income (because of the interaction effect between income and the housing cost overburden variable) in an average region and average country, moving from the AROP threshold to the MHEDI results in a predicted decrease of 2.8 points in the MDI ($40 \times 0.071 = 2.84$), holding all other variables constant.

6.5.4 Housing affordability and deprivation

The variable that has the most substantial size effect on the MDI and the most complex relationship with deprivation concerned the impact on SAL households who experienced their total housing costs as a heavy burden. For the average region and country and for SAL households whose HEDI is at the AROP threshold (0 effect in model), the model predicts a 11.8 points higher MDI score for SAL households that experience their total housing costs as a heavy burden compared to SAL households that do not experience such a burden, holding all other variables constant. This is a measure that reflects a household's subjective assessment of the impact its total housing costs has on the households financial standing. The point

has been made and discussed at length that this measure is not an objective indicator of actual housing costs to income ratio. Interestingly, the model predicts a higher deprivation for SAL households living in rented accommodation at reduced or subsidised rate than for SAL households paying prevailing market rates. Comprehended in its totality, the model highlights the critical nature of housing for SAL households. A SAL household at the reference categories but with housing costs that exceed 40% of its income, and renting at prevailing market rates is predicted to experience 9.5 points higher MDI score than SAL households at the reference categories without housing affordability issues. And if such households experience the brunt of the housing cost overburden, their predicted deprivation score shoots up to more than 20 points. The situation would be further exacerbated if the household was living in an overcrowded accommodation.

6.5.5 Other determinants of deprivation at household level

While the model predicts the greatest impact on deprivation to be the subjective burden of housing costs, other household characteristics or circumstances also have a substantial impact on SAL households deprivation, namely households that experience debt repayment as a heavy burden – 7.1 points, , households with low work intensity – 3.9 points and 7.1 points if the person responsible for the accommodation is unemployed, households without material support – 4.6 points, single parent households with children –2.5 points, households without any non-material support – 3.0 points, households with serious health problems – 2.9 points. Education is also a key determinant of deprivation; households with a primary or lower level of education are predicted 4.5 points higher levels of deprivation, or 3.3 points if of a lower secondary education level, compared to the reference category (tertiary education). These predicted effects on the MDI score of SAL households in the average region and average country take as their baseline the absence of each household characteristic or situation.

6.5.6 Macro level determinants of deprivation

Both a country's GDP-PPP and a country's Gini Coefficient predict the level of deprivation of SAL households. Focusing on the GDP-PPP (centred on the EU

average at 100%), SAL households in a country like Luxembourg, with a GDP around 160% are predicted to have 10.0 points less than Bulgaria with a GDP-PPP around 40%. Clearly, the wealth of a country is a determinant factor of deprivation. However, deprivation is not only affected by the wealth of a country but also by the distribution of the wealth, as evidenced by the coefficient for the Gini 2016-2018 average. Picking on Luxembourg and Bulgaria again, with a Gini coefficient difference of about 8.9 in 2022, the model predicts a 6.5 points more deprivation for SAL households in Bulgaria compared to equivalent SAL households in Luxembourg. Considering both macro level determinants, about 16.5 points variation in the predicted deprivation for SAL households in Bulgaria and Luxembourg is determined by their wealth and inequality.

The minimal unexplained variance at regional level makes it more difficult to identify regional determinants of deprivation. Theoretically, there is no reason why the regional GDP would not be also significant in such a model; however, this did not result in the analysis, possibly affected by data issues especially since no regional GDP could be worked out for Germany and the United Kingdom. Other potential predictors to explain deprivation variation at region level, such as regional educational policies, social protection benefits by region, and regional employment and unemployment data can be explored in future studies.

6.5.7 Conclusion

The analyses in this chapter focused on the second part of the research question, namely the household, regional and country factors contributing to deprivation in households supporting an adult member living with a limiting long-term impairment, health problem, or illness. Various factors contribute to the compounded deprivation experience of SAL households, some of which have been further analysed through the linear and multilevel regression analysis. The multilevel model developed in this section explains a substantial component of SAL households deprivation. The VPC indicates that country effects are stronger than regional effects in explaining material deprivation amongst households. More specifically, 16.4% of the total variance in the data is at the country level, 2.4% is at the regional level, with the remaining 81.2% at the household level. The fixed effects

in the model managed to explain a good proportion of the higher-level variance. More specifically, the unexplained variance at the regional level is reduced from 8.642 in the null model to 2.663 in the final model, equivalent to 2.4% of the total variance reduced to 1.4% of the total variance. More substantially, the country-level unexplained variance is reduced from 60.102 to 16.481, equivalent to 16.4% of the total variance reduced to 8.8% of the total variance.

Previous research using multilevel analysis of EU-SILC data to study material deprivation across different countries have used different approaches and explored additional individual, household, and contextual predictors of deprivation to the ones examined in this study. Using 2007 EU-SILC cross-sectional data in a two-level multilevel (individual and country), Bárcena-Martín et al. (2014, p. 802) concluded that “country-specific factors seem to be much more relevant than individual effects in explaining country differences in material deprivation” and that measures addressed to reduce disparities in deprivation between countries should focus on contextual factors. This finding disagreed with Whelan and Maître’s (2012) earlier findings that country-level determinants did not substantially explain differences in county level deprivation. Israel and Spannagel (2019), using 2012 to 2013 EU-SILC cross-sectional data, explained some of the variance in European cross-country differences with reference to needs-based social programmes covering large sections of a country’s population. Households in countries with high social programme coverage had lower odds of experiencing material deprivation, concluding that “there are salient differences in deprivation incidences by welfare policies” (Israel and Spannagel, 2019, p. 168). Israel and Spannagel’s (2019) focus on decommodification and defamilisation measures in welfare policies provide other contextual variables for further research to understand the unexplained variance at country level. At household level, Israel and Spannagel (2019) factored in the level of education to explain variation in deprivation within countries, with low levels of education associated with higher deprivation intensities. In a parallel study, employing both single level and multilevel analyses of 2012 EU-SILC cross-sectional data, Verbunt and Guio (2019) identified the equalised median income levels and strength of in-kind benefits as the main country-level determinants of material deprivation, arguing that macroeconomic and institutional variables were important in explaining variations between countries in their material deprivation

levels. In this study, the median equivalised household disposable income gave a null effect. At household level, Verbunt and Guio (2019) also identified education as the highest predictor of variation in deprivation at household level. Similarly, the foregoing analysis identified education as a significant and substantial predictor of household deprivation. This study's focus on deprivation in households supporting an adult member living with a limiting long-term impairment, health problem, or illness adds to the growing research literature examining both the within and across country differences in deprivation. It also identified the heavy burden of housing costs as being a main predictor of SAL household deprivation across all countries despite substantial variation across countries.

The housing dimension in the SAL households' deprivation model developed above has important policy implications because it draws attention to one of the key factors through which material deprivation can be addressed. Many of the contributory circumstances to deprivation cannot be addressed directly in the short term. The household type, age, sex, education level, and one's chronic health needs, cannot be considered as possible areas of immediate direct intervention to reduce deprivation, with the exception of services and policies that respond to chronic health needs. Employment and work can only be considered if the severity of the impairment allows such a possibility. Housing affordability in its broad sense can be addressed if costs, suitability, and quality are considered as policy instruments to address deprivation. The model developed also highlights the substantial increase in household income required to balance the predicted deprivation levels on account of the various situations implied by the explanatory variables.

Still, when all the factors that predict deprivation in SAL households are considered, the level of unexplained variance at household level is substantial. Part of this variance may result from the omission of other possible household determinants of deprivation such as family support structures and accumulated resources. However, even in studies that include other determinants, the level of unexplained variance remains significant (Bárcena-Martín et al., 2014). While the model developed in this study directly suggests the substantial impact of housing related affordability issues on a SAL household's experience of deprivation together with other factors that further contribute to increased deprivation, the high unexplained variance suggests

at least three things. First, there are other household factors that can be considered such as the trajectory of impairment and household's access to community resources. Second, household sociodemographic characteristics can be shaped by macro-level variables (Bárcena-Martín et al., 2014). Third, the unexplained variance at household level may also suggest that beyond the determinant factors of deprivation examined in this study, SAL households remain unique in their individual needs and in their individual circumstances. Such needs and circumstances further contribute to the deprivation experienced over and above the deprivation experienced as a result of some or all of the factors identified above.

Chapter 7. An incomplete picture - Discussion on quantitative analysis findings

The emerging story revealed by the data analysed in Chapters 5 and 6 is one that points towards a distinguishable and compelling disability gap. To the extent that the severe activity limitation indicator (GALI) in the EU-SILC data identifies households that support persons living with impairment who experience a “disadvantage or restriction of activity caused by a contemporary social organisation which takes little or no account of people who have impairments and thus excludes them from the mainstream of social activities” (Union of the Physically Impaired Against Segregation and The Disability Alliance, 1975, p. 14), then material deprivation emerges as a persistent structural element in contemporary social organisation experienced by such households. Although the main analysis was carried out on the 2018 data, the review of the 2013-2019 years consistently portray households supporting adult persons with severe activity limitation (SAL households) as disadvantaged when compared to other households (nonSAL households). Consequently, although the 2018 analysis of the cross-sectional data does not capture a longitudinal perspective, the 2013-2019 data showed nothing that contradicts the findings of 2018. The discussion below, therefore, takes all the findings into consideration, bearing in mind some general limitations that confine any arguments or conclusions that can be drawn from the findings:

1. All the analyses are based on survey and administrative data, gathered in 32 different countries with 32 different authorities responsible for the administration of the data. Although the surveys are carried out under clear quality provisions, this study did not ascertain the reliability or otherwise of the data analysed;
2. Although the EU-SILC process is guided by a common framework that defines the harmonised list of variables covered on an annual basis, a recommended design for its implementation, common concepts and classifications that aim at facilitating comparability by reducing variability in the data collection process, it does not use a common survey instrument. Consequently, the actual wording of the different surveys used in the different countries may vary within the constraints of the set list of variables;

3. As discussed in Chapters 1, 2 and 3 of this study, deprivation and poverty are complex phenomena that are difficult to capture in narrow conceptual and operational definitions. The deprivation analysed from the EU-SILC data is conditioned by the measures used from the measures available, in particular by the choices made about the components and structure of the Modified Deprivation Index used in this study;
4. The 'activity limitation' variable also has its limitations. Clearly, the notion of activity limitation is not comprehended homogeneously across different countries, as evident in the broad variability in the percentage of SAL households in any country (a low of 4.7% of the weighted sample for Malta compared to a high 20.5% in Croatia in 2018, with similar patterns over the other years);
5. The use of the cross-sectional data does not allow for an analysis of the trajectories of poverty and deprivation. While clear factors associated with deprivation have been identified, these factors cannot be considered as 'causes' of deprivation. The dynamics of deprivation can only be captured with the use of panel data rather than by consecutive cross-sectional data as used in this study. This notwithstanding, it is worth mentioning that every year, only 25% of the sample base is rotated. Moreover, Jenkins and van Kerm (2011) found general consistencies between measures of persistent poverty drawn from longitudinal data and poverty rates drawn from consecutive cross-sectional data; although material deprivation and poverty are different concepts, the income dimension is a significant part of the analysis of deprivation.

Notwithstanding these limitations, the data analysed provided a unique insight into the prevalence and nature of material deprivation in relation to households with an adult member with long-standing limitations caused by health or other impairments, comparable between 32 European countries over a seven-year period. The consistent and persistent nature of the outcomes of the analyses, in spite of the limitations outlined, give credence to the findings discussed below.

7.1 The substantial variability in the prevalence of SAL households

There is a striking difference across the 32 countries of this study in the prevalence of households that identify as having an adult member severely limited in the activities people usually do. This variability does not explain the variations in the Modified Deprivation Index (MDI) rates of different countries; nor does it explain the range of differences in MDI scores between SAL and nonSAL households in different countries. In fact, as shall be discussed below, in spite of the range in SAL households MDI averages over the seven years covered (11.7 points in Sweden to 42.4 points in Romania), the range of average differences between SAL and nonSAL households MDI is much less (5.6 points in Luxembourg to 13.5 in Romania). In some countries with low overall material deprivation, the compounded material deprivation amongst SAL households is substantial; the converse is also true. Notably, among the countries with the lowest SAL – nonSAL MDI difference there are countries with high overall MDI mean, and among the countries with the highest SAL – nonSAL MDI difference there are countries with low overall MDI mean.

Berger et al. (2015) comment about the cross-country differences in the use of the GALI, suggesting that these differences may be due to variations in how the concept of activity limitation is perceived and understood in the different contexts within which it is implemented. Arguing that their study confirms the relevance of this indicator within the European context, they caution on its use in comparing the level of activity limitation between different countries. The broad range in the prevalence of SAL households in different countries over the seven years is, in general, fairly consistent, supporting the notion that the differences may be reflecting different contexts rather than actual differences in frequency of SAL households. What is more significant for this study is that irrespective of the cross-country differences in the incidence of SAL households, the emerging picture of deprivation is a rather consistent one.

7.2 A persistent disability gap

Over the 2013-2019 period, the situation for SAL households has generally followed country trends; as deprivation averages for all households decrease, so do the

averages for SAL households. If a decrease in MDI score is indicative of a decline in overall deprivation at country level, then SAL households also benefit from such a drop. However, in practically all participating countries, the fall in country deprivation did not reduce the compounded deprivation that SAL households experience. Correspondingly, SAL household deprivation corresponded to the median household equivalised disposable income of its country; yet, the increased deprivation experienced by SAL household did not. The country income and deprivation averages suggest that as country household income means increased, deprivation decreased for all households; yet, the deprivation gap persists even with increases in median household income. Consequently, the variability in the compounded deprivation among SAL households cannot all be explained away as a function of the country's standard of living. While SAL households are better off in countries with low overall material deprivation, they are still worse off than their nonSAL counterparts in the same country. The fact that the multilevel analysis focused solely on SAL households does not allow any conclusions to be drawn on whether a country's level of inequality contributes to the SAL households' deprivation gap or whether inequality possibly contributes to deprivation across the board.

This persistent gap can be conceptualised as indicative of the inequality or structural disadvantage that disabled persons live with on a day-to-day basis, in all countries. It is a disparity that is not restricted to one sector of the income spectrum. SAL households at-risk-of-poverty and SAL household earning well above the poverty threshold all experience more deprivation than other households in the same income brackets. In line with existing knowledge, these findings are congruent with previous research that point towards a reality in which households living with activity limitation because of an adult member with impairment seemed destined to a lower standard of living because of their situation (Priestley and Grammenos, 2021; Schuelke, Munford and Morciano, 2021; Mont and Cote, 2020; Morris and Zaidi, 2020; Cullinan, Gannon and Lyons, 2011).

7.3 Disability, poverty, income and deprivation

Being a SAL household increases the likelihood that the household income falls below the at-risk-of-poverty (AROP) threshold. This finding is consistent with the research findings that show a strong link between disability and poverty (Quinn, 2021). The research literature reviewed in Chapter 2 of this study (sec. 2.4) points towards a link between disability and poverty that is constitutive, structural and central to the reality of living with a limiting long-term impairment. The consistent pattern of higher AROP rates for SAL households throughout the seven years analysed, reflecting the reality in 32 countries, with considerable differences in the prevalence rates of SAL households, does not show any abatement. Even more compelling is the fact that within the AROP household income range, SAL households had substantially higher deprivation scores than other households also AROP. In the few exceptions where a slightly higher percentage of nonSAL households were AROP, SAL households still had higher deprivation score averages (see Italy, for instance). Also, the deprivation gap between SAL and nonSAL households AROP tends to be greater in countries in which the average deprivation is low. Countries with a high standard of living still show a persistent deprivation gap for SAL households; in other words, their high standard of living is not translated into lower deprivation scores for SAL households when compared to other households. A higher standard of living implies higher costs in addition to higher income; the higher deprivation rates and scores for SAL households points towards a picture of SAL households in richer countries being disproportionately disadvantaged, even at the lower end of the household income spectrum.

Without social transfers, the situation would be much worse for SAL households. The analysis on the impact of social transfers on household income clearly shows the critical role social transfers play in reducing the SAL – nonSAL households income gap. It is not enough to focus on the extent to which social transfers reduce income gaps; the countries with the higher contributions were the countries with the higher income gaps both before and after the social transfers. This outcome from the analysis suggests that classifying typologies of disability policy systems according to the level of benefits paid may overlook the income context they are designed to address. One may tentatively argue that the extent of social transfers

addressed towards disabled persons in any context is effective at reducing the income gap and the deprivation gap to the extent that the pre social transfers context is factored in; the bigger the gap prior to social transfers the greater the role of social transfers in reducing that gap. Interesting, Collado et al. (2019), in their study on the increase in social protection expenditure necessary to close the poverty gap, make the point that such increased costs also depend on the factors that contribute to rising inequality derived from employment before social transfers. Correspondingly, Miežienė and Krutulienė (2019) point out that although there is a clear correlation between the level of social spending and poverty reduction in EU countries, some of the countries that achieved high reduction in poverty rates after social transfers were not the countries with high levels of social spending (Ireland and Hungary are mentioned as examples). While Miežienė and Krutulienė (2019) discuss social benefit types and targeting as the main factors predicting the impact of social transfers, they did not explore the inequality gap prior to social transfers as a further possible factor contributing to the impact of social transfers.

Household income is a clear, though somewhat modest, predictor of household deprivation. Deprivation for all households decreases with increased household income. There is, however, an interaction effect between household income and whether or not a household includes an adult severely limited in activities people usually do. For these households (SAL households), the increase in material deprivation is compounded compared to nonSAL households for a corresponding decrease in income. This interaction effect implies that SAL households are more sensitive to changes in household income. As previously argued, the reality of living with an impairment implies additional costs; all things being equal, the costs of a SAL household are more than those of other households (Morris and Zaidi, 2020). Consequently, a higher income is required to support an equitable quality of life. A decrease in income of a SAL household implies that such a household will have to do away with more of its needs compared to other households because its needs cost more. This renders SAL households more sensitive to changes in income and to inflation of essential goods and services, especially for households without accumulated resources that can buffer such changes. Conversely, one may argue that SAL household deprivation responds more readily to increased income. However, this last point does not make intuitively logical sense: Do SAL households require

less increase in income to overcome their deprivation? This point is best understood in the context of the deprivation gap that exists between SAL and nonSAL households. As income increases, the gap in deprivation that is a function of income decreases, while as income decreases SAL and nonSAL households move further away from each other. However, deprivation in all households cannot be seen as solely depending on income. If, for instance, a household does not have material or non-material support, their predicted deprivation is more than that of a household with similar income but with material and non-material support. At the same time, the prevalence of many of the household situations and characteristics that predict deprivation is higher in SAL households.

Household income was referred to in the previous paragraph as a modest predictor. For SAL households, the multilevel model predicts a minimal decrease of 0.71 points on the MDI for 10 percentage points increase in household equivalised disposable income (HEDI) over and above the AROP threshold. While household income and deprivation are clearly related, their relationship is a function of processes that accumulate or erode resources which may buffer households from short term reductions in their income (Whelan, Layte and Maître, 2003). Minor changes in household income may not result in contingent changes in household deprivation and substantial income increases are required to make meaningful changes in deprivation. This finding highlights the importance of a policy focus on the household situations that are most likely to contribute to deprivation.

7.4 The situations that contribute to deprivation

The circumstances that contribute to deprivation are generally comparable for both SAL and nonSAL households. There are some minor explainable differences, such as low work intensity and general bad health circumstances being stronger predictors of deprivation in nonSAL households. For instance, although the odds ratio of a SAL household with low work intensity is more than 3 times that of a nonSAL household, the difference in deprivation score is larger for nonSAL households with low work intensity than for SAL households. This minor difference does not change the point that for all households, low work intensity is a major contributor to household material deprivation. The 'general bad health circumstances' features slightly higher

for nonSAL households because of the substantial deprivation difference this situation involves for the small percentage of nonSAL households with these circumstances, while for SAL households it is a prevalent situation. The general point being made here is that in understanding deprivation in SAL households as reflected in the MDI scores, the distinctive nature of SAL households deprivation is more about the higher prevalence of the circumstances that contribute to deprivation than it is about a different kind of deprivation (see Table 7.1 below).

Table 7.1: Percentage of SAL and nonSAL households experiencing the circumstances that contribute to deprivation (2018)

	SAL(%)	nonSAL(%)	difference
General bad health circumstances	63.8	6.6	57.2
Total housing costs a heavy burden	37.1	24.9	12.2
No material support	32.1	20.2	11.9
Low work intensity	17.6	6.5	11.1
At risk of poverty	24.4	17.4	7.0
No non-material support	16.2	9.6	6.6
Debt repayments a heavy burden	7.2	4.8	2.4
Paying rent for accommodation	32.1	30.0	2.1
One-person household	33.6	33.5	0.1
Overcrowded household	11.3	11.8	-0.5
Single parent household with children	2.8	4.4	-1.6

All these predictors of deprivation are somehow interrelated, and most of them can, theoretically, be addressed or compensated for with increased income. As shall be discussed in the following section, the regression analyses in the previous chapter point towards the substantial impact of such circumstances on household deprivation. For instance, a SAL household in an average region and average country without any material support would theoretically require an income well over 60 percentage points more than the AROP threshold to compensate for this lack of material support (coefficient of ‘no material support’ divided by coefficient for income, $4.583/0.071 = 64.5$). Reducing material deprivation to household income obscures the reality of material deprivation.

The supplementary analyses with potential confounders did not change the general picture of SAL and nonSAL households’ deprivation. The most intriguing finding concerns the different way in which age predicts deprivation in the two categories of households examined. To the extent that the age of the person responsible for the

accommodation is a good proxy for the age of a household, the pattern of deprivation in SAL households is predicted to decrease with age, all other factors being equal (an improbable scenario). The predicted deprivation difference between the 16-34 and the 73+ age categories for SAL households is of 5.6 points while for nonSAL households 1.5 points (the predicted difference for SAL households by the multilevel model is less, namely 3.6 points). Clearly, age is a factor and more so in SAL households' deprivation but not in the expected direction; in does, however, follow the general Eurostat official figures for SMSD (Eurostat, 2022b), but does not parallel Bácena-Martin, García-Pardo and Pérez-Moreno's (2021) findings who identified older persons as the age group who are most 'left behind'. One possible explanation for this finding is that the higher prevalence of SAL households in the 73+ age group includes a significant number of households that have not lived with a severe activity limitation for a long period of time. The experience of deprivation also depends on accumulated resources; moreover, the income of this age group also reflects one's employment history. All other variables factored in, it is reasonable to assume that the later a household comprises a disabled person the less any consequential impoverishment will be.

To the extent that the EU-SILC indicators are able to capture deprivation experiences of older persons, the findings of this study suggest that addressing deprivation among older persons is not about age but about all the other concomitant determinants of deprivation. However, there are other possible explanations to this finding, namely the points raised by Van den Bosh (2001/2018) on the different ways in which older persons interpret their economic stress and judge their necessities; in general, older persons are "more satisfied with their income, or find it easier to make ends meet" (p. 313). The possible need "for 'surgically' reclassifying the deprivation status of *particular* households or subgroups" without "abandoning the enforced lack criterion" was recognised by Hick (2013, p. 53) in his analysis of the merits or otherwise of the 'enforced lack criterion' when addressing deprivation among older persons. For sure, this age component of deprivation and disability does not mean that people become less limited in their activities the older they grow; rather, when limitations develop in the later age, they are less likely to reflect the reality of living with a lifelong severe impairment.

7.5 The heavy burden of total housing costs

One of the main findings from the analysis of the 2013-2019 EU-SILC data is the impact on household deprivation in situations in which households consider their total housing costs as a heavy burden. Verbunt and Guio (2019) partially factored in housing costs by considering the higher deprivation risk experienced by tenants compared to house owners, with this household determinant playing a more significant role in the wealthier countries. Deidda's (2015) analysis of the 2010 EU-SILC cross-sectional data for five European countries had also identified housing costs as a substantial burden, pointing out that housing costs "may significantly reduce households' willingness to spend, affecting households' disposable income and lowering their standard of living" (2014, p. 545).

In the original measure, households were asked whether they considered their total housing costs (including mortgage repayment or rent, insurance and service charges, regular maintenance, repairs and other charges) as not a burden, a slight burden, or a heavy burden. For all households that identified their total housing costs as a heavy burden, the average MDI score in 2018 was 11.8 points more than the other households (using the least estimate from the multilevel model). In order to test whether this score was influenced by the MDI items related to the household accommodation and by the weightings of the items, an unweighted 19-item MDI average score was also computed and on a 100 point scale the difference between burdened and non-burdened households was 16.4 points, practically an equivalent difference (compared to 15.9 points in the original analysis).

For all households, but even more so for SAL households, experiencing their total housing cost as a heavy burden was the strongest predictor of household material deprivation. As previously noted, in 2018 the percentage of SAL households experiencing a heavy financial burden because of housing costs was substantially and significantly higher to nonSAL households experiencing the same financial burden. This higher prevalence was present throughout all seven years covered by this study (see Table 7.2 below). Clearly, households subjective experiencing a heavy financial burden of total housing costs are overrepresented in SAL households and underrepresented in nonSAL households.

Table 7.2: Percentage of SAL and nonSAL households experiencing the total cost of housing as a heavy burden

	SAL(%)	nonSAL(%)	difference	Odds ratio	Pearson χ^2
2013	46.2	33.0	13.2	1.74	p < 0.000
2014	45.6	32.7	12.9	1.78	p < 0.000
2015	44.6	29.7	14.9	1.90	p < 0.000
2016	41.9	27.9	14.0	1.86	p < 0.000
2017	36.3	25.1	11.2	1.71	p < 0.000
2018	37.1	24.9	12.2	1.78	p < 0.000
2019	39.2	24.9	14.3	1.94	p < 0.000

The supplementary analyses with the objective housing costs overburden measure helps to correctly interpret the subjective experience of households that consider their housing costs to be a heavy burden. The measures do not contradict each other; both predict deprivation. Evidently, when a household states that its housing costs are a heavy burden, it is neither describing its actual housing costs nor is it working out a costs-to-income ratio. The measure cannot be interpreted as a measure of housing cost. However, when a household states that the resources it is using to support its basic right to housing are a ‘heavy burden’, it is making a statement which incorporates much more than what it can or cannot afford.

The conclusion that can be drawn from the above analyses is that the impact on deprivation due to housing affordability considerations reflects a substantial segment of the deprivation gap identified between SAL and nonSAL households. This conclusion is also supported by comparing the aggregate deprivation mean scores for SAL and nonSAL households, feeling burdened and or not feeling burdened with housing costs. For 2018, the mean MDI difference between SAL and nonSAL households nearly doubles for households feeling heavy burdened with housing costs. Moreover, the average MDI score for nonSAL households feeling burdened with housing costs is substantially more than that of the rest of SAL households. One may tentatively argue that addressing the SAL – nonSAL gap identified in this study may require a particular policy focus on housing affordability and related issues. Plouin et al. (2021) address the broader challenge disabled persons face in accessing affordable and suitable housing. The argument can be expanded to include all households who experience their housing costs as a heavy burden on their resources; by attending to this issue, a major contributory factor to

material deprivation in European households would be addressed (Deidda, 2015), possibly addressing part of the structural deprivation gap between SAL and nonSAL households.

7.6 Other household factors that contribute to deprivation

SAL households that experience debt repayment as a heavy burden, or who do not have material or non-material support, who have a serious health situation in the household, and whose adult members are employed for less than 20% of their employment potential, are all likely to experience more deprivation than other households. These factors are primarily income related. Low work intensity implies that a household has, at a maximum, 20% of its employment potential income. Also, a household with no material support depends more so on its own resources and social benefits to sustain its needs. The other circumstances increase costs: interests on debt, paying for support, serious health problems all imply the need for additional household income.

Whether or not a SAL household considered itself able to ask for and receive non-material support from relatives, friends, neighbours and other persons that were not part of the household contributed to the household's deprivation. The contribution of non-material support to reduce deprivation in SAL households highlights the importance of the informal support network in moderating deprivation. This factor has a monetary component in that households without non-material support may have to rely more on paid supports; however, it goes beyond a household's disposable income as non-material support includes moral support, comprising "somebody to talk to when needed, somebody who could help them if they were sick, could ask to do or collect something for them" (Eurostat, 2019a, p. 354). The absence of such support explains some of the deprivation in SAL households. Elam, Ritchie and Hulusi (2000) describe informal support from family and friends to households on low income as including food, clothes, furniture and other household items, cash gives and loans, all of which can buffer some of the experience of deprivation. Although informal support for low-income families is invaluable in both preventing and coping with deprivation, it cannot be considered

as “a substitute for the failures of the market and state” (Hill, Hirsch and Davis, 2021, p. 28).

Being a single parent with children did not show significant variation at country level. Although this factor is one of the least that effects deprivation in SAL households, the vulnerability of such households emerges as an issue across all regions and countries. In spite of improvements registered during the period of the survey, single parents with children “have higher rates of living in household with low work intensity, at-risk-of-poverty (AROP), or material deprivation” (Nieuwenhuis, 2020, p. 8). At country level, there was no significant variation in the effect of low work intensity on deprivation in SAL households; in all countries, being a SAL household with low work intensity increased the predicted deprivation outcome.

7.7 Regional and country factors that contribute to SAL households’ deprivation

Given the minimal variance at region level, this study only explored one potential regional predictors of deprivation, the regional GDP-PPP 2016-2018 average, which did not result significant. Understanding population characteristics across regions and countries has been described as one of the main aims of the EU-SILC (Iacovou, Kaminska and Levy, 2012); however, the data on regions released in the EU-SILC user database (UDB) for researchers is limited to NUTS1 level and such limitation may well condition the possible identification of substantial differences at regional level. It is an area that can be further developed in future research should NUTS2 level data be authorised for research purposes. At country level, the study explored four possible explanatory variables. Both the country’s GDP-PPP and the country’s Gini coefficient were identified as significant macro level explanatory variables for deprivation in SAL households. The country’s median household equivalised disposable income and Halvorsen et al.’s (2017) typology of disability policy systems were not significant predictors of SAL households’ deprivation. The classification of countries according to their level and nature of spending on the disability sector did not predict SAL households’ deprivation. This finding concurs with Verbunt and Guio (2019) detailed analysis comparing the impact of in-cash and

in-kind social spending on both poverty and deprivation. In their study, having controlled for country median income, GDP proportionate average spending on social benefits reduced income poverty risk but not material deprivation risk. Verbunt and Guio (2019, p. 855) interpreted this finding as implying that “living in a country with higher social spending levels reduces the risk of severe material deprivation only for those individuals that have a low income”. On the other hand, in-kind benefits decreased the risk of both poverty and material deprivation. Verbunt and Guio (2019, p. 855) infer these results as possibly reflecting the difference between “cash transfers [that] directly protect the income of households from setbacks” and “in-kind services [that] indirectly boost the household budget by decreasing the costs”, arguing further that such distinction elucidates why in-kind spending “explains a larger amount of the between-country differences in the ‘risk of material deprivation only’, as services such as health care and social housing, support the permanent income of the non-income poor households” (2019, pp. 855-856).

As previously discussed, in the analysis focusing on the contribution of social transfers to reducing the household income gap between SAL and nonSAL households (sec. 5.5), the countries with the highest level of social transfers were those with the highest gap between the two categories of households prior to social transfers. Further, even after the social transfers, the reduced gap was still more than in countries with lower levels of social transfers. Consequently, it is not surprising that the high-low level of cash benefits did not predict any of the country variation in the SAL households MDI.

7.8 The nature of relative deprivation for SAL households

The results of this study give credence to the assertion by one of the disabled persons who greatly influenced this study (already quoted earlier in Chapter 1), that living with impairment increases substantially the likelihood of a drastic reduction in one’s “life-enhancing choices and activities: housing options, family holidays, travel ... cultural activities, sporting activities ... In the end, the definition of material deprivation and poverty is relative to one’s socio-economic background” (J. Camilleri, personal communication, August 28, 2014). The analysis that focused on

the higher income brackets showed that as household income increased, the odds ratio of SAL households reporting one of main measures of the deprivation index (for instance not affording a holiday once a year, not having the capacity to face unexpected required expenses, or not being able to make ends meet) increase. The odds ratio reflects the proportion of the two groups of households experiencing a deprivation. In some of the most frequent situations of deprivation, the relative proportion of SAL households, compared to nonSAL households in the same income group, increases as the household income increases.

The SAL – nonSAL households deprivation gap emanating from 2013-2019 data prevails all across the board and across a wide range of the household income spectrum. It does suggest a complex structural reality that pervades the life choices of disabled persons and their households. At the lower end of the household income spectrum the gap is experienced as poverty in relative deprivation terms as defined by Townsend (1979), and is probably also experienced as a lack of “capability to realize one’s full potential as a human being” (Banerjee and Duflo, 2011, p. 5, on Sen’s conceptualisation of poverty). As a household’s income increases, the nature of the “living conditions and amenities which are customary, or are at least widely encouraged or approved, in the societies to which they belong” (Townsend, 1979, p. 31) changes to incorporate what Camilleri (2014) above describes as “one’s socio-economic background”, suggesting that culture and norms also condition how the SAL – nonSAL households deprivation gap is experienced. Relative deprivation implies a “drastic reduction of life-enhancing choices and activities” (Camilleri, 2014) along all the income spectrum for SAL households; what changes are some of the choices and activities that define the “capability to realise one’s full potential as a human being” (Sen, 2016). It is in this context that the subjective experience of housing cost as a heavy burden may make more sense; the heavy burden may be reflecting a lack of a household’s capability to realise its aspiration for a home that provides a secure foundation for decent living.

Although the data studied is limited to the array of deprivations represented in the MDI items, it does portray a picture in which SAL and nonSAL households in similar income brackets cannot achieve an equivalent quality of life. SAL households not only earn less, but what they earn has to make do for specific needs related to their

impairment reality. Further, the situations predicting deprivation are significantly more prevalent in SAL households. An argument can be made that the socioeconomic position of households and other social circumstances are more of a factor than the presence of impairment in contributing to the differences observed between SAL and nonSAL households (see for instance, Emerson et al., 2010, and Shahtahmasebi et al., 2011, who make this argument for families supporting children with impairment). However, such an argument is circular in that it does not address the fact that such socioeconomic positions and circumstances of SAL families are what they are. True, the difference in deprivation between SAL and nonSAL households drops substantially when the factors that contribute to deprivation are not present. However, it is a fact that the circumstances that contribute to deprivation are considerably more present in SAL households.

7.9 The limitations of this analysis of EU-SILC data

The above discussion appraises some of the factors that predict or explain SAL household deprivation. The findings from the analysis of the EU-SICL 2013-2019 cross-sectional data and the detailed analysis of the 2018 cross-sectional data give some clear pointers towards areas that need to be focused on when concerning ourselves with the deprivation experienced by disabled persons and their households, and the deprivation gap that such households experience in relation to other households.

There is, however, a substantial amount of variance at household level and less so at country level that is not explained. Part of this limitation in explanation is the nature of the data analysed: while the MDI served the purpose for undertaking a detailed comparative analysis across the seven years and across the 32 countries, it is limited to the measures of deprivation that are captured by the EU-SILC. The analyses point towards one major limitation of the etic perspective: in developing generalisations about deprivation experienced by disabled persons and their households, the unique story of each household is ignored. Although it is not possible to capture in a study each and every unique deprivation story of all the households reflected in the data analysed, the picture that has emerged is also incomplete because it is short of the lived deprivation experiences of disabled

persons and their households. In order to improve on the partial picture developed so far, the following chapter undertakes an analysis of the most recent reports (2015-2021) prepared by organisations of disabled persons from most (not all countries have presented reports from Disabled Persons' Organisations) of the 32 countries surveyed in this study, reports that include disabled persons' feedback on their respective country's implementation of Article 28 of the UNCRPD and other issues related to it.

Chapter 8. Elaborating the picture – Disabled Persons’ Organisations on Article 28 implementation

The discussion so far portrays a partial understanding of disability and household deprivation, an incomplete picture by reason of several considerations. First, poverty and deprivation are complex phenomena, bound to cultural context (Øyen, 1996) and reflecting broad or narrow, material resources or living standards or capabilities, and absolute or relative conceptualisations (Lister, 2021). In the previous analysis, deprivation in households from 32 European countries was understood as involving situations in which members of a household had to go without commodities or activities because they could not afford them, or suffered circumstances due to limited income, or lived in accommodations with various inadequacies. This understanding of deprivation enabled the comparative analysis across countries and households, giving a distinct picture of compounded deprivation for households with an adult severely limited in activities considered ‘normal’. However, the conceptualisation of deprivation used in the analyses so far is limited by, and to, the measures covered by the EU-SILC incorporated in the Modified Deprivation Index, used for the purpose of the comparative analysis.

Furthermore, the analysis so far only represents the reality of disabled persons’ households to the extent that the data analysed captures the actuality of the deprivation that disabled persons and their households experience; any aspect of their deprivation not captured by the data is absent. For instance, in his analysis of consistent poverty and the relationship between direct and indirect measures of poverty, Hick (2014a) distinguishes seven dimensions of multiple deprivation as distinct from material deprivation, namely ill-health, poor mental health, housing deprivation, a lack of autonomy, low life satisfaction, financial stress, and unemployment; the analysis using the MDI does not draw this distinction and combines elements of housing deprivation and financial stress with measures of material deprivation to derive one aggregate score of deprivation. In this respect, the discussion so far only partially answers the question on the nature of deprivation experienced by disabled persons; the direct experience of disabled persons themselves can further inform the discussion, not least by weighing in the

factors considered as basic contributors to being deprived from “an adequate standard of living for themselves and their families” (United Nations, 2006, Art. 28).

In order to capture disabled persons’ perspectives on what they deem to be their relative standard of living (relative to their particular contexts), this chapter reviews the feedback of organisations of disabled persons (DPOs) on their direct experiences in view of each respective country’s level of compliance with the UNCRDP, focusing primarily on Article 28 but also considering other parallel articles, in particular Article 19 (living independently and being included in the community) and Article 27 (work and employment). As explained previously in Chapter 4 (sec. 4.6), an integral part of the reporting mechanism on progress registered following the coming into force of the UNCRPD on May 3, 2008, is the regular reporting to the Committee on the Rights of Persons with Disabilities (CRPD) by State parties to the convention. Although State parties are encouraged to include the input of disabled persons and their organisations in the preparation of the country report, the CRPD also encourages and welcomes reports from DPOs to enable the committee “to have a more complete understanding of various problems affecting the implementation of the Convention in a specific State party” (United Nations, 2011, p. 6). These reports put forward the lived experiences of disabled persons in Europe not as an individual endeavour but as a group effort that mirrors the communal struggles and aspirations of disabled persons throughout the countries being studied.

As discussed in Chapter 4 (sec. 4.6.4), the DPOs’ reports are not neutral documents. They do not claim the ‘objectivity’, ‘distance’ and ‘neutrality’ precepts of traditional positivist research. And in analysing the findings from these reports, questions of biases, sectional interests, and concerns of validity and reliability may arise. However, these reports portray a perspective that is close to disabled persons’ lived experience and therefore offer a “*less* distorted, inaccurate and damaging resulting knowledge” (Beresford, 2003, as quoted in Beresford 2013, p. 147). It is this perspective and its interpretation that this chapter endeavours to capture. Although the challenges of disabled children and their families are extensively covered in these reports, with detailed reporting on the education and health sectors, given the focus of this study this chapter limits its coverage to households with disabled

adults, zooming into themes that were either not captured in the quantitative analyses or that elaborate the story emerging from the analyses.

Sixty-six reports from 26 countries were examined and analysed to identify answers to the question: What is the nature of deprivation experienced by disabled persons in Europe? This analysis involved the examination of the manifest content of the reports for all issues related to poverty, deprivation, social protection, housing, and support services (see Chapter 4, sec. 4.6 for more details). At the time when this part of the study was being concluded (11/2021), Finland, Iceland, Ireland, Malta, Netherlands, and Romania did not have any reports from DPOs filed with the CRPD. All the reports were submitted in the 2015-2021 period, basically paralleling the time period covered by the EU-SILC data used in this study. The following analysis focuses on the main factors that disabled persons have identified as critical to their standard of living. It is not intended to draw a taxonomy or pecking order of countries by virtue of their compliance, or otherwise, with Article 28 or on some other objective deprivation criteria. Nor does this analysis provide a comprehensive review of all the reports; the focus is the DPOs' critique of their struggle for "adequate standard of living and social protection". The reports by DPOs take various formats: some major reports are put forward as alternative reports to the official state report; others react to the State reports, often presenting a contrasting reality; there are also reports that focus on specific areas or specific impairments. A full list of the reports analysed is itemised in Appendix L (p. 641).

8.1 Preliminary considerations

A common theme emerging from the DPOs' reports is the expressed outlook that, in general, the official country government-authored compliance reports do not give a realistic or complete picture of how disabled persons and their families experience the issues covered in the reports. More specifically, issues related to poverty, deprivation, and contiguous factors such as employment, access to affordable housing, and personal assistant services are either missing, or incomplete, or present a picture which is incongruent with the experiences of disabled persons. From the perspective of DPOs, there is a marked gap between the provisions of the UNCRPD, the official compliance reports put forward by various States, and the

experiences of disabled persons and their families. To elaborate, reports included examples of States stating that the country provides personal assistance services to disabled persons, while the corresponding DPO report claims that only 10% of disabled persons needing PAS have access to it, that such access is often a limited access, and that the vast majority of disabled persons can never afford even a limited service.

Preceding the DPOs' reports that are analysed below were two important European shadow reports that followed the EU's submission of its first compliance report to the CRPD in June 2014, having ratified the UNCRPD in 2010. The first alternative report was prepared and presented by the European Disability Forum (EDF)³ who "based its analysis on the gaps in the EU Report" (European Disability Forum, 2014, p. 7). The EDF, the principal European umbrella organisation of disabled persons, reporting on "the situation of 80 million persons with disabilities in Europe" (European Disability Forum, 2014, p. 4), argued strongly that disabled persons were "discriminated against in many areas of life and since the financial and economic crisis, are experiencing increased poverty and social exclusion" (European Disability Forum, 2014, p. 8). Based on its own analysis and the information received from its members and other civil society organisations, the EDF argued that the EU's Disability Strategy 2010-2020 lacked capacity to achieve for disabled persons the social inclusion, poverty reduction and employment targets set in the Europe 2020 strategy. Among the reasons cited by the EDF was the fact that the Disability Strategy 2010-2020 lacked implementation structures or funding and "does not contribute to reaching the targets on employment, social inclusion and poverty reduction for persons with disabilities foreseen in the Europe 2020 strategy" (European Disability Forum, 2014, p. 9). Moreover, EU anti-discrimination legislation did not protect disabled persons against discrimination in social protection, health care, and access to and supply of housing, given that it only covered discrimination in employment and vocational training. Clearly here, the EDF was making the point that the EU, as an institution and not necessarily its

³ The 'EDF Alternative Report on the Implementation of the UN Convention on the Rights of Persons with Disabilities' was endorsed by the European Women's Lobby, ILGA Europe (the European Region of the International Lesbian, Gay, Bisexual, Trans and Intersex Association), AGE Platform Europe, International Disability and Development Consortium, European Foundation Centre (European Consortium of Foundations on Human Rights and Disability), Mental Disability Advocacy Center, and the European Association of Service Providers for Persons with Disabilities.

member states, lagged behind the comprehensive anti-discriminatory provisions of the UNCRPD. This point was also recognised in the 2021-2030 EU disability strategy, unequivocally stating that “a gap exists in EU law to ensure equal treatment of persons with disabilities outside the field of employment, such as social protection, healthcare, education and access to goods and services, including housing” (European Commission, 2021, p. 17). Even more precarious, for the EDF, was the situation of disabled persons who were deprived of basic civil rights because they were legally incapacitated, compounded by the fact that EU structural funds were being used by some Member States to maintain or promote institutional care, contrary to the provisions of the UNCRPD (European Disability Forum, 2014).

The EDF report covered extensively Article 28, recognising the situation at the time of the report as one in which across all EU member states:

- disabled persons faced “a higher risk of poverty than persons without disabilities” (p. 50);
- the impact of the economic crisis was significantly greater “on the standard of living of persons with disabilities compared to the general population” (p. 50);
- as a consequence, more disabled persons were at-risk-of poverty across all the EU;
- severely disabled persons were more than twice as likely to be at-risk-of poverty than persons without disabilities, with a higher risk “among families where additional costs due to a disability have to be taken into account” (p. 50-51);
- increases in cost-sharing for services was excluding “many families from enjoying appropriate services and medication” (p. 51);
- EU supported austerity measures had directly and indirectly “affected the wellbeing of persons with disabilities, having a significant impact on their standard of living” (p. 51);
- the reduction in the real value of cash benefits had diminished “dramatically their possibility to access basic goods and services, as well as the possibility to cover the disability related costs” (p. 51).

The report puts forward the situation of all disabled persons who are not fully engaged in the labour market, especially persons in sheltered or supported

employment, highlighting the discrimination such persons experience in access to social security schemes and the enjoyment of freedom of movement. This reality contributed to a standard of living gap being experienced by many disabled persons and their families. Moreover, the higher the level of support required, the higher the risk of poverty for the disabled persons and their families.

Closely related to the EDF critique of the general standard of living situation of disabled persons in Europe was their focus on the many complex challenges that compromised disabled persons' ability to live independently and be included in the community. High on the EDF's list of concern was the use of European Structural Funds "to maintain and promote a system of institutional care that excludes persons with disability, rather than to develop community-based alternatives" (European Disability Forum 2014, p. 36), notwithstanding the Structural Funds Regulations that stipulated the use of the funds to reduce poverty and replace institutional care by community alternatives. The institutionalisation of disabled persons was also moving in the wrong direction because the quality and availability of community support services had been "hindered in the EU due to the economic crisis and related budget cuts" (2014, p. 36). Moreover, new services developed under the guise of independent or community living did not provide their users any choice or control over their service provision, carrying with them the worst elements of institutional practices. The EDF strongly recommended that any EU funds being used for "the institutionalisation and segregation of persons with disability" (2014, p. 37) be discontinued and withdrawn, and for the EU to "support the development of national plans for the transition from institutional to community-based living that should include a moratorium on new admissions" (2014, p. 37).

This EDF critique was developed in more detail in a second shadow report by the European Network on Independent Living (ENIL) and by the European Coalition for Community Living (ECCL), focused in its entirety on Article 19 of the UNCRPD. The ENIL-ECCL report concerns itself with the insufficient data on poverty, social services and disabled persons in the EU, especially those living in institutions that are not even captured in the EU-SILC poverty and deprivation data. Austerity measures, in particular cuts to public community services that support disabled persons in their homes, had hindered, if not reversed, previous progress towards

the development of independent living alternatives for disabled persons living in institutions or at risk of being institutionalised, further intensified by numerous situations in which EU Structural Funds were not being used in compliance with Article 19. The ENIL-ECCL report goes further in its focus on personal assistance services as “an essential element of independent living” arguing that “too little attention has been given to the importance of ensuring that personal assistance schemes are available to all people with disabilities living in the EU” (European Network on Independent Living and European Coalition for Community Living, 2014, p. 9). One key issue identified in the report is the link between the Europe 2020 targets for the reduction of poverty and social exclusion and the key role of personal assistance services. ENIL-ECCL strongly argue that promoting personal assistance is a concrete way of “increasing employment rates among people with disabilities, increasing the number of young people in education and fighting poverty” (European Network on Independent Living and European Coalition for Community Living, p. 36). The contention here is that without the development of personal assistance services as a core provision in a range of community-based services:

- the poverty and deprivation experienced by many disabled persons cannot be structurally addressed;
- disabled persons living in the community will be at a greater risk of being institutionalised;
- disabled persons living in institutions can never aspire for alternative choices which would enable them to live supported in community.

As far as the deprivation of disabled persons and their families in Europe are concerned, the 2014 reports by these two networks of DPOs set the main themes which find their variations developed in practically all the 66 alternative reports informing the analysis below. Without underrating the importance of the country and regional contexts reflected in the different reports, there are striking correspondences that describe the communal lived experience of disabled persons and their families in Europe. Part of this convergence may be due to the components of the reports that were analysed. As previously explained (sec. 4.6.2), the examination of the reports focused primarily on content related to Articles 28, 19 and 27 of the UNCRPD. By their nature, these reports portray a partial view that

reflects DPOs' concerns about different countries' noncompliance with the UNCRPD articles examined, and conclusions drawn necessarily reflect this propensity. This notwithstanding, the reality depicted is a clear enduring gap in disabled persons' standard of living when compared to nondisabled persons. It is a gap that reflects a different class of citizenship.

The analysis of the EU-SILC data described a deprivation reality prevalent in households supporting disabled persons, and identified some important determinants of this deprivation, for instance the subjective experience of the burden of housing costs, housing costs affordability, insufficient formal and formal support, and underemployment (sec. 6.3 and sec 6.4). There is, however, substantial unexplained variance in deprivation across households. Given that deprivation was analysed at household level, gender differences and other important considerations such as age and the nature of impairment are only partially captured in the analysis. The reliance of SAL households' income on social transfers emerged clearly; yet how this income is affected by the costs of impairment is unclear. Evidently, it is an incomplete story that needs to be further unpacked. Moreover, disabled persons living in institutional care are absent from the analysis because of the nature of the EU-SILC. The impact of living with a limiting long-term impairment, health problem, or illness, on a household's experience of material deprivation across different EU countries, and the household, regional and country factors that contribute to deprivation in these households can be further understood by drawing upon the DPOs' reports and focusing on the core themes and gaps resulting from the previous analysis, guided by the pertinent question: What is the nature of deprivation experienced by disabled persons in Europe and what are the core issues they associate with the experience of deprivation?

8.2 Disabled persons in institutional care

DPOs are notably concerned about disabled persons living in institutional care. To begin with, these people are absent from EU-SILC data: the deprivation reality described through analysis of the 2013-2019 EU-SILC data therefore leaves out a substantial proportion of disabled persons because the data says nothing about disabled persons not living in regular households. These disabled persons are,

however, considered by the DPOs to be deprived of choice, privacy, dignity, ordinary community life, their families and friends, and employment opportunities. Here, deprivation is understood as the dispossession of the ability to exercise one's basic human rights. The concern is further accentuated because some DPOs see a trend towards the further expansion of institutional type services, sometimes inadvertently supported by the use of EU funds. In countries where the data is available, DPOs report an increase in the number of disabled persons in long-term institutional care due to various push and pull factors, including the lack of affordable community alternatives further exacerbated by inadequate or cuts in funding. Disabled persons living in the community at-risk-of poverty or experiencing deprivation are also in danger of being pushed towards institutional care where their basic needs would more readily be met. Additionally, situations where the average waiting time for residential care is much less than the waiting time for community support services further increase the push towards residential institutional care.

A corresponding factor identified by some DPOs was the absence of a de-institutionalisation strategy in their country, or if there is such a strategy disabled persons are either disengaged from its development and implementation, or consider it a superficial exercise which only touches on de-institutionalisation tokenistically. The point is made by DPOs that unless a moratorium on the further development of institutions and admission of disabled persons to such institutions takes place, the current trend will not be broken. DPOs speak of a culture of institutionalisation that maintains the status quo.

Another point raised by some DPOs focused on the extent to which their Governments were committed to disabled persons' "right to participate fully in community life" irrespective of their level of impairment. Lack of comprehensive strategies and plans to close down large institutions, insufficient budgets, institutional practices carried on in community services, eligibility criteria that discriminate between different groups of disabled persons, the classification of large community based residential services as non-institutional care, the shifting of disabled persons with multiple impairments to other large residential settings as part of a deinstitutionalisation process, trends pointing at re-institutionalisation of

disabled persons in certain regions, the use of institutional care to address housing problems, all indicate that States are not embracing the full implications of Article 19. This reality, for the DPOs, is a source of discrimination especially for disabled persons who do not have the resources to work out their own alternative support networks.

Disabled persons living in institutional care are absent from the deprivation story reflected in the analyses of the EU-SILC data. Yet, the denial of active citizenship resulting from increased institutionalisation, as depicted in the DPOs' reports, cannot be overlooked. The concerns raised in the DPOs' reports are collaborated by Šiška et al. (2018, p. 50), noting that "despite significant progress in some countries, the current picture is not encouraging", going on to mention that over one million disabled persons still lived in institutions in 30 European countries. Šiška and Beadle-Brown (2020) estimated a figure of over 1.4 million disabled children and adults living in institutional care, while Šiška and Beadle-Brown (2021, p. 27) point out that persons with intellectual impairment "were particularly likely to still be in large, segregated settings and less likely to be experiencing active citizenship". Interpreting the DPOs concerns outlined above in the context of available research, the compounded deprivation picture discussed so far takes further shape: disabled persons, especially those with high support needs and limited resources, face a future in which the social infrastructure that guarantees their basic needs is institutional or quasi-institutional care in situations when support alternatives in the community are not available or accessible. In other words, disabled persons are faced with the choice of having to deprive themselves of their own autonomy and independence when they cannot afford otherwise. The compounded deprivation of SAL households may itself be a push factor in maintaining a high level of disabled persons living in institutional care.

8.3 Disabled women and other disabled persons at higher risk of poverty and deprivation

The DPOs' reports draw attention to disabled persons who are at even greater risk of poverty, deprivation and discrimination when compared to other disabled persons. In particular, the reports draw attention to the intersectional experiences

of disabled women, disabled older persons, disabled persons with multiple impairments, disabled persons with psychosocial impairments, disabled persons with any degree of legal incapacitation, disabled refugees and disabled asylum seekers.

The point is made that the lack of focus on the intersectionality of disability and gender ignores the particular situations and needs of women, and disabled men are more likely to benefit from any positive developments than disabled women (for instance in deinstitutionalisation processes), even though practices involving the compulsory admission to mental health facilities for indefinite periods tend to disproportionately affect women. Disabled women are less likely to be in employment or in part-time employment than disabled men or non-disabled women, with the inevitable consequence that disabled women face higher risks of poverty and deprivation. Moreover, the reality is further heightened in situations where disabled women have lower levels of education than other disabled persons, further restricting their access to employment.

In countries where employment support, social protection and poverty reduction programmes are not guaranteed to all disabled persons, disabled women and older disabled persons are more likely to be excluded; moreover, poverty reduction programmes tend to be vague on specific measures addressed towards disabled women and older disabled persons. Various DPOs report the disproportionate adverse effect of economic crises and subsequent austerity programmes on disabled women, considering that disabled women are more likely to be dependent on social benefits than disabled men and non-disabled women, a point portrayed in detail by Ryan (2019, pp. 137-168) and discussed in Chapter 2 (sec. 2.7). The risk of poverty and deprivation is further accentuated in situations where disabled women are victims of violence, with the argument also taking an opposite bearing, namely that disabled women at-risk-of poverty and deprivation are more likely to be victims of physical, psychological, sexual, economic and institutional violence.

The analyses of the DPOs' reports point towards an important elucidation of the deprivation story described so far; if disabled adults and their households are more likely be experiencing compounded deprivation compared to other households, then the situation is further intensified by the intersectionality of sex and age, and

other factors that increase the barriers disabled persons experience in accessing services, benefits, and employment. In the analyses of the EU-SILC data, a female-led household was more prone to deprivation; age, however, was not a predictor of increased deprivation. Although this study focused on persons ‘strongly limited’ in ‘activities people usually do’ (the most severe category available in the data), the higher prevalence of the households supporting disabled persons in the older age categories reflects the reality of age-related increased impairment. The decrease in deprivation predicted by age may be reflecting a distinction between the deprivation experienced by disabled persons as they grow older and the deprivation experienced by older persons as they become more ‘disabled’; the former may reflect an accumulation of disadvantage more than the latter.

8.4 Limited employment opportunities

The higher prevalence of disabled persons living in households at-risk-of poverty and deprivation, described in the analysis of the EU-SILC data (sec. 5.4), is reflected strongly in all the DPOs’ reports. Improving employment opportunities is considered a key factor to advance the income of disabled persons and the long-term reduction of impairment related poverty and deprivation. To different degrees, all reports emphasised limited employment opportunities and barriers to employment as a main contributing factor to disabled persons’ higher prevalence of risk of poverty and deprivation. Disabled persons are extremely vulnerable to economic shrinkages but are less likely to benefit from a labour market boom. When the ability to maintain employment depends on the provision of support services, the contraction in service provision had a direct impact on disabled persons’ ability to be in employment. Moreover, limits on benefit payments aimed at pushing disabled persons into employment have often had an iatrogenic effect, driving disabled persons further away from the ability to take up work. The net result is that throughout all of Europe, the rate of unemployment amongst disabled persons is notably higher, and correspondingly the employment rate is substantially lower; moreover, a significant pay gap exists between disabled and non-disabled persons. This fact is also recognised in the 2021-2030 EU disability strategy, referring to the high employment gap between disabled and nondisabled persons, pointing out how disabled persons “have a lower employment rate, are disproportionately affected by

unemployment, and leave labour markets earlier” (European Commission, 2021, p. 13). Interestingly, the strategy highlights the particular difficulties of disabled persons with severe impairments and disabled persons deprived of legal capacity, two points of concerns raised by DPOs.

When entering the labour market leads to a corresponding loss in benefits, disabled persons and their household experience a financial risk, especially in situations where there is no guarantee that benefits would be restored should the employment be discontinued, and if the process of reapplying for a benefit ignores one’s previous impairment and benefits history. Disabled persons and other household members supporting them are sometimes driven to choose between taking up employment or keeping their approved benefits and support services. Some benefits are exclusive to a condition of no employment income, and sometimes no work whatsoever is permitted even if the work is voluntary unpaid work. Impairment related benefits that are not lost with employment and are not means tested are considered an essential asset in fighting poverty and deprivation amongst disabled persons and in facilitating social participation. In such situations, disabled persons in employment generally have considerably better income than those who rely solely on social benefits.

In many situations of sheltered employment, such employment is not considered gainful employment and disabled persons do not benefit from employment related benefits and income; in other words, there are clear gaps between the primary labour market and the secondary labour market in which disabled persons often find themselves, a point also highlighted in the 2021-2030 disability strategy (European Commission, 2021, p. 13). The point was made by DPOs that being declared unfit for work is habitually a life sentence and one that takes place early on after disabled youth finish their education; and when this happens sheltered employment and corresponding social benefits become one’s only lifelong option. A focus on young disabled persons’ transition out of school is necessary to increase their open labour market employment prospects.

The experiences of disabled persons depicted in the DPOs’ reports point towards the employment gap as a major factor contributing to the compounded deprivation experienced by households with disabled persons. This employment gap reflects a

broad range of barriers that correspond to the vast degree of impairment and support needs that disabled persons experience. Commonly, incentives and policies addressed towards employers result in favouring disabled persons with mild impairments. The DPOs' reports point towards disabled persons with complex support needs and the difficulties faced in an open market employment driven by productivity and profit. In such situations, disabled persons cannot rely on employment derived income to survive and meet their needs. The DPOs' perspectives on unemployment and underemployment being major contributory factors to the experiences of material deprivation of disabled persons and their households are consistent with the research reviewed (sec. 3.3) and resonate Oliver's (2009, p. 123) appeal for a "reappraisal of the very meaning of work".

8.5 The structure and inadequacy of benefits

According to the DPOs' reports, there are limited alternatives to employment derived income. When employment does not provide disabled persons and their households enough income to live on and the household does not have access to other resources or income, their standard of living, their risk of poverty and deprivation, all depend on the extent of coverage provided by social benefits. In Chapter 5 (sec. 5.5), the value of social transfers for SAL households and their impact on reducing the gap between SAL and nonSAL households was reviewed in detail. Clearly, social transfers are key to reducing deprivation for disabled persons and their households. Yet, the stark reality described in the DPOs' reports is one in which income supplements commonly fall short of addressing the needs of disabled persons; they fall short not only in enabling disabled persons to participate fully in society but often to simply prevent their relative poverty and deprivation. The situation has, over the past years deteriorated as a result of austerity measures. Even where disability benefits were untouched, the cutbacks on general social benefits, social services, health services and other public services had a disproportionate effect on those groups in society that are more likely to depend on them, not least households of disabled persons. In other situations, more stringent eligibility criteria were introduced to reduce beneficiaries. Regardless of any cutbacks, in situations where benefits are not indexed to reflect average increases

in the income of the rest of the population, the income gap between benefits-dependent disabled persons and employed persons has widened.

At the lowest income level, many disabled persons depend on means-tested minimum income benefits with eligibility criteria that do not consider impairment related extra expenses. Such benefits are rarely enough to move their beneficiaries above the at-risk-of poverty threshold; even in countries with social insurance systems generally considered as providing 'satisfactory protection', the standard of living and high costs of living moderate the positive impact of such benefits. In the case of disabled persons, the situation is often worse because of their additional impairment related costs. When impairment related benefits are means tested, especially when means tested at household level and including a household's assets, such benefit systems perpetuate poverty and deprivation by forcing disabled persons and their households to live in a permanent state of dispossession, considering that any accumulated resources would be used against them. The situation is even worse when impairment related benefits are considered as part of a household's disposable income for means tested services or other benefits. Moreover, means testing impairment related benefits discourages disabled persons' and their households' economic activity if impairment related benefits are terminated or reduced because of employment income.

A common critique of the social benefits systems in the DPOs' reports was that entitlements are often based on cause or classifications but rarely through a realistic assessment of need. For instance, in accessing impairment related benefits because of dementia, an example was given of difficulties faced by persons with young-onset dementia because dementia is attributed to older age, or for older persons with dementia because older persons can expect to experience dementia. DPOs highlighted the difficulties encountered because of benefit systems that do not employ the flexibility to adjust to a disabled person's impairment-related needs beyond basic requirements; and where such flexibility exists, the maximum rates permitted are not enough to meet the actual costs involved in securing a standard of living beyond merely escaping poverty and deprivation. Additionally, the situation is further aggravated by the lack of coverage of most social insurance

systems to household members who are unable to remain in employment or who reduce their hours in employment to support a disabled person.

In addition to the inadequacy of social protection systems, DPOs extensively documented various difficulties disabled persons faced in accessing benefits and services. Negotiating excessive bureaucracy, frequent changes in assessment criteria, slowness in processing of benefits, and the lack of efficiency in getting benefits on time, all contributed to additional experiences of deprivation for disabled persons. Such issues were considered to be even more evident when disabled persons lacked benefits literacy or compensatory advocacy services to help them deal with the system. DPOs raised the situation of disabled asylum seekers as an illustration. Disabled persons faced additional difficulties when benefits were administered on a regional or municipal basis without provision for the transportation of benefits when moving house involved crossing regional or municipal jurisdictions. At an EU level, minimal provisions exist that facilitate the transportation of impairment related benefits when moving between states.

The general conclusion drawn from the DPOs' reports is that although the benefit structures are critical for disabled persons' daily needs, they are seldom structured in ways that sufficiently contribute to fundamental changes in the deprivation situation of disabled persons and to support disabled persons' active participation in society. They fall short on adequacy, in their administration, and in the eligibility criteria to access them, thereby failing to secure an adequate standard of living for disabled persons and their households whose employment derived income is in anyway restricted. These issues emanating from the DPOs' reports correspond to the findings in Chapter 5 (sec. 5.5); even after social transfers, the gap in the total household disposable income between SAL and nonSAL households persisted. The 2021-2030 EU disability strategy (European Commission, 2021, p. 15) also acknowledge that "the objective of an adequate living standard for all has not yet been achieved" including insufficient social protection as a main reason for disabled persons and their families experiencing higher risks of poverty. Interestingly, the same document also noted that the "eligibility criteria for disability benefits sometimes act as a barrier to employment" (2021, p. 15).

8.6 Lack of provision of affordable and accessible housing

A key factor that features in the DPOs' submissions on Article 19 and Article 28 is disabled persons' concern with access to, or lack of, affordable and suitable housing; affordability and suitability are strongly intertwined in the struggles expressed by the DPOs. Access to housing is considered an essential factor for persons to move out of poverty; however, access to suitable housing that meets the need of disabled persons depends on availability and financial resources, namely household income from employment and benefits. Because of their low income, many disabled persons rely on the provision of social housing and other housing benefits for their needs; their level of deprivation depends directly on such provisions. Even in social housing schemes that limit housing related expenses to a proportion of household income, for instance to a maximum of 30% of household income, the impact on the net disposable household income is significant, especially for disabled persons in households with low income. High housing costs are considered as contributing to a life of deprivation for many disabled persons.

Where the housing situation of disabled persons is addressed, it is described as a deteriorating one. Some DPOs critiqued the fact that their country had not developed a housing policy for disabled persons, considering the availability of affordable housing as central to facilitate independent living choices for disabled persons. This issue gains further importance for any progress to be registered in deinstitutionalisation strategies; if disabled persons currently living in the community already experience significant problems in accessing affordable housing, how can society support more disabled persons to live in the community? The point was made that without a diverse range of social housing services and complementary support services, the push for and trend towards further re-institutionalisation will continue. The absence of State strategies to increase affordable suitable housing for disabled persons and lack of investment in mainstream accessible housing has been a major obstacle for the further inclusion of disabled persons in the community.

Housing affordability is further complicated by the lack of availability of accommodations built according to 'universal design' standards, namely housing which meets the needs of disabled persons whose impairments require adaptations

to regular housing. DPOs have also strongly criticised the regression in certain building regulations that exempt accessibility requirements for family housing units; the lack of mainstreaming of universal design principles further contributes to the lack of accessible and suitable housing, making accessible and suitable housing a rare commodity, contributing to further increasing the costs of accessible and suitable housing and the costs of adapting non accessible and non-suitable housing.

Under the guise of inclusive housing or group homes or sheltered accommodation, micro institutions continue to be developed. These are residential services not considered by DPOs as contributing to increasing access to, and choice of, affordable housing for disabled persons. These residential services' only contribution to addressing risk of poverty and deprivation amongst disabled persons is that their users are provided with basic shelter and care, while no longer being captured in the EU-SILC poverty and deprivation data; in other words, such developments do not address the disability gap in access to housing by increasing the supply of affordable and suitable housing but does so by decreasing the demand through provisions considered by DPOs as noncompliant with the UNCRDP. The point was also made on the unacceptable housing conditions of many disabled adults under the legal protection of the state and who are housed in institutional type residential services; being in residential care is not seen as a guarantee against their residents experiencing poverty and deprivation, especially when the disabled persons are left with minimal disposable income on the understanding that their needs are provided for by the service.

Disabled persons with recognisable impairments, especially persons with mental health impairments, are extremely vulnerable to discriminatory practices in accessing housing, including public housing. In addition to the already limited supply of affordable housing, mental illness can act as a further barrier because of lessors' or neighbours' fear, prejudice or ignorance. This reality further limits choice, reduces affordability and contributes to the ousting of low income disabled persons from the housing market. Where a statutory obligation exists to assist disabled persons in accessing suitable housing, the obligation is often weak and contributes to discretionary practices by the responsible authorities. The extra support needs of

disabled persons are often ignored in allocation policies, such as when no consideration is given to a disabled person's need for live-in support staff. Moreover, forcing disabled persons to move house because of administrative considerations ignores factors such as the disabled persons' possible reliance on informal supports and any adaptations they would have done to their accommodation. All these factors further contribute to disabled persons' lack of self-determination in establishing their living arrangements. Šiška and Beadle-Brown's (2020) review of 27 EU countries' transition from institutional care to community-based services also concluded that in almost all the countries reviewed, "*the lack of affordable community-based and social housing is one of the primary barriers to scaling up community living, and to combating homelessness; appropriate housing policies, strategies, and practices are crucial to sustaining deinstitutionalisation efforts*" (2020, p. 4). Likewise, the 2021-2030 EU disability strategy attributes the insufficient provision of housing as one of the main factors contributing to disabled people's segregation from community life and calls on member states to "promote and secure financing for **accessible and disability-inclusive social housing**, including for older persons with disabilities" (European Commission, 2021, p. 12).

Together with the provision of personal assistance services (discussed in the following section), access to affordable housing is key for disabled persons to exercise choice on where they live; the alternative for disabled persons who cannot afford to live in the community is to surrender their lives to residential services where housing and support services are tied. The subjective experience of housing costs as a heavy burden, identified as a strong predictor of SAL households' deprivation (sec. 6.3.4 and sec 6.4.4) is further explained through the DPOs' reports analysed. Their argument can be interpreted as follows: any country committed to supporting disabled persons in exercising their right to live independently in the community free from deprivation and risk of poverty needs to address the housing suitability and affordability issue.

8.7 The critical role of personal assistance in narrowing the disability gap

The analyses described in Chapters 5 and 6 identified the availability of non-material support as a factor that reduces deprivation intensity for disabled persons. However, given the limitations of the measures used, findings do not explain the nature of support disabled persons consider as central to their capability to live their lives. The analysis of the DPOs' reports captures and elaborates extensively the role of personal assistance (PA) as a critical tool that enables independent living; it is an issue that resonates throughout all the DPOs' reports studied. Adult disabled persons consider PA as the flexible need-driven support that gives them choice and control over their lives, by compensating for any activity limitation they experience due to their impairment. In this context, PA is used as a broad umbrella of support services, based on the individual needs and life circumstances of the disabled person. Disabled persons underline some of the key characteristics of what PA entails:

PA is purchased through earmarked cash allocations for disabled people, the purpose of which is to pay for any assistance needed. PA should be provided on the basis of an individual needs assessment and depending on the life situation of each individual. The rates allocated for personal assistance to disabled people need to be in line with the current salary rates in each country. As disabled people, we must have the right to recruit, train and manage our assistants with adequate support if we choose, and we should be the ones that choose the employment model which is most suitable for our needs. PA allocations must cover the salaries of personal assistants and other performance costs, such as all contributions due by the employer, administration costs and peer support for the person who needs assistance. (European Network on Independent Living and European Coalition for Community Living, 2014, p. 40)

The above description provides a critical benchmark reflected in the DPOs' reports by which benchmark most PA services, when and where available, fall short from the service standard as envisaged by disabled persons. A simpler, compatible, more

intimate description of personal assistance is that provided by the late disabled person Judith Snow (2015, p. 88):

Personal assistance is an ongoing transaction between two people. It is a dance which is led by the person who is building and fulfilling their place in the community and who relies on the interface their assistant provides to be able to function in an otherwise inaccessible world.

In the context of this study, the first point needing clarification is that PA (similar to housing) is not solely a matter that concerns disabled persons at-risk-of poverty or experiencing deprivation. What is particular for low-income disabled persons is that access to these two critical services for their day-to-day living depends on budgets which they do not have unless provided for through social provision. Moreover, given the substantial expense involved in housing costs and in PA services, the impact of both can contribute to material deprivation even for households whose income is well above poverty thresholds. In other words, only disabled persons with substantial own resources can source the support services they need at market prices; for all others, the cost of PA will directly impact the disabled person's household disposable income if such costs are not covered by social protection.

Budget allocations for PA were at all times considered to be limited and inadequate to meet even the basic needs of most disabled persons. Some reports discuss limited services while others describe limited budgets; but in all cases, the main factor that determined the level of PA available for disabled persons was insufficient funds. The net effect was that the PA provision for disabled persons fell short of what was considered necessary. There were situations where the funds provided for an approved number of hours of PA did not cover the actual costs of the service sanctioned; consequently, disabled persons would have to settle for less hours than they would officially be approved or fork out the expenses not covered by the funding. DPOs repeatedly argued for the massive expansion of PA schemes, for such services to be independent of disabled persons' place of residence, for such programmes to be standardised without being overregulated to the extent that they become an institutionalised service, for the services to be user controlled, for the services to cover more than the minimum care needs, for PA to be accessible to all

disabled persons, and for the service to be needs-led rather than based on impairment classification.

Focusing on these last two points, disabled persons expect their PA provision to cover more than their basic cooking, dressing and personal hygiene needs, and for the service not to be limited to regular office hours; being able to access services outside one's home and participating in ordinary activities of community life often involved significant extra costs if not covered by their PA provision. If the disabled person's household was not in a position to cover such extra costs, something as simple as going out for a drink became a luxury the disabled person could not afford. Other situations described included the PA provided only for activities outside the home, with the expectation that anything that takes place within the home had to be provided for by the disabled person's household members. Disabled persons without the availability of such support face the same predicament described above. In other circumstances, PA was addressed only towards disabled persons with physical impairments or as a means for such persons to engage in employment; disabled persons with intellectual or psychosocial impairments, or disabled persons not in employment were less likely to be beneficiaries of PA services (for instance, the idea of older disabled persons being eligible for PA was considered an anathema within many service provision regimes). This reality creates discrimination between different groups of disabled persons, depending on the level of provision and eligibility criteria used. Regional and municipal variations in the provision of PA were also common.

When disabled persons cannot rely on their own resources, the waiting time for PA becomes a push towards institutional alternatives; if a disabled person cannot cope without support, and if that support is not available from other household members or contracted from own resources, residential care becomes a more likely alternative. With the current funding structures, with more resources going to residential care than to PA, delay for accessing residential services is often a fraction of PA waiting time. Co-payments for PA create further barriers for low-income disabled persons or push disabled persons into tighter remaining budgets for their daily expenses. Moreover, disabled persons without the capability of seeking and striving for PA, and in managing any approved service, are unlikely to benefit from

such provision unless the PA schemes are proactive in reaching out to such disabled persons according to their individual needs and circumstances. Similar to the point made about benefits, negotiating excessive bureaucracies is an additional struggle for disabled persons trying to access PA and other support services.

DPOs' reports highlight that the statutory provisions regulating PA are generally weak. In most situations, a right to PA or a right to live in the community does not exist or does not provide comprehensive coverage. Both positive and negative developments with regards to PA statutory rights are taking place concurrently; for instance, the enactment of a new 'right to PA' law was followed by provisions to limit its scope while in other situations the statutory right to PA is being interpreted as a cost problem to sanction cutbacks, cutbacks that sometimes also took place in spite of strong public finances. In other circumstances, the development of direct payments and personal budgets for the support of disabled persons have contributed significantly to the improvement of the quality of life of those who benefitted from such developments. On the other hand, there are situations in which the right to live in the community is interpreted to include institutional residential provisions, situations that work against the use of personal supports to increase disabled persons' choice and autonomy. Disabled persons with high support needs are especially vulnerable to such interpretations. Portability across municipalities or regions is also an issue in some countries, further restricting disabled persons' choices of where to live.

The centrality of PA and the subjective experience of housing affordability (discussed previously) emerge as the two factors that substantially contribute to disabled persons and their households' vulnerability to deprivation; unless a household's resources provide the disabled person with the capability of meeting their support needs and the costs involved, and in navigating the service system, the household's risk of experiencing deprivation is significant. Similar to housing costs involved in security suitable accommodation in the context of a household's resources and requirements, for disabled persons who need PA, the expenses involved can be described as a 'fixed cost'; it can vary only to the extent that one's support needs and situations vary, but in most circumstances, it is more likely that the support needs and the corresponding costs increase rather than decrease.

The findings from the analysis of seven years of EU-SILC data and the findings from the analysis of the DPOs reports are further collaborated by Šiška and Beadle-Brown's (2020, p. 13) review and are acknowledged in the 2021-2030 EU disability strategy (European Commission, 2021, p. 11). Disabled persons cannot do away with housing costs (unless they own their property and even then, there are still substantial housing costs such as maintenance, heating, property taxes, and other services); nor can they do away with their support needs, and for most disabled persons they cannot look ahead and envisage situations with less support needs (or less housing costs for that matter). Nevertheless, the reality depicted in all the European countries covered by the DPOs' reports, is a far cry from the ENIL-ECCL understanding of what PA is and how it should function in providing disabled persons with the capability for living an ordinary life in the community. It is a reality contributing to the compounded deprivation experienced by disabled persons and their households.

8.8 Conclusion

The experiences of disabled persons and their households, as reflected in 66 DPOs' alternative reports on the level of compliance with the provisions of the UNCRPD by 26 European States, elaborate substantially the understanding of their 'compounded deprivation' identified in the previous chapters.

First, many disabled persons still live in institutional settings, and the trend to re-institutionalisation has not been reversed over the years covered by the DPO reports (2015-2021). In all countries, there are substantial percentages of disabled persons not living as part of a household in the community; these persons do not feature in the EU-SILC data and their deprivation can only be interpreted from the experiences of disabled persons reflected in the DPOs' reports. Living in institutional care may or may not mean that the disabled person experiences material deprivation; it has been argued that being part of a total-care institution does not necessarily mean that all one's needs, beyond the basic needs, are catered for. Moreover, as a result of being in residential care, many disabled persons do not have the financial and support resources they may need to venture beyond the provisions of their care.

Their deprivation goes beyond the deprivation studied through the MDI analysis of the EU-SILC data.

Second, the DPOs' reports also identify intersectionality of deprivation as an important factor when understanding the deprivation experience of disabled persons. Disabled women, disabled older persons, disabled asylum seekers and disabled refugees, are all at greater risk of poverty and deprivation because of the compounding factors that act as barriers to income and support resources. Moreover, disabled persons with multiple complex impairments, especially chronic mental health related impairments, and disabled persons with low service literacy and ability to negotiate the benefit and service system, are also reported as more likely to be at-risk-of poverty and deprivation. This intersectionality dimension is not captured in the EU-SILC data, but the DPOs' reports, unsurprisingly, give this matter significant weight when considering compounded deprivation in the respective countries they covered.

Third, employment derived income for many disabled persons is limited. Households supporting disabled persons rely heavily on social transfers (sec. 5.5) and a well-defined negative gap exists in these households' disposable income (sec. 5.6.4). Consequently, disabled persons and their families experience compounded deprivation, as clearly ensues the analysis of the 2013-2019 EU-SILC data. The DPOs' reports further reveal that in situations where impairment related financial benefits and support services are not means tested, disabled persons in employment are substantially much better off than other disabled persons. However, disabled persons are more likely to be living in households with low work intensity; moreover, there is a disability gap in income derived from employment. Consequently, deprivation for disabled persons and their households is closely related to their employment derived income, but further mitigated or aggravated by the interplay of their employment income with financial benefits, support services, and the extent of additional costs of impairment. Employment alone, while a key factor to fight impairment related deprivation, is not enough.

Fourth, social transfers are key to reducing the gap between households supporting disabled persons and other households, and the consequential deprivation experience of disabled persons. Even in countries with generous financial benefits,

the resultant household income is often not sufficient to insure disabled persons against being at-risk-of poverty or experiencing deprivation. This finding from the DPOs' reports may be partially explained by the limitation identified in the EU-SILC analysis (sec. 5.5) for generous social transfers to substantially reduce the gap between SAL and nonSAL households' income because of the pre-social transfers income inequality. The situation can be further intensified when benefits are means tested or act as disincentives for increased economic activity at household level.

Fifth, the centrality of affordable and suitable housing as a key contributing factor to the wellbeing of disabled persons and their households, emphasised in the DPOs' reports, confirms the centrality of housing costs as a critical factor to disabled persons' experience of deprivation. The EU-SILC analyses identified households experiencing their housing costs as a heavy burden as a strong predictor of deprivation, and households supporting disabled persons were significantly more likely to report experiencing their housing cost as a heavy burden, a subjective experience not reflecting or only reflecting in part their actual housing costs. DPOs further explained that the limited supply of affordable and suitable housing not only contributes to risk of poverty and deprivation but also acts as push factor in the institutionalisation of disabled persons.

Finally, more than any other factor, and invisible in the EU-SILC data, the availability of flexible support PA services tailored to the individual needs, desires, aspirations, situations and management of the disabled person, is capable of contributing to overcoming the impairment related activity limitations. Though not the panacea for all barriers and discrimination experienced by disabled persons, the availability of adequate and reliable PA can substantially contribute to reducing the deprivation gap experienced by disabled persons.

It is significant to note that the DPOs' reports focus on those areas that according to disabled persons are not adequately covered, or wrongly covered, or completely ignored in the State reports. There is no agreement between official State reports and the DPOs' reports on the full reality experienced by disabled persons, let alone how this reality is going to be addressed. Both the quantitative EU-SILC data analysed, and the examination of disabled persons' experiences as presented in the DPOs' reports, contribute to an understanding of the extent and nature of

deprivation experienced in households with an adult member who is severely limited in activity because of an impairment. The understanding derived, though far from complete, lends itself to an interpretation of what is here referred to as the limited citizenship, or gap in citizenship, disabled persons experience because of their deprivation. Clearly, and the DPOs' reports testify to this, one cannot reduce this limited citizenship solely to the compounded risk of poverty and deprivation that disabled persons experience because of their impairment; the disabling barriers they are subjected to permeate all of society. However, the data analysed distinctly shows a negative economic and material deprivation gap resulting from impairment, and when the housing and support needs cannot be offset by the economic capability of the household, the resultant gap implies a poorer quality of life deprived of a full and active citizenship.

In the last and concluding chapter, the policy and research implications of the findings from this study are discussed together with key recommendations for future research and policy development.

Chapter 9. Conclusion – Eradicating disabled persons’ compounded deprivation

This study focused on a reality that permeates the lives of persons who, because of “any on-going physical or mental health problem, illness or disability” (Eurostat 2020, p. 271), experience a long-term severe limitation in performing an activity people usually do. It compared households with and without the presence of long-standing limitations, in 32 countries, over a seven-year period, and analysed the perspectives of DPOs on the reality experienced by disabled persons in living an ordinary life in the community. The detailed quantitative analysis of seven years of EU-SILC cross-sectional data produced clear trends on the compounded deprivation experienced by SAL households. This reality was further analysed for 2018, making possible the identification of micro and macro determinants of SAL households’ deprivation. The analysis of the DPOs’ reports enriched the understanding of the deprivation story embedded in the EU-SILC data analysed. The study adopted a broad material deprivation conceptualisation of poverty, and identified the subjective experience of a heavy burden of housing costs as a significant predictor of material deprivation as measured by the MDI. This predictor is a subjective indicator of housing affordability and measures the perceived impact of the costs on a household’s finances and resources, rather than the actual costs itself. It is therefore a measure that reflects a household’s housing affordability experience in its totality, including the size, context, needs and other factors particular to any household, issues that objective housing expenditure-to-income ratio measures do not reflect. It is more than a measure of subjective financial stress because it reflects a fundamental need and dimension of any household’s aspiration for a decent living; in other words, it can be argued that it is a measure of perpetual subjective financial stress which requires a substantial improvement in housing provision or in financial standing for the measured stress to abate. The consistency of this finding suggests that addressing the subjective experience of housing costs is critical to poverty reduction in Europe (Dewilde, 2022; Deidda, 2015). Addressing the subjective experience of housing costs implies more than attending to the affordability of housing through a housing costs-to-income ratio consideration; a household may settle for an affordable accommodation because that is all it can manage to pay for, without considering such accommodation as meeting its needs, in which case the

subjective experience may still be considered one of a heavy burden despite their affordable accommodation. The research and policy implications of this core finding are discussed further on in this chapter.

In a way, this study can be considered as corroborating Hick, Pomati and Stephen's (2022) extensive research project on the relationship between poverty outcomes and housing conditions and costs, currently in progress. In the introduction to their study, Hick, Pomati and Stephen (2022, p. 5) argue that "high housing costs can prevent families from meeting their non-housing needs and can push them into poverty". The findings of this study focus on a time period in which housing prices increased consistently across Europe; however, increase in housing prices was not reflected in a corresponding increase in the average housing costs faced by households, and did not necessarily translate into a worsening of housing affordability (Hick, Pomati and Stephen, 2022). This notwithstanding, using the housing costs-to-income ratio objective measure, Hick, Pomati and Stephen (2022, p. 26) found that "housing cost overburden is strongly related to poverty status in every nation" with "those on lower incomes fac[ing] very substantially elevated risks of cost overburden on this measure" and that "differences in housing cost overburden between poor and non-poor households are vast in almost every country" (p. 34). Although Hick, Pomati and Stephen (2022) examined income poverty and an objective measure of housing cost overburden, their findings parallel those of this study. Undeniably, as the results of this study show, households considering their housing costs a heavy burden are reflecting a reality that goes beyond the actual housing costs experienced by the household; yet this subjective experience is strongly related to household deprivation as measured by the Modified Deprivation Index. In this respect, the analysis of the DPOs' reports presents a perspective on the critical nature of suitable affordable housing that goes beyond cost, accentuating the importance of the flexible support services necessary to ensure suitable alternatives in disabled persons' living options.

Interpreting the findings of this study to infer the conclusions drawn below, and the implications for policy and research, requires that the limitations of the study are carefully recognised. The research strategy, design and methods used determine the

boundaries within which any of the findings can be interpreted and their implications deduced.

9.1 Limitations of this study

The tension between the attempt to understand the universal bigger picture at European level and the effort not to lose focus on the particular uniqueness of disabled persons' personal experiences is present throughout all of this study, a tension that is difficult to resolve. The underlying assumption is that one is able to zoom out to understand the bigger picture without devaluing the heterogeneity of disability, understood only by zooming into the lived experiences of poverty and disability. The gravity portrayed in the bigger picture analysed in this study can be recognised as a moral argument to acknowledge the stark shared reality of deprivation of all the disabled persons and their households captured in the cumulative data. Each household unit analysed reflects persons living together telling their story through numbers; and the numbers tell a story of strong associations between deprivation and disability.

The secondary analysis of the quantitative data from seven years of EU-SILC studies juxtaposed with the experiences, analysis and recommendations of disabled persons as expressed in the DPOs' reports examined in this study are an attempt to understand the experiences of poverty and deprivation of disabled persons and their family households within the wider European comparative context. The study was primarily focused on understanding commonalities in the experience and less focused on considering differences between the reports analysed. In this respect, an underlying limitation is the loss of contextual detail that may apply differently across regions and countries. This limitation is evident in the high proportion of unexplained variance across households, regions and countries resulting from the regression and multilevel analysis of deprivation.

In addition to the above limitations, the following specific issues further limit any conclusions and generalisations drawn from this study:

1. Conceptually, this study uses a broad understanding of material deprivation that also included a measure of subjective economic stress. It departs from

other studies that draw a clear distinction between material deprivation, housing deprivation, economic deprivation, and deprivation as a composite concept including all types of deprivation. The MDI is neither a strict measure of material deprivation nor is it a comprehensive index of all deprivation; it included most of the measures of enforced deprivation available in the EU-SILC 2013-2019 data, including measures that represent lack of resources but also other measures that represent financial stress, housing deprivation and constraints on participation. The MDI can therefore be interpreted as an incomplete measure of the concentration of household deprivation. It is incomplete as it reflects a selection of conditions that directly or indirectly indicate deprivation; however, households supporting disabled persons, and other households for that matter, may have other situations not covered by the MDI which are clear indicators of deprivation.

2. The secondary analysis of quantitative data depends on the reliability and validity of the data analysed. While EU-SILC data is considered to provide high-quality data sets that are based on large and representative samples, this study did not carry out a country by country and year by year analysis of any possible weaknesses in the data.
3. The use of the activity limitation measure to distinguish households with and without an adult member severely limited in activities considered normal in their particular context, while providing a consistent measure for comparative purposes, is susceptible to cultural and contextual interpretations, as evident in the prevalence variations across countries.
4. The EU-SILC data does not capture disabled persons who are currently living in institutional care; the DPOs' reports have identified the continued trend towards the institutionalisation of disabled persons as a major deprivation issue, and one that does not seem to be improving. In this respect, this study underestimates the deprivation of disabled persons who are no longer living in the community.
5. This study does not cover the situation of families comprising children with a limiting impairment, health problem or illness.
6. This study does not distinguish between disabled adults of working age and disabled older persons. While this choice was a conscious one, it does run the risk of having findings that are influenced by the demographics of particular

country, and which was not accounted for in the analysis. The age of the person responsible for the household accommodation was considered in the analysis; however, this age does not reflect the age of the disabled person in the household.

7. The DPOs' reports analysed were those available in the public domain in the English language. Not all countries had reports prepared by DPOs. Moreover, some countries had DPOs' reports that clearly represented more active disabled persons associations, which means that the analysis of the DPOs' reports does not necessarily represent a balanced coverage of all 32 countries.
8. The analysis of the DPOs' reports is limited in that it focused exclusively on issues relevant to the research question. It did not seek evidence of the impact of policy alternatives in the various jurisdictions discussed in the reports. The analysis was narrowed to major issues, most of them common factors that DPOs identified as critical for their country's compliance to Articles 28 and 19 of the UNCRPD. The reports put forward various other concerns, covering all of the UNCRPD; all of the issues included in the DPOs' reports and not covered in the study also have bearing on disabled persons' capability to active citizenship.
9. While the study provides a strong comparative picture of deprivation across Europe over seven years for households with and without severe activity limitation, it lacks the depth that distinguishes the nature of material deprivation between different countries; material deprivation is primarily understood quantitatively and limited by the deprivation measures available in the EU-SILC. Part of this limitation is addressed in the secondary analysis of the DPOs' reports.
10. The study lacks the direct participation of disabled persons; the input of disabled persons is limited by the nature of the DPOs in each respective country and the reports submitted.

Notwithstanding the limitations listed above, the study provides a reasoned picture of how households with disabled persons experienced material deprivation in 32 European countries over the bulk of the second decade of the 21st century, a picture that tells a consistent and unswerving deprivation story.

9.2 The study's main conclusions

There are some key conclusions that can be drawn from this study:

First, across all 32 European countries over all the years analysed, households comprising an adult person who is severely limited in activities people usually do, experienced higher material deprivation. To the extent that such households represent households with disabled persons, one may conclude that disabled persons live in households that experience a compounded deprivation compared to other households. DPOs have highlighted how this compounded deprivation is further intensified in situations that involve disabled women, disabled older persons, disabled refugees and asylum seekers, disabled persons with multiple impairments and complex support needs, disabled persons with psychosocial impairments, disabled persons with some degree of legal incapacitation, and disabled persons with limited service literacy. All households with a situation of self-perceived bad or very bad health situation had the highest prevalence of deprivation.

Second, this compounded deprivation can be cogitated as a structural one, considering that it is not limited to the lower income groups but occurs all across the income spectrum. It points towards a disability gap in the quality of life between households in comparative income brackets. This gap is experienced by disabled persons and their families as discriminatory in that they are commonly not able to enjoy a decent quality of life whereby their basic needs are sufficiently met.

Third, the contribution of social transfers in reducing the gap between the two groups of households compared is significant, but also depends on the extent of the gap before the social transfers. Consequently, it is not enough to look at the level of expenditure on social protection benefits targeting disabled persons; the impact of such benefits is moderated by the inequality between the two groups of households prior to the social transfers. Even in countries with generous social protection benefits, disabled persons considered their provision as inadequate to secure for them the resources essential for an ordinary life in the community.

Fourth, the main predictor of deprivation in 2018 was the subjective experience of a heavy burden of housing costs. Although, as previously discussed, this finding has

to be interpreted with caution (sec. 6.2.5 and 6.4.3), it does supplement the conclusions reached by Hick, Pomati and Stephens (2022) using objective housing affordability measures. Households that identified themselves as experiencing the total housing costs as a heavy burden were those with the higher level of material deprivation. Offsetting the impact of the heavy burden of housing costs would entail significant increases in household income if this deprivation predictor was a straightforward measure of housing costs, which it is not. While more research is required to understand what factors are captured in a household's subjective heavy burden experience of its housing cost, it is reasonable to assume that this measure is reflecting the centrality of a household's housing experience in relation to the households' resources. For instance, disabled persons identified the lack of adequate and affordable housing as a key determining factor to their capability of being able to live and participate in their communities. Borrowing from Hick and Stephens (2023, p. 91), one may argue that housing functions "as an important mediator of the relationship between disposable household income and living standards". The data analysed does not portray 2018 as a unique year; some additional preliminary analysis of the other years not included in this study also point towards the subjective experience of a heavy burden of housing costs as a strong explanatory variable of deprivation.

Fifth, in addition to housing, disabled persons identified the availability of personal assistance services as key to their capability to bridge the disability gap that deprives them from living an ordinary life in the community. Personal assistance services, understood as the flexible, user controlled, support services are considered critical by DPOs for disabled persons to access employment, to participate in community life, to prevent institutionalisation, to reverse the current trend to re-institutionalisation, and to support the deinstitutionalisation of disabled persons currently living in institutional settings.

The emphasis of disabled persons on the need for personalised support services is congruent with the high unexplained variability in the deprivation of households with disabled persons. Personal assistance services, by definition, are services designed to meet disabled persons' needs "on the basis of an individual needs assessment and depending on the life situation of each individual" (European

Network on Independent Living and European Coalition for Community Living, 2014, p. 40), thereby enabling disabled persons “to be able to function in an otherwise inaccessible world” (Snow, 2015, p. 88). The extent to which such individual needs are met determines disabled persons’ capability to live their lives in the community; on the other hand, the extent to which such individual needs are unmet contributes to the deprivation of such capability, and the ensuing variability in their deprivation.

Living with a limiting long-term impairment, health problem or illness, involves extra costs and reduced income potential that contributes to the deprivation gap identified in this study. The social protection benefits systems are inadequate to eliminate this gap. When housing costs are a heavy burden, the resultant deprivation is even more. Moreover, similar to housing costs, costs related to support services are not costs that can be dispensed with. This complex picture of limited resources, housing costs, and support costs is critical to any policy considerations targeting poverty and deprivation and their link to disability.

One may argue that the factors identified are not strictly exclusive to disabled persons and their family households. Indeed, such an argument merits due consideration; it makes a strong case that by addressing the factors contributing to the strong link between disability and poverty, one may contribute to other sectors in society. In particular, recognising the contribution of households’ housing costs experiences and possibly wider housing factors to poverty and deprivation, all households at-risk-of, or experiencing, poverty and/or deprivation because of such factors, will benefit. The need for the personalisation of social services is another factor that crosses the boundaries of what benefits disabled persons and their families. The focus on disability and poverty provides a thorough perspective to scrutinise poverty and deprivation in all of society. The limitation to this perspective arises when policies and services are impairment, disability, illness, or age categorised for eligibility and gate-keeping purposes, instead of policies and services that focus on personal needs, irrespective of any impairment or illness or age classification.

9.3 The implications of the findings for social policy

If the story told by the quantitative and qualitative data analysed in this study portrays a realistic picture of the lives disabled persons and their family households experience, then the next question to ask from a social policy perspective is one of a moral judgement: What responsibility does society have once such a reality is recognised? There are seven objections to answering this question which are addressed below:

The first objection is a pragmatic one along the lines that there is nothing that can be done about the reality identified in this study. Clearly, the data indicates otherwise; addressing a household's concerns about its housing costs and the actual housing costs issue will address a significant factor that contributes to material deprivation for all households, and for households supporting disabled persons in particular. Disabled persons are clear about the critical factors necessary to ensure their capability to participate in society and not be deprived of active citizenship. The DPOs' reports identify the differences that accessible, flexible, consistent support services, in addition to adequate social protection benefits and adequate and accessible housing can mean for disabled persons. There are clear policy and services answers to reducing the compounded deprivation and quality of life disability gap identified in this study. Moreover, other known determinants of deprivation were confirmed in this study, for instance low education and low work intensity. For disabled persons, education and employment are a human rights priority; nevertheless, when the impairment reality limits the likelihood that education and employment address the disability-poverty link, alternatives are essential if living with an impairment is not going to translate into a long-term condemnation to second class citizenship.

Second, one may also argue that the situation has always been so; it has never been any different and will never be any different, or what can be referred to as 'the poor will always be with you' argument. The DPOs contradict such an objection. They describe the impact of austerity policies and how their quality of life has been affected. The extensive review of austerity policies in the UK and correspondingly in all of the EU demonstrate the regression experienced by disabled persons as a result of policies that either targeted disability benefits and services or more general social

protection benefits that affect disabled persons and their households disproportionately. ‘The poor will always be with you’ only if society continues to abnegate what it can do to break the poverty-disability link.

Third, while recognising the structural gap that exists to the disadvantage of households supporting persons with impairment, it may be argued that there is no quick fix that can be applied to this situation. The argument may further point to the fact that the situation of such households improves with the general improvement in any country, as the data actually shows. However, the data also shows that the compounded deprivation gap persists even when a country’s general deprivation situation improves, and is present also in countries with low deprivation rates. The compounded deprivation experienced by disabled persons cannot be addressed solely by improving the overall general economic wellbeing of all households. Targeted policies are necessary.

Fourth, given the free-market economy and the way work is valued, the chronic disadvantage disabled households experience is a price that has to be paid. This libertarian objection effectively means that society accepts that disabled persons will always be subjected to a citizenship gap, a second (or third) class citizenship, without the capability for a full and active citizenship. The results of this study are an admonition of the libertarian objection and a critique of the limitations of social investment policies and neoliberal activation measures in addressing the deprivation gap experienced by disabled persons (Collado et al., 2019; Cantillon, 2014). Such an objection is not congruent with the UNCRPD. The UNCRPD, underlines the recognition of the full dignity of disabled persons, and that such dignity does not depend on one’s contribution to the economy, or one’s mental or physical health or impairment. The UNCRPD and the libertarian objection are not compatible.

A fifth objection takes the form of the majority argument: “It is like that everywhere, and so how can it be any different?” There is some truth in the statement that the compounded deprivation experienced by households supporting disabled persons, or what has been referred to as the “disability gap” in disabled persons’ quality-of-life (Mitra and Yap, 2021), is present in all regions and countries studied. However, this gap is neither a homogenous one, nor is it an intrinsic one. The DPOs’ reports

clearly identify regional differences in policies and services that impact disabled persons' quality of life. Households with access to adequate and affordable housing and adequate and affordable personal assistance services are more likely to have the capability to active citizenship. The negative impact of the dismantling of the ILF in the UK, discussed in Chapter 2 (sec. 2.7), is also an argument against the contention that things for disabled persons cannot be any different.

Sixth, one other possible argument is that by focusing on households supporting an adult person living with a limiting long-term condition we are focusing on the wrong issue; the argument goes that it is not the impairment that is the problem but many other factors that contribute to the low income and deprivation. Indeed, when all demographic variables are accounted for, the difference in deprivation between SAL and nonSAL households diminishes significantly. No doubt, the link between poverty and disability is a complex one and this study has not examined the dynamics of poverty and deprivation or their trajectories. What is however clear is that disabled persons and their households, as a group, experience a compounded deprivation and there are clear identifiable factors that contribute to this gap in their quality of life. One factor that crosses the disability boundary is households with a situation of severe ill-health; at the same time the vast majority of such households are households with a disabled person. One may be tempted to explain away the deprivation in SAL households by focusing on factors such as low level of education, low work intensity, housing tenure, and others, that contribute to the deprivation. And such an argument would conclude that the effect of disability on household deprivation is negligible. The inherent problem with this argument is that it would be blaming disabled persons and their households for the factors that contribute to deprivation. When the reality of SAL households cannot be improved by enhancing the level of education or by increasing the work intensity or by addressing some other factor that contributes to deprivation, the deprivation reality turns out to be an actuality particular to SAL households. In essence, the argument that 'it is not the disability that contributes to poverty and deprivation but rather the well-known deprivation determinants' is too reductionist to explain the complex aetiology of the high prevalence of such determinants in households supporting disabled persons. When the determinants of deprivation limit disabled persons' capability to fully participate in society, addressing the deprivation directly and

unequivocally becomes essential. In this respect, Franzini (2022) analysed the need for monetary transfers and the public provision of welfare services to strengthen the capabilities of disabled persons and their households and reduce the quality-of-life gap they experience.

The final argument considered here is a defeatist objection, the argument that such a complex problem is beyond anything a society can ever address through its social policy or legislation. The more common variation of this argument is that society does not have the resources to provide the social protection benefits and services necessary to bridge the negative gap in disabled persons' quality of life, to break the link between poverty and disability, and to eliminate the compounded deprivation experienced by disabled persons and their family households. This argument underlines the implicit reasoning of all austerity policies; it is an objection that considers society's provision to disabled persons as contingent on their costs and the balancing of the public funds budget. This final objection is the most difficult one to argue against because it reflects a value choice; in other words, it reflects the value society gives to life, to every single person, including disabled persons with the most complex support needs. More often than not, however, society shrouds such a value choice under the veil of technical economic arguments (for instance, arguments based on financial crisis and budget deficits), political discourse that warps the truth (for instance arguments targeting benefit fraud and supporting access to employment), or purposely concealing the true reality disabled persons face (for instance, the many countries' UNCRPD compliance reports contradicted or modified by the DPOs' submissions).

If one evaluates the accuracy or otherwise of the 32 official country UNCRPD compliance reports relevant to the years covered by this study from the critique of the DPOs' reports, the conclusion drawn is that most countries present a picture that at best dilutes the deprivation reality identified in this study. Notably, the findings of this study cannot be brushed off as the complaints of disabled activists who are never satisfied with society's provision. It is the official data that tells a consistent and unwavering story of compounded deprivation disabled persons and their family households experience in all EU countries. The disabled persons' perspectives expressed in the DPOs' reports confirm this reality and provide some explanation

on how disabled persons experience this deprivation. It is a reality that cannot be easily dismissed. And if this reality is to be taken seriously, it would require a renewed commitment to disabled persons' capability for full citizenship. The following section suggests some steps essential for such a renewed commitment, stemming from the findings of this study.

9.4 Recommendations

The compounded deprivation documented in this study suggests a number of key recommendations that add up to all the recommendations outlined by the DPOs in their reports which address all the issues identified in this study (adequate and flexible social protection benefits that support employment or compensate for unemployment; adequate, affordable and secure housing; flexible and comprehensive personal assistant services). These recommendations are limited in scope and informed by the key findings of this study.

9.4.1 Policy recommendations

First, UNCRPD is strong in addressing the structural barriers that disabled persons and their families experience in all aspects of society because of impairment; yet, it does not recognise the extra costs of disability as one such discriminatory structural barrier. It does not establish a right to be insured against the extra costs of disability as a way of protecting living with impairment from resulting in some form of relative deprivation. In this respect, the UNCRPD is weak in recognising the link between disability and a broader relative deprivation approach to poverty or the state of affairs in which one is deprived of what one needs to fully participate in society (Townsend, 1993) or when one is deprived of the capability or the agency and freedom to achieve a full and active citizenship (Sen, 1999; 1985). While the full participation of disabled persons in society is the overarching goal of the UNCRPD, this supranational policy document does not fully address the financial insecurity, risk and vulnerability commonly experienced when living with an impairment; nor does it recognise the need to insure against such risk. The UNCRDP recognises that the "full participation by persons with disabilities will result in ... the eradication of poverty" (Preamble, para. m) but in reality, it is only the eradication of poverty in all

its forms, intensities, and prevalence that will ensure the full participation of disabled persons, and ensure that disabled persons have all the resources they need to reach their full potential and participate fully in society. In the global context, the UNCRPD can be considered as far reaching; in the more privileged global North, a stronger policy commitment towards the decoupling of disability and poverty is found in the EDS21-30 and its focus on the standard of living inequality prevalent amongst disabled persons and their families. If persons with a limiting long-term impairment, health problem or illness are to be safeguarded against the cumulative disabling impact of living their lives in a worldview of reduced means and expectations, then disabled persons and their families need to be freed from the worry and reality of all additional resultant financial load. The EDS21-30 points towards this direction for all disabled persons and their families as an essential part of a strategy to secure full and active citizenship for all disabled persons. **In order to address the compounded deprivation reality identified in this study, it is necessary to recognise the eradication of poverty and deprivation related to living with a limiting long-term impairment, health problem or illness as the fundamental goal of all disability related policy.**

Second, as mentioned above, the UNCRPD falls short from recognising the rights of disabled persons and their families to be fully insured from the resultant impairment related costs, be they direct costs, indirect costs or opportunity costs such as the loss in earning potential. The failure of the UNCRPD to adequately address this issue reflects the general state of affairs, even in well-developed welfare states; the reality is that there are practically no examples of states that have guaranteed a comprehensive social insurance to disabled persons. One interesting non-European development is the Australian National Disability Insurance Scheme, developed since 2013 and aimed at changing the welfare-driven approach of disability services to an insurance-based model, providing direct funding to individuals based on their individual needs and goals (Reddihough et al., 2016). The extent to which the Australian National Disability Insurance Scheme will insure disabled persons and their families for all the extra costs of disability remains to be seen. Additionally, such a scheme runs the risk of being overburdened by costs that do not arise from the nature of one's impairment itself but rather from society's disabling barriers in its physical infrastructure, education programmes, health

services, training, employment and other mainstream services (Horsell, 2020). **A far-reaching personalised social insurance for disabled persons and their families for the extra impairment related costs (paralleled and complimented by the elimination of all extra costs that arise due to disabling barriers in mainstream society) is fundamental to addressing the disability gap identified in this study.**

Third, the strong link between the subjective experience of the burden of housing costs and deprivation, and the association between housing affordability and poverty, suggest that a focus on adequate and affordable housing is key to addressing poverty and deprivation for all households. Disabled persons are more likely to be living in households experiencing housing costs as a heavy burden; and this subjective experience is compounded by the multifaceted relationship between adequate accommodation and support needs. Disabled persons are more likely to have constraints on the type and location of accommodation that meets their needs. **A focus on housing is key to addressing a substantial component of the compounded deprivation experienced by disabled persons and their households, and such a focus goes beyond affordability as it needs to link up to the disabled person's circles of support.**

Fourth, there is nothing new in findings that identify personal assistance as a critical factor that disabled persons recognise as fundamental to full and active participation in society. This study goes one step further in making the link between personal assistance services and disabled persons capability to overcome factors that contribute to deprivation; personal assistance contributes to increased employment opportunities, decreased costs for community access, enhanced housing alternatives, and a family household that is less isolated in supporting its disabled adult member. **Like housing, a comprehensive personal assistance policy and provision is key to addressing the compounded deprivation experienced by disabled persons and their family households.**

Fifth, the unexplained variation in household deprivation resulting in this study points towards deprivation as having a strong subjective component; although some general factors contributing to deprivation have been identified, a lot of deprivation remains unexplained. In the DPOs' reports, disabled persons make the strong

argument on the heterogeneity of the impairment experience; there is a broad range of support needs, and their needs also change with time and context. **Addressing the communal experience of compounded deprivation disabled persons experience requires a renewed focus on the personalisation of social protection benefits, the personalisation of social services, and also the personalisation of health services.**

All of these five recommendations are fundamental to addressing the compounded deprivation experienced by disabled persons and for disabled persons and their households to have the capability to full and active citizenship. This said, the recommendations go beyond persons commonly identified as disabled; they are relevant to anyone in society who at any point in life experiences a severe limitation in activities people normally do, especially when such limitations are long-standing. Disabled persons are more likely to experience the cumulative effect of such limitations and therefore more vulnerable to the consequential poverty and deprivation. Yet, addressing these five recommendations will potentially benefit all society.

9.4.2 Research recommendations

If research is seen as an ongoing conversation, five areas for future research are briefly discussed below for the conversation engaged in this study to continue. They are areas to which this study points, and which will enhance the picture on the complex association between disability and poverty.

First, the relationship between housing and poverty is a key area for future research. If the findings of this study are anything to go by, then understanding the relationship between housing costs, the subjective experience of housing affordability, housing security, housing deprivation, and poverty is key to any European strategy that is serious in addressing material poverty and deprivation. In particular, housing issues can be further studied using EU-SILC panel data to examine their role in poverty trajectories and dynamics of poverty for disabled persons and their households.

Second, this study did not focus on children with impairment and the households that support them. The nature of deprivation experienced by such families is not necessarily identical to households that would have experienced the cumulative effect over many years of living with impairment and its impact on the households' quality of life. The EU-SILC 2017 special module included a measure of activity limitation in children (Eurostat, 2017b). Preliminary analysis of this data shows that households supporting children with impairment were more likely to experience higher levels of material deprivation even though they did not experience a higher prevalence of risk-of-poverty (Galea-Curmi, 2023). If the activity limitation measures focused on children used in the 2017 special module become part of the regular EU-SILC survey, the analysis carried out in this study could be extended to households supporting children with impairment.

Third, the importance given by DPOs to both housing and support services highlight the need for a focus on how these two areas interact and affect each other. How can support services enhance the housing options for disabled persons and what housing options facilitate the support needs of disabled persons?

Fourth, an area that is entirely overlooked in the EU-SILC surveys is the deprivation of disabled person who are institutionalised. This issue was a major area of concern highlighted by DPOs, especially because there is an overall sense that not only the process of deinstitutionalisation has post crisis austerity slowed down but, more worrying, a process of re-institutionalisation, or the filling up of places vacated following deinstitutionalisation, is taking place in some countries (Beadle-Brown et al., 2021). Persons with intellectual impairment and mental health needs are the worse affected by this reality (Šiška and Beadle-Brown, 2021; 2020). Various other factors may be contributing to this development including the increasing prevalence of dementia globally and changes in the social care market. No picture of poverty and deprivation in Europe is complete if it does not factor in the reality of the high number of disabled persons in institutionalised care, and a better understanding of the push and pull forces involved.

Fifth, the DPOs' reports have also highlighted the further intensified poverty and deprivation of disabled persons that experience the brunt of intersectionality because of their sex, race, age, multiple needs, psychological impairments, legal

status and citizenship status. Further research in this area, not covered in the quantitative analysis of this study, will add knowledge to the sectors of disabled persons that are likely to be experiencing the highest levels of poverty and deprivation. Moreover, the prevalence of deprivation in households with severe ill-health problem points towards another aspect of deprivation that merits further examination.

9.5 Contribution of this study

Within the limitations outlined earlier on in this chapter, this study provides a marked focus on the link between poverty and disability. This focus is not new and has been the concern of the disability rights movement for decades. What is distinct about this study is that it has revisited the area in a European comparative perspective, covering seven years, using the latest available official data and data from DPOs. In conclusively showing that the link between disability and poverty and deprivation is still a strong one, this study provides a sound empirical basis for any social policy interested in addressing the disability-poverty link. Three areas of contribution are identified:

9.5.1 A substantive contribution

The sound empirical base of this study and the convergence of the quantitative and qualitative analysis provides social policy with a clear picture on the gap in citizenship that disabled persons experience. This gap results from gaps in social protection across all of Europe. The knowledge developed in this study can contribute to a renewed understanding of what is required in the different European countries and at European Union level to support the full and active participation of disabled persons, what has been referred to in this study as active citizenship. The findings of this study point towards the disability gap in quality of life and the compounded deprivation experienced by disabled persons and their family households as a main barrier towards active citizenship capability.

9.5.2 A methodological contribution

This study departed from the practice of defining material deprivation or severe material deprivation as a dichotomous variable based on the presence or absence of a number of deprivation measures. The development and use of the MDI provided a methodological tool that measures degrees of deprivation. Although the MDI is limited in scope as it used only existing measures within the EU-SILC, using a material deprivation index can enhance research on material deprivation by providing a research instrument that is sensitive to changes in deprivation. The MDI also enabled the comparative analysis between all participating countries and over the seven years for which data on the measures comprising the MDI was available.

9.5.3 A theoretical contribution

The strong link between households who identify their housing costs as a heavy burden and deprivation identified in this study provides a sound empirical base for the further development of a theoretical foundation that does not look at poverty and housing as two separate fields, a concern being addressed by Hick, Pomati and Stephen (2022). The findings of this study point towards a hypothesis that where housing costs are experienced as a heavy burden, it is difficult to address poverty and deprivation without a specific focus on the housing issues even when the objective housing costs do not surpass a recognised affordability benchmark. Housing affordability from a subjective household experience possibly reflects a more nuance and broad experience than a housing costs vs household income balance sheet exercise. It supports the notion of a 'housing first' approach to addressing poverty and to supporting disabled persons in the community (O'Shaughnessy et al., 2021; Šiška and Julie Beadle-Brown, 2020).

9.6 Epilogue

One last musing on the journey of this research project.

In reflecting on what this study set out to achieve, the minimal realisations compared to its great aspirations, and what has been learnt in the process, the

memorable words by poet T. S. Eliot, written in the second of the Four Quartets, say it all:

We shall not cease from exploration,
and the end of all our exploring
will be to arrive where we started
and know the place for the first time.

Setting off with a clear idea that poverty and deprivation were an intricate dimension of living with impairment, the study revealed the extent of what has been referred to as the 'disability gap', beyond any doubt and above all provisions. It is a known reality but also a reality the extent of which is startling, if not disconcerting.

This gap is part of what Halvorsen (2020) refers to as a gap in social citizenship, a gap that does not allow disabled persons and their households to partake fully in their rights and responsibilities of active citizenship. It is a gap that underlines the importance of what Devlin and Pothier (2006) referred to as critical disability theory, as epitomised in the overarching gap that exists between households with or without a limiting long-term impairment, health condition or illness. Some of this critique can be developed through the application of the social model of disability to the concept of work as we all know it. In his reflections on 30 years of the social model of disability, Oliver (2013) argued that the social model had "barely made a dent in the employment system because ... the solutions offered have usually been based on an individual model of disability" (p. 1025). We need to apply the social model to the structural barriers related to work and employment and how work and employment is organised. A critical disability theory of work is necessary to unearth entrenched concepts and values in the way work and employment are organised and remunerated, and the way social benefits are structured to compensate for situations of no work. Embedded in all work-related organisation and policies is an inequality value judgement constituting a clear statement that the life of someone living with impairment has less value if it is unproductive from a labour market perspective. In practice, this embedded value statement translates itself all across the income spectrum. It significantly affects those who are at the bottom end of the spectrum, yet the gap is seen throughout. The very policies, laws and benefits designed to support employment or compensate for unemployment perpetuate this

system. Work is remunerated on the basis of one's productivity, even though a severely impaired person cannot ever compete at that level. Anyone who cannot work within this structure is, in the best-case scenario, given benefits. Yet, benefits are never at a level that compensate for employment income. And benefits are seen as an unproductive drain on the economy. At the same time, society is structured in a way that the people who can benefit fully from all that society has to offer are the people who earn a good salary. The disability gap is engrained in the system. In introducing their critical disability theory project, Devlin and Potheir (2006, p. 20) outlined its key attributes as follows:

critical disability theory emphasizes the inevitability of difference, it demands the material reorganization of our basic social institutions, and it challenges the assumptions of sameness and assimilation in a profound way. Furthermore, critical disability theory interrogates not only conceptions of productivity and efficiency – a strategy destabilizing enough on its own – but also taken-for-granted assumptions of adequacy and competency ... critical disability theory demands a reconceptualization of the nature of, and the lived relationships among, the citizen, the self, and the community, a reconceptualization that transforms the basic assumptions of contemporary philosophy, politics, policy, and law.

We need to envisage a transfigured model, so that, using T. S. Eliot's verses, what we see when we arrive at what we already know, we are able to understand from a fresh perspective, as if we are comprehending it for the first time.

We need to look at disability and disabled persons from the perspective of the major contribution they give to the economy. They create a market for many services they need and use, such as a market for personal assistant services and other human service structures that are necessary to support disabled persons. We need to recognise the productive contribution disabled persons make to society irrespective of employment related productivity. It is only in this way that society will stop looking at disabled persons who cannot earn a full employment salary that remunerates productivity as a burden, and stop considering benefits as something that society just has to tolerate.

Even though disability discrimination is declared as going against basic civil and human rights and many constitutions and equal opportunity legislation and policies are enacted to safeguard such rights, the reality experienced by disabled persons is structurally different. How can a critical disability theory contribute to the above? We need to recognise how the organisation of work, the social benefits structure, the social services structure, serve the interests of the non-disabled majority and in so doing create a structural barrier that many disabled persons and their households experience as a deprivation gap. Consistent with intersectionality, living with an impairment does not imply a single homogenous group. Anyone living with impairment can also be struggling with discrimination relating to race, gender, and other dimensions of life that further contribute to the disability gap identified in this study.

Maybe we need to think of the limitations and vulnerability associated with disability as part of what it means to be human. Gorman (2019, pp. 222-228) makes the interesting argument that if one conceptualises vulnerability as part of the human condition, what she refers to as “ontological vulnerability”, then this realisation generates political and ethical obligations. This foundational principal as the basis for public bioethics is developed in detail by Carter Snead (2020, p. 3) arguing that “we experience our world, ourselves, and one another *as living (and dying) bodies*” and as living bodies “we are vulnerable, dependent, and subject to natural limits, including injury, illness, senescence, and death” (2020, p. 269). In this perspective, human vulnerability becomes a moral argument for a society that responds through “robust and expansive networks of uncalculated giving and graceful receiving” (2020, p. 269) corresponding to the reality of what it means to be human. In contrast to this understanding of vulnerability, financial vulnerability and deprivation experienced by disabled persons and their families further embodies the limitations and vulnerability resulting from the impairment: in other words, financial vulnerability and deprivation further disable persons living with a limiting life-long impairment, health condition or illness from a full and active citizenship. The challenge for social policy is to restructure itself, the services it develops, and the broader society, to enable each individual person to prevail over any impairment limitation and vulnerability, recognising that any limitation and vulnerability is a personal lived experience. The responsibility for this challenge

rests with all those entrusted with the power and authority to guarantee the state's covenantal support necessary to ensure every person's capability to full citizenship.

Most of the deprivation issues discussed in this study do not pertain solely to disabled persons; they are wrongs that reflect disablism but that also affect or mirror the reality of other groups in society. One may be drawn to argue that the poverty-disability link actually reflects some further intricate relationship that poverty and deprivation have with social factors other than disability. Then again, such a realisation is a strong reminder that addressing the deprivation identified above benefits more than just a small disabled minority of society. Disablism does not just hurt persons living with a limiting life-long impairment, health problem or illness; it affects all persons who either do not make it up, or who fall down, the 'meritocratic' success ladder. The deprivation gap evident in the data analysed above reveals the substantially higher odds of disabled persons and their family households all across Europe to be denied full and active citizenship.

Undeniably, disabled persons are uniquely qualified to explain their distinctive stories, but also to speak on the common experiences of other members of their groups and on the forms and effects of the disablism they live through. The modest effort reflected in this thesis is presented in full awareness that the unmediated voice of disabled persons is something that in this study is found wanting; but while recognising such limitation, this study succeeds in extrapolating from the official statistics of 32 European countries and 66 DPOs' reports, a clear, contemporary, and, to a certain extent, corresponding story of compounded deprivation commonly experienced by households supporting disabled persons, and from which, without a targeted policy approach, there seems to be 'no exit'.

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Appendix A. UNCRPD Article 28, Article 19 and Article 27

A.1 Article 28 – Adequate standard of living and social protection

1. States Parties recognize the right of persons with disabilities to an adequate standard of living for themselves and their families, including adequate food, clothing and housing, and to the continuous improvement of living conditions, and shall take appropriate steps to safeguard and promote the realization of this right without discrimination on the basis of disability.

2. States Parties recognize the right of persons with disabilities to social protection and to the enjoyment of that right without discrimination on the basis of disability, and shall take appropriate steps to safeguard and promote the realization of this right, including measures:

(a) To ensure equal access by persons with disabilities to clean water services, and to ensure access to appropriate and affordable services, devices and other assistance for disability-related needs;

(b) To ensure access by persons with disabilities, in particular women and girls with disabilities and older persons with disabilities, to social protection programmes and poverty reduction programmes;

(c) To ensure access by persons with disabilities and their families living in situations of poverty to assistance from the State with disability-related expenses, including adequate training, counselling, financial assistance and respite care;

(d) To ensure access by persons with disabilities to public housing programmes;

(e) To ensure equal access by persons with disabilities to retirement benefits and programmes.

A.2 Article 19 – Living independently and being included in the community

States Parties to the present Convention recognize the equal right of all persons with disabilities to live in the community, with choices equal to others, and shall take effective and appropriate measures to facilitate full enjoyment by persons with disabilities of this right and their full inclusion and participation in the community, including by ensuring that:

(a) Persons with disabilities have the opportunity to choose their place of residence and where and with whom they live on an equal basis with others and are not obliged to live in a particular living arrangement;

(b) Persons with disabilities have access to a range of in-home, residential and other community support services, including personal assistance necessary to support living and inclusion in the community, and to prevent isolation or segregation from the community;

(c) Community services and facilities for the general population are available on an equal basis to persons with disabilities and are responsive to their needs.

A.3 Article 27 – Work and employment

1. States Parties recognize the right of persons with disabilities to work, on an equal basis with others; this includes the right to the opportunity to gain a living by work freely chosen or accepted in a labour market and work environment that is open, inclusive and accessible to persons with disabilities. States Parties shall safeguard and promote the realization of the right to work, including for those who acquire a disability during the course of employment, by taking appropriate steps, including through legislation, to, inter alia:

(a) Prohibit discrimination on the basis of disability with regard to all matters concerning all forms of employment, including conditions of recruitment, hiring and employment, continuance of employment, career advancement and safe and healthy working conditions;

(b) Protect the rights of persons with disabilities, on an equal basis with others, to just and favourable conditions of work, including equal opportunities and equal remuneration for work of equal value, safe and healthy working conditions, including protection from harassment, and the redress of grievances;

(c) Ensure that persons with disabilities are able to exercise their labour and trade union rights on an equal basis with others;

(d) Enable persons with disabilities to have effective access to general technical and vocational guidance programmes, placement services and vocational and continuing training;

(e) Promote employment opportunities and career advancement for persons with disabilities in the labour market, as well as assistance in finding, obtaining, maintaining and returning to employment;

(f) Promote opportunities for self-employment, entrepreneurship, the development of cooperatives and starting one's own business;

(g) Employ persons with disabilities in the public sector;

(h) Promote the employment of persons with disabilities in the private sector through appropriate policies and measures, which may include affirmative action programmes, incentives and other measures;

(i) Ensure that reasonable accommodation is provided to persons with disabilities in the workplace;

(j) Promote the acquisition by persons with disabilities of work experience in the open labour market;

(k) Promote vocational and professional rehabilitation, job retention and return-to-work programmes for persons with disabilities.

2. States Parties shall ensure that persons with disabilities are not held in slavery or in servitude, and are protected, on an equal basis with others, from forced or compulsory labour.

Appendix B. Methodological Items

B.1 The Modified Deprivation Index (MDI)

The following table gives the details of all the variables included in the Modified Deprivation Index. Variables highlighted in grey were combined into one measure as indicated in the table. Variables marked as SMD are the main material deprivation indicators in the EU-SILC; variables marked as SIMD are the secondary material deprivation indicators in the EU-SILC; and variables marked as HMD are the housing material deprivation indicators in the EU-SILC.

Table B.1: Details of EU-SILC variables included in the Modified Deprivation Index (MDI)

Aspect of Household Material Deprivation	EU-SILC variable & Categories	Recoded Variable	Categories of New Variable	Weight (2/4/6)
<i>Financial vulnerability and economic stress</i>				
Household unable to pay on time (as scheduled) the rent and/or the mortgage payment for the main dwelling. (SMD)	HS011 1 = yes, once 2 = yes, twice or more 3 = no	HS011_R 2 = 1 else = 0	1 = yes, twice or more 0 = no	
Household unable to pay on time (as scheduled) utility bills (heating, electricity, gas, water, etc.) for the main dwelling. (SMD)	HS021 1 = yes, once 2 = yes, twice or more 3 = no	HS021_R 2 = 1 else = 0	1 = yes, twice or more 0 = no	
Household unable to pay on time (as scheduled) repayments for hire purchase or other non-housing loans. (SMD)	HS031 1 = yes, once 2 = yes, twice or more 3 = no	HS031_R 2 = 1 else = 0	1 = yes, twice or more 0 = no	
Household with arrears in rent, mortgage, utility bills, or other hire purchase or non-housing loan repayments (this measure combines the three above variables)		HS011_HS021_+ HS031_R + HS011_R + HS021_R + HS031_R (further recoded 0 = 0 else = 1)	1 = yes, twice or more 0 = no, or not more than once	6
Household affords an unexpected required expense and pays through its own resources. (SMD)	HS060 1 = yes 2 = no	HS060_R 1 = 0 2 = 1	1 = no 0 = yes	6
Household able to make both ends meet.	HS120 1 = with great difficulty 2 = with difficulty 3 = with some difficulty 4 = fairly easily 5 = easily 6 = very easily	HS120_R 1, 2 = 1 else = 0	1 = no, with difficulty or great difficulty 0 = yes	6

Aspect of Household Material Deprivation	EU-SILC variable & Categories	Recoded variable	Categories	Weight (2/4/6)
<i>Basic needs, mobility & freedom/independence</i>				
Household adult members afford to replace worn-out clothes by some new (not second-hand) ones. (SIMD)	PD020 1 = yes 2 = no, cannot afford 3 = no, other reason	PD020_R 2 = 1 else = 0	1 = no, cannot afford it 0 = yes	4
Household adult members afford two pairs of properly fitting shoes (including a pair of all-weather shoes) (SIMD)	PD030 1 = yes 2 = no, cannot afford 3 = no, other reason	PD030_R 2 = 1 else = 0	1 = no, cannot afford it 0 = yes	4
Household adult members afford to spend a small amount of money each week on themselves (SIMD)	PD070 1 = yes 2 = no, cannot afford it 3 = no, other reason	PD070_R 2 = 1 else = 0	1 = no, cannot afford it 0 = yes	6
Household has a car/van for private use. (SMD)	HS110 1 = yes 2 = no, cannot afford 3 = no, other reason	HS110_R 2 = 1 else = 0	1 = no, household does not afford 0 = yes	4
Household has a computer.	HS090 1 = yes 2 = no, cannot afford 3 = no, other reason	HS090_R 2 = 1 else = 0	1 = no, household does not afford 0 = yes	4
Household adult members afford an internet connection for personal use at home. (SIMD)	PD080 1 = yes 2 = no, cannot afford it 3 = no, other reason	PD080_R 2 = 1 else = 0	1 = no, cannot afford it 0 = yes	4
<i>Basic amenities affordability</i>				
Household has a telephone line (fixed or mobile). (SMD)	HS070 1 = yes 2 = no, cannot afford 3 = no, other reason	HS070_R 2 = 1 else = 0	1 = no, household does not afford 0 = yes	4
Household has a colour TV. (SMD)	HS080 1 = yes 2 = no, cannot afford 3 = no, other reason	HS080_R 2 = 1 else = 0	1 = no, household does not afford 0 = yes	2
Household has a washing machine. (SMD)	HS100 1 = yes 2 = no, cannot afford 3 = no, other reason	HS100_R 2 = 1 else = 0	1 = no, household does not afford 0 = yes	2

Aspect of Household Material Deprivation	EU-SILC variable & Categories	Recoded variable	Categories	Weight (2/4/6)
Health & Nutrition				
Household affords a meal with meat, chicken or fish (or equivalent vegetarian) every second day. (SMD)	HS050 1 = yes 2 = no	HS050_R 1 = 0 2 = 1	1 = no, household does not afford 0 = yes	6
Household with adult members having unmet need for medical examination or treatment.	PH050 1 = could not afford to (too expensive) 2 = waiting list 3 = could not take time because of work, care for children or for others 4 = too far to travel/no means of transportation 5 = fear of doctor/hospitals/examination/ treatment 6 = wanted to wait and see if problem got better on its own 7 = didn't know any good doctor or specialist 8 = other reasons	PH050_R 1 = 1 else = 0	1 = yes, cannot afford it (too expensive) 0 = no	
Household with adult members having unmet need for dental examination or treatment.	PH070 1 = could not afford to (too expensive) 2 = waiting list 3 = could not take time because of work, care for children or for others 4 = too far to travel/no means of transportation 5 = fear of doctor(dentist)/hospitals/examination/ treatment 6 = wanted to wait and see if problem got better on its own 7 = didn't know any good doctor or specialist 8 = other reasons	PH070_R 1 = 1 else = 0	1 = yes, cannot afford it (too expensive) 0 = no	
Household with adult member having unmet needs for health or dental examination or treatment (this measure combines the two above variables).		PH050_PH070_R = PH050_R + PH070_R (further recoded 0 = 0 else = 1)	1 = yes, cannot afford it (too expensive) 0 = no	6

Aspect of Household Material Deprivation	EU-SILC variable & Categories	Recoded variable	Categories	Weight (2/4/6)
<i>Friends, leisure & social participation affordability</i>				
Household affords to go for a week's annual holiday, away from home, including stays in a second dwelling or with friends/relatives. (SMD)	HS040 1 = yes 2 = no	HS040_R 1 = 0 2 = 1	1 = no, household does not afford 0 = yes	4
Household adult members afford to get together with friends/family (relatives) for a drink/meal at least once a month. (SIMD)	PD050 1 = yes 2 = no, cannot afford it 3 = no, other reason	PD050_R 2 = 1 else = 0	1 = no, cannot afford it 0 = yes	4
Household adult members afford to regularly participate in a leisure activity. (SIMD)	PD060 1 = yes 2 = no, cannot afford it 3 = no, other reason	PD060_R 2 = 1 else = 0	1 = no, cannot afford it 0 = yes	4
<i>Problems with Dwelling</i>				
Household dwelling is too dark with not enough daylight coming through the windows. (HMD)	HS160 1 = yes 2 = no	HS160_R 1 = 1 2 = 0	1 = yes 0 = no	2
Household dwelling has too much noise from neighbours or from outside (traffic, business, factory, etc.). (HMD)	HS170 1 = yes 2 = no	HS170_R 1 = 1 2 = 0	1 = yes 0 = no	2
Household dwelling has problems related to pollution, grime or other environmental problems in the local area such as smoke, dust, unpleasant smells or polluted water. (HMD)	HS180 1 = yes 2 = no	HS180_R 1 = 1 2 = 0	1 = yes 0 = no	2
Household dwelling experiences problems related to crime, violence and vandalism. (HMD)	HS190 1 = yes 2 = no	HS190_R 1 = 1 2 = 0	1 = yes 0 = no	2
Household dwelling has a leaking roof, or damp walls, floors, or foundation, or rot in window frames or floor. (HMD)	HH040 1 = yes 2 = no	HH040_R 1 = 1 2 = 0	1 = yes 0 = no	4

Aspect of Household Material Deprivation	EU-SILC variable & Categories	Recorded variable	Categories	Weight (2/4/6)
Standard of Living				
Household affords to keep its home adequately warm. (SMD)	HH050 1 = yes 2 = no	HH050_R 2 = 1 1 = 0	1 = no 0 = yes	4
Household dwelling has a shower unit or bathtub (for sole use of household). (HMD)	HH081 1 = yes, for sole use of household 2 = yes, shared 3 = no	HH081_R 2, 3 = 1 1 = 0	1 = no 0 = yes	
Household dwelling has indoor flushing toilet (for sole use of household)5.	HH091 1 = yes, for sole use of household 2 = yes, shared 3 = no	HH091_R 2, 3 = 1 1 = 0	1 = no 0 = yes	
Household with availability of both shower/bathtub and toilet for sole use of household (this measure combines the two above variables).		HH081_HH091_R = HH081_R + HH091_R (further recoded 0 = 0 else = 1)	1 = no 0 = yes	4
Household affords to replace worn-out furniture.	HD080 1 = yes 2 = no, household cannot afford it 3 = no, other reason	HD080_R 2 = 1 else = 0	1 = no 0 = yes	4

B.2 Eurostat confidentiality declaration

Research Project Proposal RPP 388/2019-EU-SILC INDIVIDUAL CONFIDENTIALITY DECLARATION (to be signed by all persons named in the research proposal)

Regulation (EC) No 223/2009 of the European Parliament and of the Council of 11 March 2009 on European Statistics provides the basic legal framework for the development, production and dissemination of European statistics. That Regulation foresees an additional possibility to give access to confidential data to researchers in the interest of scientific progress in Europe, subject to the strict obligation to respect the statistical confidentiality of the data.

I will be bound by all the terms and conditions of the confidentiality undertaking signed by the duly designated representative of my research entity and will use the dataset indicated in the research proposal in accordance with the terms of use attached to the confidentiality undertaking.

I will:


- (a) use the dataset only for the purposes specified in the research proposal;
- (b) safeguard the dataset and any usernames and passwords associated with it;
- (c) ensure that any results of analyses will not be disclosive or potentially disclosive in conjunction with other publicly available information;
- (d) acknowledge the dataset and its source in any research report or publication and also state that the results and conclusions are mine and not those of Eurostat, the European Commission or any of the national statistical authorities whose data have been used;
- (e) provide Eurostat with references to publications and other research reports based on this dataset;
- (f) preserve the confidentiality of information pertaining to identifiable individuals, households and/or organisations that are recorded in the dataset;
- (g) submit the final complete output of my work for the confidentiality check to the competent Eurostat staff (in case of access to secure use files);
- (h) destroy the dataset and any data or variables derived from it at the end of the research period specified in the research proposal and sign a declaration to the effect that it has been ensured that all data have been destroyed;
- (i) abide by any other conditions notified to me by Eurostat (e.g. guidelines for publication);
- (j) inform Eurostat immediately about any breach of the confidentiality rules laid down in the confidentiality undertaking or in the terms of use of confidential data for scientific purposes.

I will not:

- (a) use the data (scientific use files) outside the premises of my research entity ;
- (b) allow non-authorized users to access the dataset (authorized users are named in the research proposal);
- (c) use the data for research purposes before it is checked for confidentiality by Eurostat (in case of access to secure use files)
- (d) remove the data or any part of it (in case of access to secure use files);
- (e) attempt to link the data to other (including public) datasets, whether or not provided by Eurostat, if not expressly agreed;
- (f) attempt to identify any individual record (individual, household, business, etc.) in the dataset, or claim to have done so;
- (g) release or publish any information or results which identify any individual record or may lead to the identification of any individual record.

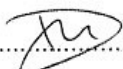
I certify that I have read all of the above clauses, that I understand that I am accountable for correct and responsible use of the data and data access system, and that I understand that if I fail to comply with these clauses, my access to the dataset will be withdrawn and I will be liable to any other sanctions that may be determined by my research entity or are specified in the applicable civil or penal law.

Name: Dr. Zoë Irving (Principal Researcher).....

Signature: .....

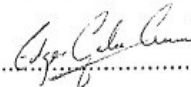
Date: 17.12.19.....

Name: Dr. Dan Horsfall (Individual Researcher).....

Signature: .....

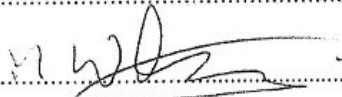
Date: 17/12/2019.....

Name: Edgar Galea-Curmi (Individual Researcher).....

Signature: .....

Date: 16/12/2019.....

Name: Mr. Mark Wilson (Data Manager).....

Signature: .....

Date: 19/12/19.....

B.3 Eurostat approval

Ref. Ares(2020)1385697 - 05/03/2020



EUROPEAN COMMISSION
EUROSTAT

Directorate B: Methodology; Dissemination; Cooperation in the European Statistical System
Unit B-1: Methodology; Innovation in official statistics

University of York

Dr. Zoë Irving
Heslington
YO10 5DD York
United Kingdom

**Subject: Research project proposal for microdata access –
RPP 388/2019-EU-SILC**

Dear Dr Irving,

We would like to inform you that access to the microdata sets:

- European Union Statistics on Income and Living Conditions (EU-SILC)

for research proposal RPP 388/2019-EU-SILC has been granted for the period 20/01/2020-31/12/2020, as indicated in the research proposal.

The data are available on the secure platform S-CIRCABC. In order to download the data please follow the instructions in the attachment 5.3 S-CIRCABC instructions.pdf.

You must use the microdata in accordance with the terms of use and respect guidelines for publication (both documents attached). Disrespect of these conditions will result in application of the relevant sanctions referred to in the terms of use.

Yours sincerely,

ESTAT Microdata access team

Contact: ESTAT-Microdata-access@ec.europa.eu

Commission européenne, 2920 Luxembourg, LUXEMBOURG - Tel. +352 4301-1

<http://epp.eurostat.ec.europa.eu>

 Electronically signed on 05/03/2020 16:03 (UTC+01) in accordance with article 4.2 (Validity of electronic documents) of Commission Decision 2004/563

B.4 University of Malta approval



Edgar Galea Curmi <edgar.galea-curmi@um.edu.mt>

Research Ethics Proposal - Approved by FREC, no UREC decision needed

SWB FREC <research-ethics.fsw@um.edu.mt>
To: Edgar Galea Curmi <edgar.galea-curmi@um.edu.mt>

18 December 2020 at 14:00

Unique Form ID: 7340 07.12.2020

Dear Edgar Galea Curmi,

Your ethics proposal with regards to your research titled *The impact of long-term severe activity limitation on material deprivation in EU households* has been **approved**.

Attached find a **copy of the feedback form** containing FREC's feedback and approval.

Faculty Research Ethics Committees are authorised to review and approve research ethics applications on behalf of the University of Malta, except in the case of sensitive personal data. In this regard, your ethics proposal **does not need to be sent to UREC**. Hence, **you may now start your research**.

Kindly note that you have to send us your supervisor's endorsement for our records.

Regards,



Faculty Research Ethics Committee

Faculty for Social Wellbeing
Room 115, Humanities B
+356 2340 3192, +356 2340 2237
um.edu.mt/socialwellbeing/students/researchethics



GALEA CURMI Edgar (7340 07.12.2020) (SWP) [1].pdf
127K

Appendix C. Participating SAL and nonSAL Households by Country, 2013 to 2019

C.1 EU-SILC 2013

Table C.1: Unweighted samples for 2013, listed by country

	SAL	nonSAL	total	% SAL	% nonSAL	% total
Austria	938	5,039	5,977	15.7	84.3	100.0
Belgium	835	5,324	6,159	13.6	86.4	100.0
Bulgaria	467	4,504	4,971	9.4	90.6	100.0
Croatia	1,019	4,343	5,362	19.0	81.0	100.0
Cyprus	826	3,822	4,648	17.8	82.2	100.0
Czech Republic	760	7,515	8,275	9.2	90.8	100.0
Denmark	325	5,094	5,419	6.0	94.0	100.0
Estonia	1,052	4,723	5,775	18.2	81.8	100.0
Finland	792	10,578	11,370	7.0	93.0	100.0
France	1,702	9,429	11,131	15.3	84.7	100.0
Germany	2,037	10,666	12,703	16.0	84.0	100.0
Greece	1,594	5,845	7,439	21.4	78.6	100.0
Hungary	1,562	8,661	10,223	15.3	84.7	100.0
Iceland	299	2,721	3,020	9.9	90.1	100.0
Ireland	549	4,373	4,922	11.2	88.8	100.0
Italy	2,893	15,594	18,487	15.6	84.4	100.0
Latvia	1,280	5,029	6,309	20.3	79.7	100.0
Lithuania	891	4,251	5,142	17.3	82.7	100.0
Luxembourg	544	3,226	3,770	14.4	85.6	100.0
Malta	294	4,087	4,381	6.7	93.3	100.0
Netherlands	517	9,614	10,131	5.1	94.9	100.0
Norway	294	5,737	6,031	4.9	95.1	100.0
Poland	2,134	10,765	12,899	16.5	83.5	100.0
Portugal	1,205	5,286	6,491	18.6	81.4	100.0
Romania	1,356	6,204	7,560	17.9	82.1	100.0
Serbia	603	5,898	6,501	9.3	90.7	100.0
Slovakia	1,115	4,287	5,402	20.6	79.4	100.0
Slovenia	943	8,058	9,001	10.5	89.5	100.0
Spain	1,390	10,749	12,139	11.5	88.5	100.0
Sweden	451	5,750	6,201	7.3	92.7	100.0
Switzerland	730	6,611	7,341	9.9	90.1	100.0
United Kingdom	1,853	8,319	10,172	18.2	81.8	100.0
Totals	33,250	212,102	245,352	13.6	86.4	100.0

Table C.2: Unweighted samples for 2013, listed by % of SAL Households

	SAL	nonSAL	total	% SAL	% nonSAL	% total
Norway	294	5,737	6,031	4.9	95.1	100.0
Netherlands	517	9,614	10,131	5.1	94.9	100.0
Denmark	325	5,094	5,419	6.0	94.0	100.0
Malta	294	4,087	4,381	6.7	93.3	100.0
Finland	792	10,578	11,370	7.0	93.0	100.0
Sweden	451	5,750	6,201	7.3	92.7	100.0
Czech Republic	760	7,515	8,275	9.2	90.8	100.0
Serbia	603	5,898	6,501	9.3	90.7	100.0
Bulgaria	467	4,504	4,971	9.4	90.6	100.0
Iceland	299	2,721	3,020	9.9	90.1	100.0
Switzerland	730	6,611	7,341	9.9	90.1	100.0
Slovenia	943	8,058	9,001	10.5	89.5	100.0
Ireland	549	4,373	4,922	11.2	88.8	100.0
Spain	1,390	10,749	12,139	11.5	88.5	100.0
Belgium	835	5,324	6,159	13.6	86.4	100.0
Luxembourg	544	3,226	3,770	14.4	85.6	100.0
France	1,702	9,429	11,131	15.3	84.7	100.0
Hungary	1,562	8,661	10,223	15.3	84.7	100.0
Italy	2,893	15,594	18,487	15.6	84.4	100.0
Austria	938	5,039	5,977	15.7	84.3	100.0
Germany	2,037	10,666	12,703	16.0	84.0	100.0
Poland	2,134	10,765	12,899	16.5	83.5	100.0
Lithuania	891	4,251	5,142	17.3	82.7	100.0
Cyprus	826	3,822	4,648	17.8	82.2	100.0
Romania	1,356	6,204	7,560	17.9	82.1	100.0
Estonia	1,052	4,723	5,775	18.2	81.8	100.0
United Kingdom	1,853	8,319	10,172	18.2	81.8	100.0
Portugal	1,205	5,286	6,491	18.6	81.4	100.0
Croatia	1,019	4,343	5,362	19.0	81.0	100.0
Latvia	1,280	5,029	6,309	20.3	79.7	100.0
Slovakia	1,115	4,287	5,402	20.6	79.4	100.0
Greece	1,594	5,845	7,439	21.4	78.6	100.0
Totals	33,250	212,102	245,352	13.6	86.4	100.0

Table C.3: Weighted samples for 2013, listed by country

	SAL	nonSAL	total	% SAL	% nonSAL	% total
Austria	612,681	3,088,621	3,701,302	16.6	83.4	100.0
Belgium	663,621	4,127,705	4,791,327*	13.9	86.1	100.0
Bulgaria	218,304	2,447,960	2,666,265*	8.2	91.8	100.0
Croatia	244,253	1,274,785	1,519,038	16.1	83.9	100.0
Cyprus	49,145	261,655	310,800	15.8	84.2	100.0
Czech Republic	369,282	3,913,217	4,282,499	8.6	91.4	100.0
Denmark	201,034	2,607,362	2,808,396	7.2	92.8	100.0
Estonia	90,980	499,289	590,269	15.4	84.6	100.0
Finland	239,057	2,355,942	2,594,999	9.2	90.8	100.0
France	4,100,523	23,760,507	27,861,031*	14.7	85.3	100.0
Germany	6,003,170	33,404,850	39,408,020	15.2	84.8	100.0
Greece	819,740	3,426,923	4,246,663	19.3	80.7	100.0
Hungary	576,749	3,507,732	4,084,481	14.1	85.9	100.0
Iceland	13,693	110,293	123,986	11.0	89.0	100.0
Ireland	182,896	1,526,816	1,709,712	10.7	89.3	100.0
Italy	4,154,537	21,400,601	25,555,138	16.3	83.7	100.0
Latvia	147,077	684,009	831,086	17.7	82.3	100.0
Lithuania	180,916	1,123,423	1,304,338*	13.9	86.1	100.0
Luxembourg	27,990	177,228	205,218	13.6	86.4	100.0
Malta	10,074	146,925	156,999	6.4	93.6	100.0
Netherlands	495,828	7,073,543	7,569,371	6.6	93.4	100.0
Norway	157,036	2,278,917	2,435,953	6.4	93.6	100.0
Poland	2,077,363	11,274,627	13,351,990	15.6	84.4	100.0
Portugal	693,330	3,324,651	4,017,981	17.3	82.7	100.0
Romania	1,227,177	6,224,481	7,451,658	16.5	83.5	100.0
Serbia	219,916	2,267,969	2,487,885	8.8	91.2	100.0
Slovakia	373,158	1,478,901	1,852,059	20.1	79.9	100.0
Slovenia	87,148	716,692	803,840	10.8	89.2	100.0
Spain	1,869,361	16,320,933	18,190,294	10.3	89.7	100.0
Sweden	396,325	4,282,669	4,678,993*	8.5	91.5	100.0
Switzerland	335,261	3,037,905	3,373,166	9.9	90.1	100.0
United Kingdom	4,656,384	22,338,910	26,995,294	17.2	82.8	100.0
Totals	31,494,011*	190,466,039*	221,960,050*	14.2	85.8	100.0

*Totals may occasionally show minor discrepancies because fractional weights are used.

Table C.4: Weighted samples for 2013, listed by % of SAL Households

	SAL	nonSAL	total	% SAL	% nonSAL	% total
Malta	10,074	146,925	156,999	6.4	93.6	100.0
Norway	157,036	2,278,917	2,435,953	6.4	93.6	100.0
Netherlands	495,828	7,073,543	7,569,371	6.6	93.4	100.0
Denmark	201,034	2,607,362	2,808,396	7.2	92.8	100.0
Bulgaria	218,304	2,447,960	2,666,265*	8.2	91.8	100.0
Sweden	396,325	4,282,669	4,678,993*	8.5	91.5	100.0
Czech Republic	369,282	3,913,217	4,282,499	8.6	91.4	100.0
Serbia	219,916	2,267,969	2,487,885	8.8	91.2	100.0
Finland	239,057	2,355,942	2,594,999	9.2	90.8	100.0
Switzerland	335,261	3,037,905	3,373,166	9.9	90.1	100.0
Spain	1,869,361	16,320,933	18,190,294	10.3	89.7	100.0
Ireland	182,896	1,526,816	1,709,712	10.7	89.3	100.0
Slovenia	87,148	716,692	803,840	10.8	89.2	100.0
Iceland	13,693	110,293	123,986	11.0	89.0	100.0
Luxembourg	27,990	177,228	205,218	13.6	86.4	100.0
Belgium	663,621	4,127,705	4,791,327*	13.9	86.1	100.0
Lithuania	180,916	1,123,423	1,304,338*	13.9	86.1	100.0
Hungary	576,749	3,507,732	4,084,481	14.1	85.9	100.0
France	4,100,523	23,760,507	27,861,031*	14.7	85.3	100.0
Germany	6,003,170	33,404,850	39,408,020	15.2	84.8	100.0
Estonia	90,980	499,289	590,269	15.4	84.6	100.0
Poland	2,077,363	11,274,627	13,351,990	15.6	84.4	100.0
Cyprus	49,145	261,655	310,800	15.8	84.2	100.0
Croatia	244,253	1,274,785	1,519,038	16.1	83.9	100.0
Italy	4,154,537	21,400,601	25,555,138	16.3	83.7	100.0
Romania	1,227,177	6,224,481	7,451,658	16.5	83.5	100.0
Austria	612,681	3,088,621	3,701,302	16.6	83.4	100.0
United Kingdom	4,656,384	22,338,910	26,995,294	17.2	82.8	100.0
Portugal	693,330	3,324,651	4,017,981	17.3	82.7	100.0
Latvia	147,077	684,009	831,086	17.7	82.3	100.0
Greece	819,740	3,426,923	4,246,663	19.3	80.7	100.0
Slovakia	373,158	1,478,901	1,852,059	20.1	79.9	100.0
Totals	31,494,011*	190,466,039*	221,960,050*	14.2	85.8	100.0

*Totals may occasionally show minor discrepancies because fractional weights are used.

C.2 EU-SILC 2014

Table C.5: Unweighted samples for 2014, listed by country

	SAL	nonSAL	total	% SAL	% nonSAL	% total
Austria	920	4,989	5,909	15.6	84.4	100.0
Belgium	933	5,088	6,021	15.5	84.5	100.0
Bulgaria	469	4,494	4,963	9.4	90.6	100.0
Croatia	997	4,446	5,443	18.3	81.7	100.0
Cyprus	737	3,557	4,294	17.2	82.8	100.0
Czech Republic	721	7,332	8,053	9.0	91.0	100.0
Denmark	323	5,434	5,757	5.6	94.4	100.0
Estonia	1,164	4,707	5,871	19.8	80.2	100.0
Finland	751	10,279	11,030	6.8	93.2	100.0
France	1,750	9,634	11,384	15.4	84.6	100.0
Germany	2,136	10,608	12,744	16.8	83.2	100.0
Greece	1,898	6,722	8,620	22.0	78.0	100.0
Hungary	1,382	7,829	9,211	15.0	85.0	100.0
Iceland	311	2,690	3,001	10.4	89.6	100.0
Ireland	629	4,857	5,486	11.5	88.5	100.0
Italy	2,954	16,709	19,663	15.0	85.0	100.0
Latvia	1,192	4,933	6,125	19.5	80.5	100.0
Lithuania	852	4,342	5,194	16.4	83.6	100.0
Luxembourg	562	3,317	3,879	14.5	85.5	100.0
Malta	267	4,114	4,381	6.1	93.9	100.0
Netherlands	542	9,632	10,174	5.3	94.7	100.0
Norway	354	7,017	7,371	4.8	95.2	100.0
Poland	2,031	10,947	12,978	15.6	84.4	100.0
Portugal	1,266	5,584	6,850	18.5	81.5	100.0
Romania	1,304	6,202	7,506	17.4	82.6	100.0
Serbia	744	5,311	6,055	12.3	87.7	100.0
Slovakia	1,173	4,317	5,490	21.4	78.6	100.0
Slovenia	941	8,248	9,189	10.2	89.8	100.0
Spain	1,348	10,617	11,965	11.3	88.7	100.0
Sweden	197	5,603	5,800	3.4	96.6	100.0
Switzerland	621	6,171	6,792	9.1	90.9	100.0
United Kingdom	1,852	8,007	9,859	18.8	81.2	100.0
Totals	33,321	213,737	247,058	13.5	86.5	100.0

Table C.6: Unweighted samples for 2014, listed by % of SAL Households

	SAL	nonSAL	total	% SAL	% nonSAL	% total
Sweden	197	5,603	5,800	3.4	96.6	100.0
Norway	354	7,017	7,371	4.8	95.2	100.0
Netherlands	542	9,632	10,174	5.3	94.7	100.0
Denmark	323	5,434	5,757	5.6	94.4	100.0
Malta	267	4,114	4,381	6.1	93.9	100.0
Finland	751	10,279	11,030	6.8	93.2	100.0
Czech Republic	721	7,332	8,053	9.0	91.0	100.0
Switzerland	621	6,171	6,792	9.1	90.9	100.0
Bulgaria	469	4,494	4,963	9.4	90.6	100.0
Slovenia	941	8,248	9,189	10.2	89.8	100.0
Iceland	311	2,690	3,001	10.4	89.6	100.0
Spain	1,348	10,617	11,965	11.3	88.7	100.0
Ireland	629	4,857	5,486	11.5	88.5	100.0
Serbia	744	5,311	6,055	12.3	87.7	100.0
Luxembourg	562	3,317	3,879	14.5	85.5	100.0
Hungary	1,382	7,829	9,211	15.0	85.0	100.0
Italy	2,954	16,709	19,663	15.0	85.0	100.0
France	1,750	9,634	11,384	15.4	84.6	100.0
Belgium	933	5,088	6,021	15.5	84.5	100.0
Austria	920	4,989	5,909	15.6	84.4	100.0
Poland	2,031	10,947	12,978	15.6	84.4	100.0
Lithuania	852	4,342	5,194	16.4	83.6	100.0
Germany	2,136	10,608	12,744	16.8	83.2	100.0
Cyprus	737	3,557	4,294	17.2	82.8	100.0
Romania	1,304	6,202	7,506	17.4	82.6	100.0
Croatia	997	4,446	5,443	18.3	81.7	100.0
Portugal	1,266	5,584	6,850	18.5	81.5	100.0
United Kingdom	1,852	8,007	9,859	18.8	81.2	100.0
Latvia	1,192	4,933	6,125	19.5	80.5	100.0
Estonia	1,164	4,707	5,871	19.8	80.2	100.0
Slovakia	1,173	4,317	5,490	21.4	78.6	100.0
Greece	1,898	6,722	8,620	22.0	78.0	100.0
Totals	33,321	213,737	247,058	13.5	86.5	100.0

Table C.7: Weighted samples for 2014, listed by country

	SAL	nonSAL	total	% SAL	% nonSAL	% total
Austria	617,159	3,113,042	3,730,200*	16.5	83.5	100.0
Belgium	776,442	4,037,032	4,813,473*	16.1	83.9	100.0
Bulgaria	231,739	2,527,603	2,759,342	8.4	91.6	100.0
Croatia	235,840	1,283,198	1,519,038	15.5	84.5	100.0
Cyprus	45,001	267,699	312,700	14.4	85.6	100.0
Czech Republic	364,132	3,940,365	4,304,496*	8.5	91.5	100.0
Denmark	194,645	2,630,340	2,824,984*	6.9	93.1	100.0
Estonia	97,514	484,556	582,070	16.8	83.2	100.0
Finland	220,999	2,401,500	2,622,499	8.4	91.6	100.0
France	4,168,136	23,906,958	28,075,094	14.8	85.2	100.0
Germany	6,092,595	33,612,730	39,705,325	15.3	84.7	100.0
Greece	862,413	3,404,332	4,266,745	20.2	79.8	100.0
Hungary	552,986	3,550,897	4,103,883	13.5	86.5	100.0
Iceland	14,534	110,908	125,442	11.6	88.4	100.0
Ireland	192,001	1,529,806	1,721,807	11.2	88.8	100.0
Italy	3,980,406	21,802,451	25,782,857	15.4	84.6	100.0
Latvia	142,393	692,220	834,613	17.1	82.9	100.0
Lithuania	169,079	1,123,766	1,292,846*	13.1	86.9	100.0
Luxembourg	28,297	183,313	211,610	13.4	86.6	100.0
Malta	8,788	153,250	162,038	5.4	94.6	100.0
Netherlands	475,121	7,115,107	7,590,228	6.3	93.7	100.0
Norway	135,437	2,299,333	2,434,770	5.6	94.4	100.0
Poland	1,977,029	11,423,793	13,400,822	14.8	85.2	100.0
Portugal	704,320	3,379,843	4,084,163	17.2	82.8	100.0
Romania	1,156,165	6,312,902	7,469,066*	15.5	84.5	100.0
Serbia	279,773	2,194,217	2,473,990	11.3	88.7	100.0
Slovakia	373,569	1,478,100	1,851,669	20.2	79.8	100.0
Slovenia	86,258	717,509	803,768*	10.7	89.3	100.0
Spain	1,833,329	16,433,135	18,266,464	10.0	90.0	100.0
Sweden	202,488	4,515,335	4,717,822*	4.3	95.7	100.0
Switzerland	359,773	3,282,202	3,641,975	9.9	90.1	100.0
United Kingdom	4,836,370	22,409,042	27,245,412	17.8	82.2	100.0
Totals	31,414,729*	192,316,484	223,731,213*	14.0	86.0	100.0

*Totals may occasionally show minor discrepancies because fractional weights are used.

Table C.8: Weighted samples for 2014, listed by % of SAL Households

	SAL	nonSAL	total	% SAL	% nonSAL	% total
Sweden	202,488	4,515,335	4,717,822*	4.3	95.7	100.0
Malta	8,788	153,250	162,038	5.4	94.6	100.0
Norway	135,437	2,299,333	2,434,770	5.6	94.4	100.0
Netherlands	475,121	7,115,107	7,590,228	6.3	93.7	100.0
Denmark	194,645	2,630,340	2,824,984*	6.9	93.1	100.0
Bulgaria	231,739	2,527,603	2,759,342	8.4	91.6	100.0
Finland	220,999	2,401,500	2,622,499	8.4	91.6	100.0
Czech Republic	364,132	3,940,365	4,304,496*	8.5	91.5	100.0
Switzerland	359,773	3,282,202	3,641,975	9.9	90.1	100.0
Spain	1,833,329	16,433,135	18,266,464	10.0	90.0	100.0
Slovenia	86,258	717,509	803,768*	10.7	89.3	100.0
Ireland	192,001	1,529,806	1,721,807	11.2	88.8	100.0
Serbia	279,773	2,194,217	2,473,990	11.3	88.7	100.0
Iceland	14,534	110,908	125,442	11.6	88.4	100.0
Lithuania	169,079	1,123,766	1,292,846*	13.1	86.9	100.0
Luxembourg	28,297	183,313	211,610	13.4	86.6	100.0
Hungary	552,986	3,550,897	4,103,883	13.5	86.5	100.0
Cyprus	45,001	267,699	312,700	14.4	85.6	100.0
France	4,168,136	23,906,958	28,075,094	14.8	85.2	100.0
Poland	1,977,029	11,423,793	13,400,822	14.8	85.2	100.0
Germany	6,092,595	33,612,730	39,705,325	15.3	84.7	100.0
Italy	3,980,406	21,802,451	25,782,857	15.4	84.6	100.0
Croatia	235,840	1,283,198	1,519,038	15.5	84.5	100.0
Romania	1,156,165	6,312,902	7,469,066*	15.5	84.5	100.0
Belgium	776,442	4,037,032	4,813,473*	16.1	83.9	100.0
Austria	617,159	3,113,042	3,730,200*	16.5	83.5	100.0
Estonia	97,514	484,556	582,070	16.8	83.2	100.0
Latvia	142,393	692,220	834,613	17.1	82.9	100.0
Portugal	704,320	3,379,843	4,084,163	17.2	82.8	100.0
United Kingdom	4,836,370	22,409,042	27,245,412	17.8	82.2	100.0
Greece	862,413	3,404,332	4,266,745	20.2	79.8	100.0
Slovakia	373,569	1,478,100	1,851,669	20.2	79.8	100.0
Totals	31,414,729*	192,316,484	223,731,213*	14.0	86.0	100.0

*Totals may occasionally show minor discrepancies because fractional weights are used.

C.3 EU-SILC 2015

Table C.9: Unweighted samples for 2015, listed by country

	SAL	nonSAL	total	% SAL	% nonSAL	% total
Austria	913	5,132	6,045	15.1	84.9	100.0
Belgium	844	5,162	6,006	14.1	85.9	100.0
Bulgaria	511	4,454	4,965	10.3	89.7	100.0
Croatia	1,594	4,968	6,562	24.3	75.7	100.0
Cyprus	810	3,547	4,357	18.6	81.4	100.0
Czech Republic	740	7,174	7,914	9.4	90.6	100.0
Denmark	380	5,645	6,025	6.3	93.7	100.0
Estonia	1,141	4,587	5,728	19.9	80.1	100.0
Finland	669	10,057	10,726	6.2	93.8	100.0
France	1,692	9,698	11,390	14.9	85.1	100.0
Germany	1,504	11,423	12,927	11.6	88.4	100.0
Greece	3,029	11,067	14,096	21.5	78.5	100.0
Hungary	1,314	6,456	7,770	16.9	83.1	100.0
Iceland	328	2,611	2,939	11.2	88.8	100.0
Ireland	599	4,853	5,452	11.0	89.0	100.0
Italy	2,642	15,343	17,985	14.7	85.3	100.0
Latvia	1,216	4,897	6,113	19.9	80.1	100.0
Lithuania	753	4,096	4,849	15.5	84.5	100.0
Luxembourg	578	2,896	3,474	16.6	83.4	100.0
Malta	245	3,988	4,233	5.8	94.2	100.0
Netherlands	644	9,162	9,806	6.6	93.4	100.0
Norway	263	6,130	6,393	4.1	95.9	100.0
Poland	1,816	10,367	12,183	14.9	85.1	100.0
Portugal	1,578	7,162	8,740	18.1	81.9	100.0
Romania	1,144	6,271	7,415	15.4	84.6	100.0
Serbia	762	4,918	5,680	13.4	86.6	100.0
Slovakia	1,238	4,399	5,637	22.0	78.0	100.0
Slovenia	970	7,715	8,685	11.2	88.8	100.0
Spain	1,326	11,041	12,367	10.7	89.3	100.0
Sweden	193	5,666	5,859	3.3	96.7	100.0
Switzerland	638	6,830	7,468	8.5	91.5	100.0
United Kingdom	1,801	7,511	9,312	19.3	80.7	100.0
Totals	33,875	215,226	249,101	13.6	86.4	100.0

Table C.10: Unweighted samples for 2015, listed by % of SAL Households

	SAL	nonSAL	total	% SAL	% nonSAL	% total
Sweden	193	5,666	5,859	3.3	96.7	100.0
Norway	263	6,130	6,393	4.1	95.9	100.0
Malta	245	3,988	4,233	5.8	94.2	100.0
Finland	669	10,057	10,726	6.2	93.8	100.0
Denmark	380	5,645	6,025	6.3	93.7	100.0
Netherlands	644	9,162	9,806	6.6	93.4	100.0
Switzerland	638	6,830	7,468	8.5	91.5	100.0
Czech Republic	740	7,174	7,914	9.4	90.6	100.0
Bulgaria	511	4,454	4,965	10.3	89.7	100.0
Spain	1,326	11,041	12,367	10.7	89.3	100.0
Ireland	599	4,853	5,452	11.0	89.0	100.0
Iceland	328	2,611	2,939	11.2	88.8	100.0
Slovenia	970	7,715	8,685	11.2	88.8	100.0
Germany	1,504	11,423	12,927	11.6	88.4	100.0
Serbia	762	4,918	5,680	13.4	86.6	100.0
Belgium	844	5,162	6,006	14.1	85.9	100.0
Italy	2,642	15,343	17,985	14.7	85.3	100.0
France	1,692	9,698	11,390	14.9	85.1	100.0
Poland	1,816	10,367	12,183	14.9	85.1	100.0
Austria	913	5,132	6,045	15.1	84.9	100.0
Romania	1,144	6,271	7,415	15.4	84.6	100.0
Lithuania	753	4,096	4,849	15.5	84.5	100.0
Luxembourg	578	2,896	3,474	16.6	83.4	100.0
Hungary	1,314	6,456	7,770	16.9	83.1	100.0
Portugal	1,578	7,162	8,740	18.1	81.9	100.0
Cyprus	810	3,547	4,357	18.6	81.4	100.0
United Kingdom	1,801	7,511	9,312	19.3	80.7	100.0
Estonia	1,141	4,587	5,728	19.9	80.1	100.0
Latvia	1,216	4,897	6,113	19.9	80.1	100.0
Greece	3,029	11,067	14,096	21.5	78.5	100.0
Slovakia	1,238	4,399	5,637	22.0	78.0	100.0
Croatia	1,594	4,968	6,562	24.3	75.7	100.0
Totals	33,875	215,226	249,101	13.6	86.4	100.0

Table C.11: Weighted samples for 2015, listed by country

	SAL	nonSAL	total	% SAL	% nonSAL	% total
Austria	604,315	3,205,377	3,809,693*	15.9	84.1	100.0
Belgium	702,620	4,144,600	4,847,220	14.5	85.5	100.0
Bulgaria	261,928	2,646,800	2,908,728	9.0	91.0	100.0
Croatia	322,852	1,174,455	1,497,307	21.6	78.4	100.0
Cyprus	48,990	264,110	313,100	15.6	84.4	100.0
Czech Republic	374,745	3,949,905	4,324,650	8.7	91.3	100.0
Denmark	211,548	2,626,129	2,837,678*	7.5	92.5	100.0
Estonia	100,405	480,302	580,708*	17.3	82.7	100.0
Finland	221,838	2,418,661	2,640,499	8.4	91.6	100.0
France	3,988,988	24,341,383	28,330,371	14.1	85.9	100.0
Germany	4,289,289	35,885,701	40,174,990	10.7	89.3	100.0
Greece	857,691	3,338,149	4,195,840	20.4	79.6	100.0
Hungary	600,020	3,529,257	4,129,277	14.5	85.5	100.0
Iceland	16,191	112,819	129,010	12.6	87.4	100.0
Ireland	175,554	1,560,983	1,736,537	10.1	89.9	100.0
Italy	4,114,924	21,660,948	25,775,872	16.0	84.0	100.0
Latvia	147,055	668,432	815,487	18.0	82.0	100.0
Lithuania	155,057	1,143,007	1,298,065*	11.9	88.1	100.0
Luxembourg	33,743	182,085	215,828	15.6	84.4	100.0
Malta	8,503	160,538	169,041	5.0	95.0	100.0
Netherlands	653,920	7,011,278	7,665,198	8.5	91.5	100.0
Norway	132,511	2,428,365	2,560,876	5.2	94.8	100.0
Poland	1,875,468	11,396,922	13,272,390	14.1	85.9	100.0
Portugal	728,290	3,376,418	4,104,708	17.7	82.3	100.0
Romania	1,010,893	6,458,670	7,469,563	13.5	86.5	100.0
Serbia	286,844	2,175,703	2,462,547	11.6	88.4	100.0
Slovakia	350,983	1,501,076	1,852,059	19.0	81.0	100.0
Slovenia	89,833	716,134	805,967	11.1	88.9	100.0
Spain	1,799,455	16,564,083	18,363,538	9.8	90.2	100.0
Sweden	204,850	4,561,706	4,766,556	4.3	95.7	100.0
Switzerland	333,857	3,390,153	3,724,010	9.0	91.0	100.0
United Kingdom	4,956,721	22,477,966	27,434,687	18.1	81.9	100.0
Totals	29,659,882*	195,552,115	225,211,998*	13.2	86.8	100.0

*Totals may occasionally show minor discrepancies because fractional weights are used.

Table C.12: Weighted samples for 2015, listed by % of SAL Households

	SAL	nonSAL	total	% SAL	% nonSAL	% total
Sweden	204,850	4,561,706	4,766,556	4.3	95.7	100.0
Malta	8,503	160,538	169,041	5.0	95.0	100.0
Norway	132,511	2,428,365	2,560,876	5.2	94.8	100.0
Denmark	211,548	2,626,129	2,837,678*	7.5	92.5	100.0
Finland	221,838	2,418,661	2,640,499	8.4	91.6	100.0
Netherlands	653,920	7,011,278	7,665,198	8.5	91.5	100.0
Czech Republic	374,745	3,949,905	4,324,650	8.7	91.3	100.0
Bulgaria	261,928	2,646,800	2,908,728	9.0	91.0	100.0
Switzerland	333,857	3,390,153	3,724,010	9.0	91.0	100.0
Spain	1,799,455	16,564,083	18,363,538	9.8	90.2	100.0
Ireland	175,554	1,560,983	1,736,537	10.1	89.9	100.0
Germany	4,289,289	35,885,701	40,174,990	10.7	89.3	100.0
Slovenia	89,833	716,134	805,967	11.1	88.9	100.0
Serbia	286,844	2,175,703	2,462,547	11.6	88.4	100.0
Lithuania	155,057	1,143,007	1,298,065*	11.9	88.1	100.0
Iceland	16,191	112,819	129,010	12.6	87.4	100.0
Romania	1,010,893	6,458,670	7,469,563	13.5	86.5	100.0
France	3,988,988	24,341,383	28,330,371	14.1	85.9	100.0
Poland	1,875,468	11,396,922	13,272,390	14.1	85.9	100.0
Belgium	702,620	4,144,600	4,847,220	14.5	85.5	100.0
Hungary	600,020	3,529,257	4,129,277	14.5	85.5	100.0
Cyprus	48,990	264,110	313,100	15.6	84.4	100.0
Luxembourg	33,743	182,085	215,828	15.6	84.4	100.0
Austria	604,315	3,205,377	3,809,693*	15.9	84.1	100.0
Italy	4,114,924	21,660,948	25,775,872	16.0	84.0	100.0
Estonia	100,405	480,302	580,708*	17.3	82.7	100.0
Portugal	728,290	3,376,418	4,104,708	17.7	82.3	100.0
Latvia	147,055	668,432	815,487	18.0	82.0	100.0
United Kingdom	4,956,721	22,477,966	27,434,687	18.1	81.9	100.0
Slovakia	350,983	1,501,076	1,852,059	19.0	81.0	100.0
Greece	857,691	3,338,149	4,195,840	20.4	79.6	100.0
Croatia	322,852	1,174,455	1,497,307	21.6	78.4	100.0
Totals	29,659,882*	195,552,115	225,211,998*	13.2	86.8	100.0

*Totals may occasionally show minor discrepancies because fractional weights are used.

C.4 EU-SILC 2016

Table C.13: Unweighted samples for 2016, listed by country

	SAL	nonSAL	total	% SAL	% nonSAL	% total
Austria	907	5,093	6,000	15.1	84.9	100.0
Belgium	869	5,036	5,905	14.7	85.3	100.0
Bulgaria	663	6,623	7,286	9.1	90.9	100.0
Croatia	1,661	5,906	7,567	22.0	78.0	100.0
Cyprus	514	3,664	4,178	12.3	87.7	100.0
Czech Republic	705	7,802	8,507	8.3	91.7	100.0
Denmark	410	5,853	6,263	6.5	93.5	100.0
Estonia	1,056	4,970	6,026	17.5	82.5	100.0
Finland	703	9,917	10,620	6.6	93.4	100.0
France	1,738	9,721	11,459	15.2	84.8	100.0
Germany	1,595	11,735	13,330	12.0	88.0	100.0
Greece	4,076	14,179	18,255	22.3	77.7	100.0
Hungary	1,267	6,736	8,003	15.8	84.2	100.0
Iceland	346	2,497	2,843	12.2	87.8	100.0
Ireland	576	4,642	5,218	11.0	89.0	100.0
Italy	2,101	19,224	21,325	9.9	90.1	100.0
Latvia	1,006	5,036	6,042	16.7	83.3	100.0
Lithuania	671	4,137	4,808	14.0	86.0	100.0
Luxembourg	616	3,220	3,836	16.1	83.9	100.0
Malta	316	3,774	4,090	7.7	92.3	100.0
Netherlands	819	11,929	12,748	6.4	93.6	100.0
Norway	325	6,534	6,859	4.7	95.3	100.0
Poland	1,633	10,349	11,982	13.6	86.4	100.0
Portugal	1,758	8,858	10,616	16.6	83.4	100.0
Romania	1,009	6,397	7,406	13.6	86.4	100.0
Serbia	680	4,874	5,554	12.2	87.8	100.0
Slovakia	1,226	4,512	5,738	21.4	78.6	100.0
Slovenia	835	7,750	8,585	9.7	90.3	100.0
Spain	1,349	12,891	14,240	9.5	90.5	100.0
Sweden	193	5,594	5,787	3.3	96.7	100.0
Switzerland	702	7,060	7,762	9.0	91.0	100.0
United Kingdom	1,935	7,776	9,711	19.9	80.1	100.0
Totals	34,260	234,289	268,549	12.8	87.2	100.0

Table C.14: Unweighted samples for 2016, listed by % of SAL Households

	SAL	nonSAL	total	% SAL	% nonSAL	% total
Sweden	193	5,594	5,787	3.3	96.7	100.0
Norway	325	6,534	6,859	4.7	95.3	100.0
Netherlands	819	11,929	12,748	6.4	93.6	100.0
Denmark	410	5,853	6,263	6.5	93.5	100.0
Finland	703	9,917	10,620	6.6	93.4	100.0
Malta	316	3,774	4,090	7.7	92.3	100.0
Czech Republic	705	7,802	8,507	8.3	91.7	100.0
Switzerland	702	7,060	7,762	9.0	91.0	100.0
Bulgaria	663	6,623	7,286	9.1	90.9	100.0
Spain	1,349	12,891	14,240	9.5	90.5	100.0
Slovenia	835	7,750	8,585	9.7	90.3	100.0
Italy	2,101	19,224	21,325	9.9	90.1	100.0
Ireland	576	4,642	5,218	11.0	89.0	100.0
Germany	1,595	11,735	13,330	12.0	88.0	100.0
Iceland	346	2,497	2,843	12.2	87.8	100.0
Serbia	680	4,874	5,554	12.2	87.8	100.0
Cyprus	514	3,664	4,178	12.3	87.7	100.0
Poland	1,633	10,349	11,982	13.6	86.4	100.0
Romania	1,009	6,397	7,406	13.6	86.4	100.0
Lithuania	671	4,137	4,808	14.0	86.0	100.0
Belgium	869	5,036	5,905	14.7	85.3	100.0
Austria	907	5,093	6,000	15.1	84.9	100.0
France	1,738	9,721	11,459	15.2	84.8	100.0
Hungary	1,267	6,736	8,003	15.8	84.2	100.0
Luxembourg	616	3,220	3,836	16.1	83.9	100.0
Portugal	1,758	8,858	10,616	16.6	83.4	100.0
Latvia	1,006	5,036	6,042	16.7	83.3	100.0
Estonia	1,056	4,970	6,026	17.5	82.5	100.0
United Kingdom	1,935	7,776	9,711	19.9	80.1	100.0
Slovakia	1,226	4,512	5,738	21.4	78.6	100.0
Croatia	1,661	5,906	7,567	22.0	78.0	100.0
Greece	4,076	14,179	18,255	22.3	77.7	100.0
Totals	34,260	234,289	268,549	12.8	87.2	100.0

Table C.15: Weighted samples for 2016, listed by country

	SAL	nonSAL	total	% SAL	% nonSAL	% total
Austria	602,578	3,259,520	3,862,098	15.6	84.4	100.0
Belgium	752,396	4,098,531	4,850,927	15.5	84.5	100.0
Bulgaria	219,187	2,693,702	2,912,889	7.5	92.5	100.0
Croatia	295,697	1,194,357	1,490,054	19.8	80.2	100.0
Cyprus	32,002	280,998	313,000	10.2	89.8	100.0
Czech Republic	339,736	4,008,104	4,347,840	7.8	92.2	100.0
Denmark	200,575	2,642,204	2,842,779	7.1	92.9	100.0
Estonia	88,244	499,775	588,019	15.0	85.0	100.0
Finland	226,172	2,429,328	2,655,500	8.5	91.5	100.0
France	4,018,101	24,250,741	28,268,842	14.2	85.8	100.0
Germany	4,293,757	36,006,524	40,300,281	10.7	89.3	100.0
Greece	856,578	3,312,206	4,168,784	20.5	79.5	100.0
Hungary	520,166	3,629,345	4,149,511	12.5	87.5	100.0
Iceland	17,736	114,844	132,580	13.4	86.6	100.0
Ireland	170,353	1,587,095	1,757,448	9.7	90.3	100.0
Italy	2,674,854	23,149,120	25,823,974	10.4	89.6	100.0
Latvia	123,275	688,392	811,667	15.2	84.8	100.0
Lithuania	139,303	1,170,364	1,309,667	10.6	89.4	100.0
Luxembourg	35,972	191,112	227,085*	15.8	84.2	100.0
Malta	12,032	162,830	174,862	6.9	93.1	100.0
Netherlands	535,557	7,185,230	7,720,787	6.9	93.1	100.0
Norway	162,036	2,420,787	2,582,823	6.3	93.7	100.0
Poland	1,749,792	11,567,311	13,317,104*	13.1	86.9	100.0
Portugal	644,791	3,454,493	4,099,284	15.7	84.3	100.0
Romania	888,640	6,581,789	7,470,429	11.9	88.1	100.0
Serbia	259,371	2,185,107	2,444,478	10.6	89.4	100.0
Slovakia	323,533	1,528,526	1,852,059	17.5	82.5	100.0
Slovenia	78,919	737,591	816,511*	9.7	90.3	100.0
Spain	1,596,582	16,811,738	18,408,320	8.7	91.3	100.0
Sweden	207,574	4,615,164	4,822,738	4.3	95.7	100.0
Switzerland	374,636	3,396,260	3,770,896	9.9	90.1	100.0
United Kingdom	5,103,016	22,651,611	27,754,627	18.4	81.6	100.0
Totals	27,543,162*	198,504,700*	226,047,862*	12.2	87.8	13.9

*Totals may occasionally show minor discrepancies because fractional weights are used.

Table C.16: Weighted samples for 2016, listed by % of SAL Households

	SAL	nonSAL	total	% SAL	% nonSAL	% total
Sweden	207,574	4,615,164	4,822,738	4.3	95.7	100.0
Norway	162,036	2,420,787	2,582,823	6.3	93.7	100.0
Malta	12,032	162,830	174,862	6.9	93.1	100.0
Netherlands	535,557	7,185,230	7,720,787	6.9	93.1	100.0
Denmark	200,575	2,642,204	2,842,779	7.1	92.9	100.0
Bulgaria	219,187	2,693,702	2,912,889	7.5	92.5	100.0
Czech Republic	339,736	4,008,104	4,347,840	7.8	92.2	100.0
Finland	226,172	2,429,328	2,655,500	8.5	91.5	100.0
Spain	1,596,582	16,811,738	18,408,320	8.7	91.3	100.0
Ireland	170,353	1,587,095	1,757,448	9.7	90.3	100.0
Slovenia	78,919	737,591	816,511*	9.7	90.3	100.0
Switzerland	374,636	3,396,260	3,770,896	9.9	90.1	100.0
Cyprus	32,002	280,998	313,000	10.2	89.8	100.0
Italy	2,674,854	23,149,120	25,823,974	10.4	89.6	100.0
Lithuania	139,303	1,170,364	1,309,667	10.6	89.4	100.0
Serbia	259,371	2,185,107	2,444,478	10.6	89.4	100.0
Germany	4,293,757	36,006,524	40,300,281	10.7	89.3	100.0
Romania	888,640	6,581,789	7,470,429	11.9	88.1	100.0
Hungary	520,166	3,629,345	4,149,511	12.5	87.5	100.0
Poland	1,749,792	11,567,311	13,317,104*	13.1	86.9	100.0
Iceland	17,736	114,844	132,580	13.4	86.6	100.0
France	4,018,101	24,250,741	28,268,842	14.2	85.8	100.0
Estonia	88,244	499,775	588,019	15.0	85.0	100.0
Latvia	123,275	688,392	811,667	15.2	84.8	100.0
Belgium	752,396	4,098,531	4,850,927	15.5	84.5	100.0
Austria	602,578	3,259,520	3,862,098	15.6	84.4	100.0
Portugal	644,791	3,454,493	4,099,284	15.7	84.3	100.0
Luxembourg	35,972	191,112	227,085*	15.8	84.2	100.0
Slovakia	323,533	1,528,526	1,852,059	17.5	82.5	100.0
United Kingdom	5,103,016	22,651,611	27,754,627	18.4	81.6	100.0
Croatia	295,697	1,194,357	1,490,054	19.8	80.2	100.0
Greece	856,578	3,312,206	4,168,784	20.5	79.5	100.0
Totals	27,543,162*	198,504,700*	226,047,862*	12.2	87.8	13.9

*Totals may occasionally show minor discrepancies because fractional weights are used.

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Table C.17: Unweighted samples for 2017, listed by country

	SAL	nonSAL	total	% SAL	% nonSAL	% total
Austria	923	5,167	6,090	15.2	84.8	100.0
Belgium	870	5,183	6,053	14.4	85.6	100.0
Bulgaria	813	6,537	7,350	11.1	88.9	100.0
Croatia	1,742	6,100	7,842	22.2	77.8	100.0
Cyprus	649	3,662	4,311	15.1	84.9	100.0
Czech Republic	961	7,740	8,701	11.0	89.0	100.0
Denmark	424	5,483	5,907	7.2	92.8	100.0
Estonia	1,146	5,009	6,155	18.6	81.4	100.0
Finland	652	9,558	10,210	6.4	93.6	100.0
France	1,758	9,310	11,068	15.9	84.1	100.0
Germany	1,676	11,820	13,496	12.4	87.6	100.0
Greece	4,829	17,914	22,743	21.2	78.8	100.0
Hungary	1,395	6,747	8,142	17.1	82.9	100.0
Iceland	366	2,534	2,900	12.6	87.4	100.0
Ireland	611	4,418	5,029	12.1	87.9	100.0
Italy	1,809	20,417	22,226	8.1	91.9	100.0
Latvia	1,151	4,863	6,014	19.1	80.9	100.0
Lithuania	680	4,264	4,944	13.8	86.2	100.0
Luxembourg	660	3,312	3,972	16.6	83.4	100.0
Malta	234	3,668	3,902	6.0	94.0	100.0
Netherlands	918	12,410	13,328	6.9	93.1	100.0
Norway	274	5,999	6,273	4.4	95.6	100.0
Poland	1,915	11,142	13,057	14.7	85.3	100.0
Portugal	2,145	9,946	12,091	17.7	82.3	100.0
Romania	978	6,388	7,366	13.3	86.7	100.0
Serbia	728	4,535	5,263	13.8	86.2	100.0
Slovakia	1,352	4,250	5,602	24.1	75.9	100.0
Slovenia	949	7,852	8,801	10.8	89.2	100.0
Spain	1,172	12,568	13,740	8.5	91.5	100.0
Sweden	245	5,683	5,928	4.1	95.9	100.0
Switzerland	721	7,401	8,122	8.9	91.1	100.0
United Kingdom	2,517	9,883	12,400	20.3	79.7	100.0
Totals	37,263	241,763	279,026	13.4	86.6	100.0

Table C.18: Unweighted samples for 2017, listed by % of SAL Households

	SAL	nonSAL	total	% SAL	% nonSAL	% total
Sweden	245	5,683	5,928	4.1	95.9	100.0
Norway	274	5,999	6,273	4.4	95.6	100.0
Malta	234	3,668	3,902	6.0	94.0	100.0
Finland	652	9,558	10,210	6.4	93.6	100.0
Netherlands	918	12,410	13,328	6.9	93.1	100.0
Denmark	424	5,483	5,907	7.2	92.8	100.0
Italy	1,809	20,417	22,226	8.1	91.9	100.0
Spain	1,172	12,568	13,740	8.5	91.5	100.0
Switzerland	721	7,401	8,122	8.9	91.1	100.0
Slovenia	949	7,852	8,801	10.8	89.2	100.0
Czech Republic	961	7,740	8,701	11.0	89.0	100.0
Bulgaria	813	6,537	7,350	11.1	88.9	100.0
Ireland	611	4,418	5,029	12.1	87.9	100.0
Germany	1,676	11,820	13,496	12.4	87.6	100.0
Iceland	366	2,534	2,900	12.6	87.4	100.0
Romania	978	6,388	7,366	13.3	86.7	100.0
Lithuania	680	4,264	4,944	13.8	86.2	100.0
Serbia	728	4,535	5,263	13.8	86.2	100.0
Belgium	870	5,183	6,053	14.4	85.6	100.0
Poland	1,915	11,142	13,057	14.7	85.3	100.0
Cyprus	649	3,662	4,311	15.1	84.9	100.0
Austria	923	5,167	6,090	15.2	84.8	100.0
France	1,758	9,310	11,068	15.9	84.1	100.0
Luxembourg	660	3,312	3,972	16.6	83.4	100.0
Hungary	1,395	6,747	8,142	17.1	82.9	100.0
Portugal	2,145	9,946	12,091	17.7	82.3	100.0
Estonia	1,146	5,009	6,155	18.6	81.4	100.0
Latvia	1,151	4,863	6,014	19.1	80.9	100.0
United Kingdom	2,517	9,883	12,400	20.3	79.7	100.0
Greece	4,829	17,914	22,743	21.2	78.8	100.0
Croatia	1,742	6,100	7,842	22.2	77.8	100.0
Slovakia	1,352	4,250	5,602	24.1	75.9	100.0
Totals	37,263	241,763	279,026	13.4	86.6	100.0

Table C.19: Weighted samples for 2017, listed by country

	SAL	nonSAL	total	% SAL	% nonSAL	% total
Austria	629,051	3,257,508	3,886,560*	16.2	83.8	100.0
Belgium	703,850	4,166,116	4,869,966	14.5	85.5	100.0
Bulgaria	270,151	2,648,169	2,918,320	9.3	90.7	100.0
Croatia	303,904	1,182,350	1,486,254	20.4	79.6	100.0
Cyprus	39,217	277,483	316,700	12.4	87.6	100.0
Czech Republic	443,316	3,928,941	4,372,257	10.1	89.9	100.0
Denmark	223,201	2,641,243	2,864,444	7.8	92.2	100.0
Estonia	96,721	501,121	597,842	16.2	83.8	100.0
Finland	223,247	2,453,853	2,677,100	8.3	91.7	100.0
France	4,211,818	24,326,247	28,538,065	14.8	85.2	100.0
Germany	4,441,691	36,215,881	40,657,572	10.9	89.1	100.0
Greece	794,846	3,367,596	4,162,442	19.1	80.9	100.0
Hungary	562,018	3,579,839	4,141,857	13.6	86.4	100.0
Iceland	20,390	125,310	145,700	14.0	86.0	100.0
Ireland	189,629	1,610,807	1,800,436	10.5	89.5	100.0
Italy	2,164,226	23,652,823	25,817,048*	8.4	91.6	100.0
Latvia	144,280	682,483	826,763	17.5	82.5	100.0
Lithuania	145,977	1,158,123	1,304,100	11.2	88.8	100.0
Luxembourg	39,499	191,706	231,205	17.1	82.9	100.0
Malta	8,779	171,275	180,054	4.9	95.1	100.0
Netherlands	558,921	7,235,154	7,794,075	7.2	92.8	100.0
Norway	143,940	2,523,442	2,667,382	5.4	94.6	100.0
Poland	1,848,282	11,433,763	13,282,045	13.9	86.1	100.0
Portugal	677,427	3,440,343	4,117,770	16.5	83.5	100.0
Romania	875,532	6,606,847	7,482,379	11.7	88.3	100.0
Serbia	309,423	2,122,195	2,431,618	12.7	87.3	100.0
Slovakia	350,786	1,501,273	1,852,059	18.9	81.1	100.0
Slovenia	93,546	723,205	816,751	11.5	88.5	100.0
Spain	1,412,352	17,087,648	18,500,000	7.6	92.4	100.0
Sweden	267,173	4,575,072	4,842,245	5.5	94.5	100.0
Switzerland	372,444	3,445,633	3,818,077	9.8	90.2	100.0
United Kingdom	5,088,763	22,866,651	27,955,414	18.2	81.8	100.0
Totals	27,654,400	199,700,101*	227,354,501*	12.2	87.8	100.0

*Totals may occasionally show minor discrepancies because fractional weights are used.

Table C.20: Weighted samples for 2017, listed by % of SAL Households

	SAL	nonSAL	total	% SAL	% nonSAL	% total
Malta	8,779	171,275	180,054	4.9	95.1	100.0
Norway	143,940	2,523,442	2,667,382	5.4	94.6	100.0
Sweden	267,173	4,575,072	4,842,245	5.5	94.5	100.0
Netherlands	558,921	7,235,154	7,794,075	7.2	92.8	100.0
Spain	1,412,352	17,087,648	18,500,000	7.6	92.4	100.0
Denmark	223,201	2,641,243	2,864,444	7.8	92.2	100.0
Finland	223,247	2,453,853	2,677,100	8.3	91.7	100.0
Italy	2,164,226	23,652,823	25,817,048*	8.4	91.6	100.0
Bulgaria	270,151	2,648,169	2,918,320	9.3	90.7	100.0
Switzerland	372,444	3,445,633	3,818,077	9.8	90.2	100.0
Czech Republic	443,316	3,928,941	4,372,257	10.1	89.9	100.0
Ireland	189,629	1,610,807	1,800,436	10.5	89.5	100.0
Germany	4,441,691	36,215,881	40,657,572	10.9	89.1	100.0
Lithuania	145,977	1,158,123	1,304,100	11.2	88.8	100.0
Slovenia	93,546	723,205	816,751	11.5	88.5	100.0
Romania	875,532	6,606,847	7,482,379	11.7	88.3	100.0
Cyprus	39,217	277,483	316,700	12.4	87.6	100.0
Serbia	309,423	2,122,195	2,431,618	12.7	87.3	100.0
Hungary	562,018	3,579,839	4,141,857	13.6	86.4	100.0
Poland	1,848,282	11,433,763	13,282,045	13.9	86.1	100.0
Iceland	20,390	125,310	145,700	14.0	86.0	100.0
Belgium	703,850	4,166,116	4,869,966	14.5	85.5	100.0
France	4,211,818	24,326,247	28,538,065	14.8	85.2	100.0
Austria	629,051	3,257,508	3,886,560*	16.2	83.8	100.0
Estonia	96,721	501,121	597,842	16.2	83.8	100.0
Portugal	677,427	3,440,343	4,117,770	16.5	83.5	100.0
Luxembourg	39,499	191,706	231,205	17.1	82.9	100.0
Latvia	144,280	682,483	826,763	17.5	82.5	100.0
United Kingdom	5,088,763	22,866,651	27,955,414	18.2	81.8	100.0
Slovakia	350,786	1,501,273	1,852,059	18.9	81.1	100.0
Greece	794,846	3,367,596	4,162,442	19.1	80.9	100.0
Croatia	303,904	1,182,350	1,486,254	20.4	79.6	100.0
Totals	27,654,400	199,700,101*	227,354,501*	12.2	87.8	100.0

*Totals may occasionally show minor discrepancies because fractional weights are used.

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Table C.21: Unweighted samples for 2018, listed by country

	SAL	nonSAL	total	% SAL	% nonSAL	% total
Austria	859	5,244	6,103	14.1	85.9	100.0
Belgium	874	5,072	5,946	14.7	85.3	100.0
Bulgaria	644	6,589	7,233	8.9	91.1	100.0
Croatia	1,879	6,504	8,383	22.4	77.6	100.0
Cyprus	741	3,451	4,192	17.7	82.3	100.0
Czech Republic	897	7,737	8,634	10.4	89.6	100.0
Denmark	350	5,254	5,604	6.2	93.8	100.0
Estonia	1,211	4,861	6,072	19.9	80.1	100.0
Finland	604	9,228	9,832	6.1	93.9	100.0
France	1,712	9,164	10,876	15.7	84.3	100.0
Germany	1,520	11,372	12,892	11.8	88.2	100.0
Greece	5,105	19,200	24,305	21.0	79.0	100.0
Hungary	1,279	6,245	7,524	17.0	83.0	100.0
Iceland	392	2,577	2,969	13.2	86.8	100.0
Ireland	495	3,887	4,382	11.3	88.7	100.0
Italy	2,042	19,131	21,173	9.6	90.4	100.0
Latvia	1,045	4,788	5,833	17.9	82.1	100.0
Lithuania	637	4,268	4,905	13.0	87.0	100.0
Luxembourg	613	3,220	3,833	16.0	84.0	100.0
Malta	249	3,574	3,823	6.5	93.5	100.0
Netherlands	800	11,693	12,493	6.4	93.6	100.0
Norway	269	5,712	5,981	4.5	95.5	100.0
Poland	2,179	13,035	15,214	14.3	85.7	100.0
Portugal	2,311	11,406	13,717	16.8	83.2	100.0
Romania	953	6,325	7,278	13.1	86.9	100.0
Serbia	517	4,695	5,212	9.9	90.1	100.0
Slovakia	1,363	4,299	5,662	24.1	75.9	100.0
Slovenia	877	7,792	8,669	10.1	89.9	100.0
Spain	1,176	12,192	13,368	8.8	91.2	100.0
Sweden	234	5,597	5,831	4.0	96.0	100.0
Switzerland	589	6,091	6,680	8.8	91.2	100.0
United Kingdom	3,508	13,605	17,113	20.5	79.5	100.0
Totals	37,924	243,808	281,732	13.5	86.5	100.0

Table C.22: Unweighted samples for 2018, listed by % of SAL Households

	SAL	nonSAL	total	% SAL	% nonSAL	% total
Sweden	234	5,597	5,831	4.0	96.0	100.0
Norway	269	5,712	5,981	4.5	95.5	100.0
Finland	604	9,228	9,832	6.1	93.9	100.0
Denmark	350	5,254	5,604	6.2	93.8	100.0
Netherlands	800	11,693	12,493	6.4	93.6	100.0
Malta	249	3,574	3,823	6.5	93.5	100.0
Spain	1,176	12,192	13,368	8.8	91.2	100.0
Switzerland	589	6,091	6,680	8.8	91.2	100.0
Bulgaria	644	6,589	7,233	8.9	91.1	100.0
Italy	2,042	19,131	21,173	9.6	90.4	100.0
Serbia	517	4,695	5,212	9.9	90.1	100.0
Slovenia	877	7,792	8,669	10.1	89.9	100.0
Czech Republic	897	7,737	8,634	10.4	89.6	100.0
Ireland	495	3,887	4,382	11.3	88.7	100.0
Germany	1,520	11,372	12,892	11.8	88.2	100.0
Lithuania	637	4,268	4,905	13.0	87.0	100.0
Romania	953	6,325	7,278	13.1	86.9	100.0
Iceland	392	2,577	2,969	13.2	86.8	100.0
Austria	859	5,244	6,103	14.1	85.9	100.0
Poland	2,179	13,035	15,214	14.3	85.7	100.0
Belgium	874	5,072	5,946	14.7	85.3	100.0
France	1,712	9,164	10,876	15.7	84.3	100.0
Luxembourg	613	3,220	3,833	16.0	84.0	100.0
Portugal	2,311	11,406	13,717	16.8	83.2	100.0
Hungary	1,279	6,245	7,524	17.0	83.0	100.0
Cyprus	741	3,451	4,192	17.7	82.3	100.0
Latvia	1,045	4,788	5,833	17.9	82.1	100.0
Estonia	1,211	4,861	6,072	19.9	80.1	100.0
United Kingdom	3,508	13,605	17,113	20.5	79.5	100.0
Greece	5,105	19,200	24,305	21.0	79.0	100.0
Croatia	1,879	6,504	8,383	22.4	77.6	100.0
Slovakia	1,363	4,299	5,662	24.1	75.9	100.0
Totals	37,924	243,808	281,732	13.5	86.5	100.0

Table C.23: Weighted samples for 2018, listed by country

	SAL	nonSAL	total	% SAL	% nonSAL	% total
Austria	601,877	3,309,570	3,911,448*	15.4	84.6	100.0
Belgium	723,891	4,191,376	4,915,267	14.7	85.3	100.0
Bulgaria	208,096	2,713,836	2,921,932	7.1	92.9	100.0
Croatia	301,944	1,172,705	1,474,649	20.5	79.5	100.0
Cyprus	48,555	275,445	324,000	15.0	85.0	100.0
Czech Republic	413,261	3,981,608	4,394,869	9.4	90.6	100.0
Denmark	193,490	2,693,183	2,886,673	6.7	93.3	100.0
Estonia	105,211	497,395	602,606	17.5	82.5	100.0
Finland	228,519	2,484,782	2,713,300*	8.4	91.6	100.0
France	4,218,283	24,415,498	28,633,781	14.7	85.3	100.0
Germany	4,312,345	36,410,252	40,722,597	10.6	89.4	100.0
Greece	791,762	3,333,501	4,125,263	19.2	80.8	100.0
Hungary	535,986	3,595,295	4,131,281	13.0	87.0	100.0
Iceland	21,193	128,420	149,613	14.2	85.8	100.0
Ireland	174,065	1,676,322	1,850,387	9.4	90.6	100.0
Italy	2,519,401	23,373,177	25,892,578	9.7	90.3	100.0
Latvia	134,946	700,730	835,676	16.1	83.9	100.0
Lithuania	140,115	1,146,863	1,286,979*	10.9	89.1	100.0
Luxembourg	40,613	211,722	252,336*	16.1	83.9	100.0
Malta	8,832	178,917	187,749	4.7	95.3	100.0
Netherlands	512,736	7,345,178	7,857,914	6.5	93.5	100.0
Norway	150,416	2,503,836	2,654,252	5.7	94.3	100.0
Poland	1,747,606	11,433,336	13,180,943*	13.3	86.7	100.0
Portugal	668,408	3,490,922	4,159,330	16.1	83.9	100.0
Romania	859,101	6,635,229	7,494,330	11.5	88.5	100.0
Serbia	217,921	2,213,697	2,431,618	9.0	91.0	100.0
Slovakia	352,528	1,499,531	1,852,059	19.0	81.0	100.0
Slovenia	85,704	731,009	816,713	10.5	89.5	100.0
Spain	1,563,393	16,982,553	18,545,946	8.4	91.6	100.0
Sweden	242,231	4,696,233	4,938,464	4.9	95.1	100.0
Switzerland	378,417	3,446,236	3,824,653	9.9	90.1	100.0
United Kingdom	5,348,248	22,852,034	28,200,282	19.0	81.0	100.0
Totals	27,849,096*	200,320,392*	228,169,487*	12.2	87.8	100.0

*Totals may occasionally show minor discrepancies because fractional weights are used.

Table C.24: Weighted samples for 2018, listed by % of SAL Households

	SAL	nonSAL	total	% SAL	% nonSAL	% total
Malta	8,832	178,917	187,749	4.7	95.3	100.0
Sweden	242,231	4,696,233	4,938,464	4.9	95.1	100.0
Norway	150,416	2,503,836	2,654,252	5.7	94.3	100.0
Netherlands	512,736	7,345,178	7,857,914	6.5	93.5	100.0
Denmark	193,490	2,693,183	2,886,673	6.7	93.3	100.0
Bulgaria	208,096	2,713,836	2,921,932	7.1	92.9	100.0
Finland	228,519	2,484,782	2,713,300*	8.4	91.6	100.0
Spain	1,563,393	16,982,553	18,545,946	8.4	91.6	100.0
Serbia	217,921	2,213,697	2,431,618	9.0	91.0	100.0
Czech Republic	413,261	3,981,608	4,394,869	9.4	90.6	100.0
Ireland	174,065	1,676,322	1,850,387	9.4	90.6	100.0
Italy	2,519,401	23,373,177	25,892,578	9.7	90.3	100.0
Switzerland	378,417	3,446,236	3,824,653	9.9	90.1	100.0
Slovenia	85,704	731,009	816,713	10.5	89.5	100.0
Germany	4,312,345	36,410,252	40,722,597	10.6	89.4	100.0
Lithuania	140,115	1,146,863	1,286,979*	10.9	89.1	100.0
Romania	859,101	6,635,229	7,494,330	11.5	88.5	100.0
Hungary	535,986	3,595,295	4,131,281	13.0	87.0	100.0
Poland	1,747,606	11,433,336	13,180,943*	13.3	86.7	100.0
Iceland	21,193	128,420	149,613	14.2	85.8	100.0
Belgium	723,891	4,191,376	4,915,267	14.7	85.3	100.0
France	4,218,283	24,415,498	28,633,781	14.7	85.3	100.0
Cyprus	48,555	275,445	324,000	15.0	85.0	100.0
Austria	601,877	3,309,570	3,911,448*	15.4	84.6	100.0
Latvia	134,946	700,730	835,676	16.1	83.9	100.0
Luxembourg	40,613	211,722	252,336*	16.1	83.9	100.0
Portugal	668,408	3,490,922	4,159,330	16.1	83.9	100.0
Estonia	105,211	497,395	602,606	17.5	82.5	100.0
Slovakia	352,528	1,499,531	1,852,059	19.0	81.0	100.0
United Kingdom	5,348,248	22,852,034	28,200,282	19.0	81.0	100.0
Greece	791,762	3,333,501	4,125,263	19.2	80.8	100.0
Croatia	301,944	1,172,705	1,474,649	20.5	79.5	100.0
Totals	27,849,096*	200,320,392*	228,169,487*	12.2	87.8	100.0

*Totals may occasionally show minor discrepancies because fractional weights are used.

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Table C.25: Unweighted samples for 2019, listed by country

	SAL	nonSAL	total	% SAL	% nonSAL	% total
Austria	845	5,138	5,983	14.1	85.9	100.0
Belgium	1,020	5,767	6,787	15.0	85.0	100.0
Bulgaria	581	6,759	7,340	7.9	92.1	100.0
Croatia	1,867	6,012	7,879	23.7	76.3	100.0
Cyprus	687	3,524	4,211	16.3	83.7	100.0
Czech Republic	966	7,741	8,707	11.1	88.9	100.0
Denmark	379	5,438	5,817	6.5	93.5	100.0
Estonia	1,318	4,947	6,265	21.0	79.0	100.0
Finland	608	9,038	9,646	6.3	93.7	100.0
France	1,840	9,897	11,737	15.7	84.3	100.0
Germany	1,469	10,881	12,350	11.9	88.1	100.0
Greece	3,677	14,237	17,914	20.5	79.5	100.0
Hungary	1,139	5,772	6,911	16.5	83.5	100.0
Iceland	-	-	-	-	-	-
Ireland	446	3,737	4,183	10.7	89.3	100.0
Italy	2,007	18,824	20,831	9.6	90.4	100.0
Latvia	860	4,419	5,279	16.3	83.7	100.0
Lithuania	669	4,462	5,131	13.0	87.0	100.0
Luxembourg	554	3,288	3,842	14.4	85.6	100.0
Malta	266	3,519	3,785	7.0	93.0	100.0
Netherlands	845	12,919	13,764	6.1	93.9	100.0
Norway	308	5,771	6,079	5.1	94.9	100.0
Poland	2,823	17,051	19,874	14.2	85.8	100.0
Portugal	2,180	11,390	13,570	16.1	83.9	100.0
Romania	990	6,292	7,282	13.6	86.4	100.0
Serbia	591	4,539	5,130	11.5	88.5	100.0
Slovakia	1,261	4,330	5,591	22.6	77.4	100.0
Slovenia	875	7,715	8,590	10.2	89.8	100.0
Spain	1,193	14,694	15,887	7.5	92.5	100.0
Sweden	212	5,409	5,621	3.8	96.2	100.0
Switzerland	652	6,689	7,341	8.9	91.1	100.0
United Kingdom	-	-	-	-	-	-
Totals	33,128	230,199	263,327	12.6	87.4	100.0

Table C.26: Unweighted samples for 2019, listed by % of SAL Households

	SAL	nonSAL	total	% SAL	% nonSAL	% total
Sweden	212	5,409	5,621	3.8	96.2	100.0
Norway	308	5,771	6,079	5.1	94.9	100.0
Netherlands	845	12,919	13,764	6.1	93.9	100.0
Finland	608	9,038	9,646	6.3	93.7	100.0
Denmark	379	5,438	5,817	6.5	93.5	100.0
Malta	266	3,519	3,785	7.0	93.0	100.0
Spain	1,193	14,694	15,887	7.5	92.5	100.0
Bulgaria	581	6,759	7,340	7.9	92.1	100.0
Switzerland	652	6,689	7,341	8.9	91.1	100.0
Italy	2,007	18,824	20,831	9.6	90.4	100.0
Slovenia	875	7,715	8,590	10.2	89.8	100.0
Ireland	446	3,737	4,183	10.7	89.3	100.0
Czech Republic	966	7,741	8,707	11.1	88.9	100.0
Serbia	591	4,539	5,130	11.5	88.5	100.0
Germany	1,469	10,881	12,350	11.9	88.1	100.0
Lithuania	669	4,462	5,131	13.0	87.0	100.0
Romania	990	6,292	7,282	13.6	86.4	100.0
Austria	845	5,138	5,983	14.1	85.9	100.0
Poland	2,823	17,051	19,874	14.2	85.8	100.0
Luxembourg	554	3,288	3,842	14.4	85.6	100.0
Belgium	1,020	5,767	6,787	15.0	85.0	100.0
France	1,840	9,897	11,737	15.7	84.3	100.0
Portugal	2,180	11,390	13,570	16.1	83.9	100.0
Cyprus	687	3,524	4,211	16.3	83.7	100.0
Latvia	860	4,419	5,279	16.3	83.7	100.0
Hungary	1,139	5,772	6,911	16.5	83.5	100.0
Greece	3,677	14,237	17,914	20.5	79.5	100.0
Estonia	1,318	4,947	6,265	21.0	79.0	100.0
Slovakia	1,261	4,330	5,591	22.6	77.4	100.0
Croatia	1,867	6,012	7,879	23.7	76.3	100.0
Iceland	-	-	-	-	-	-
United Kingdom	-	-	-	-	-	-
Totals	33,128	230,199	263,327	12.6	87.4	100.0

Table C.27: Weighted samples for 2019, listed by country

	SAL	nonSAL	total	% SAL	% nonSAL	% total
Austria	595,113	3,348,451	3,943,564	15.1	84.9	100.0
Belgium	762,465	4,187,953	4,950,418	15.4	84.6	100.0
Bulgaria	175,044	2,751,304	2,926,348	6.0	94.0	100.0
Croatia	310,687	1,163,531	1,474,218	21.1	78.9	100.0
Cyprus	43,595	285,405	329,000	13.3	86.7	100.0
Czech Republic	432,670	4,020,300	4,452,970	9.7	90.3	100.0
Denmark	190,398	2,715,797	2,906,195	6.6	93.4	100.0
Estonia	110,016	507,368	617,384	17.8	82.2	100.0
Finland	228,046	2,520,854	2,748,900	8.3	91.7	100.0
France	4,227,909	24,830,954	29,058,863	14.5	85.5	100.0
Germany	4,327,483	36,452,678	40,780,161	10.6	89.4	100.0
Greece	742,818	3,380,424	4,123,242	18.0	82.0	100.0
Hungary	505,963	3,617,518	4,123,481	12.3	87.7	100.0
Iceland	-	-	-	-	-	-
Ireland	181,859	1,710,623	1,892,482	9.6	90.4	100.0
Italy	2,439,108	23,603,536	26,042,644	9.4	90.6	100.0
Latvia	118,530	723,445	841,975	14.1	85.9	100.0
Lithuania	136,884	1,153,441	1,290,325	10.6	89.4	100.0
Luxembourg	34,254	225,019	259,273	13.2	86.8	100.0
Malta	9,338	187,255	196,593	4.7	95.3	100.0
Netherlands	471,861	7,452,830	7,924,691	6.0	94.0	100.0
Norway	167,872	2,493,568	2,661,440	6.3	93.7	100.0
Poland	1,753,927	11,426,221	13,180,149*	13.3	86.7	100.0
Portugal	627,684	3,544,328	4,172,012	15.0	85.0	100.0
Romania	883,996	6,622,282	7,506,278	11.8	88.2	100.0
Serbia	241,049	2,164,608	2,405,657	10.0	90.0	100.0
Slovakia	354,751	1,497,308	1,852,059	19.2	80.8	100.0
Slovenia	87,314	742,752	830,066	10.5	89.5	100.0
Spain	1,358,021	17,294,413	18,652,434	7.3	92.7	100.0
Sweden	234,339	4,923,853	5,158,193*	4.5	95.5	100.0
Switzerland	372,978	3,473,190	3,846,168	9.7	90.3	100.0
United Kingdom	-	-	-	-	-	-
Totals	22,125,973*	179,021,209	201,147,182	11.0	89.0	100.0

*Totals may occasionally show minor discrepancies because fractional weights are used.

Table C.28: Weighted samples for 2019, listed by % of SAL Households

	SAL	nonSAL	total	% SAL	% nonSAL	% total
Sweden	234,339	4,923,853	5,158,193*	4.5	95.5	100.0
Malta	9,338	187,255	196,593	4.7	95.3	100.0
Bulgaria	175,044	2,751,304	2,926,348	6.0	94.0	100.0
Netherlands	471,861	7,452,830	7,924,691	6.0	94.0	100.0
Norway	167,872	2,493,568	2,661,440	6.3	93.7	100.0
Denmark	190,398	2,715,797	2,906,195	6.6	93.4	100.0
Spain	1,358,021	17,294,413	18,652,434	7.3	92.7	100.0
Finland	228,046	2,520,854	2,748,900	8.3	91.7	100.0
Italy	2,439,108	23,603,536	26,042,644	9.4	90.6	100.0
Ireland	181,859	1,710,623	1,892,482	9.6	90.4	100.0
Czech Republic	432,670	4,020,300	4,452,970	9.7	90.3	100.0
Switzerland	372,978	3,473,190	3,846,168	9.7	90.3	100.0
Serbia	241,049	2,164,608	2,405,657	10.0	90.0	100.0
Slovenia	87,314	742,752	830,066	10.5	89.5	100.0
Germany	4,327,483	36,452,678	40,780,161	10.6	89.4	100.0
Lithuania	136,884	1,153,441	1,290,325	10.6	89.4	100.0
Romania	883,996	6,622,282	7,506,278	11.8	88.2	100.0
Hungary	505,963	3,617,518	4,123,481	12.3	87.7	100.0
Luxembourg	34,254	225,019	259,273	13.2	86.8	100.0
Cyprus	43,595	285,405	329,000	13.3	86.7	100.0
Poland	1,753,927	11,426,221	13,180,149*	13.3	86.7	100.0
Latvia	118,530	723,445	841,975	14.1	85.9	100.0
France	4,227,909	24,830,954	29,058,863	14.5	85.5	100.0
Portugal	627,684	3,544,328	4,172,012	15.0	85.0	100.0
Austria	595,113	3,348,451	3,943,564	15.1	84.9	100.0
Belgium	762,465	4,187,953	4,950,418	15.4	84.6	100.0
Estonia	110,016	507,368	617,384	17.8	82.2	100.0
Greece	742,818	3,380,424	4,123,242	18.0	82.0	100.0
Slovakia	354,751	1,497,308	1,852,059	19.2	80.8	100.0
Croatia	310,687	1,163,531	1,474,218	21.1	78.9	100.0
Iceland	-	-	-	-	-	-
United Kingdom	-	-	-	-	-	-
Totals	22,125,973*	179,021,209	201,147,182	11.0	89.0	100.0

*Totals may occasionally show minor discrepancies because fractional weights are used.

Appendix D. Trends in MDI average scores from 2013 to 2019

D.1 MDI scores mean differences for SAL and nonSAL households

Table D.1: Independent samples t-test for equality of means, MDI difference between SAL and nonSAL households (points), 2013

	MDI difference (points)		99% confidence intervals	
	SAL - nonSAL	significance	lower	upper
Austria	6.0	0.000	6.0	6.1
Belgium	7.8	0.000	7.7	7.8
Bulgaria	10.3	0.000	10.2	10.4
Croatia	8.8	0.000	8.7	8.9
Cyprus	9.7	0.000	9.5	9.9
Czech Republic	6.1	0.000	6.1	6.2
Denmark	6.6	0.000	6.5	6.6
Estonia	9.1	0.000	9.0	9.3
Finland	4.5	0.000	4.5	4.6
France	6.9	0.000	6.9	6.9
Germany	9.7	0.000	9.6	9.7
Greece	6.4	0.000	6.4	6.5
Hungary	8.8	0.000	8.8	8.9
Iceland	10.0	0.000	9.6	10.3
Ireland	6.5	0.000	6.3	6.6
Italy	8.2	0.000	8.2	8.3
Latvia	11.0	0.000	10.9	11.2
Lithuania	9.1	0.000	9.0	9.2
Luxembourg	5.1	0.000	4.9	5.4
Malta	7.6	< 0.001	7.1	8.1
Netherlands	9.4	0.000	9.3	9.4
Norway	7.9	0.000	7.8	8.0
Poland	8.4	0.000	8.3	8.4
Portugal	9.2	0.000	9.1	9.2
Romania	13.1	0.000	13.1	13.2
Serbia	11.0	0.000	10.9	11.2
Slovakia	6.7	0.000	6.6	6.7
Slovenia	7.2	0.000	7.1	7.3
Spain	5.9	0.000	5.9	6.0
Sweden	6.1	0.000	6.0	6.1
Switzerland	6.3	0.000	6.2	6.3
United Kingdom	8.5	0.000	8.5	8.6

Table D.2: Independent samples t-test for equality of means, MDI difference between SAL and nonSAL households (points), 2014

	MDI difference (points)		99% confidence intervals	
	SAL - nonSAL	significance	lower	upper
Austria	6.7	0.000	6.6	6.7
Belgium	9.3	0.000	9.2	9.3
Bulgaria	10.8	0.000	10.6	10.9
Croatia	8.1	0.000	8.0	8.2
Cyprus	7.8	0.000	7.5	8.0
Czech Republic	8.1	0.000	8.0	8.2
Denmark	10.8	0.000	10.7	11.0
Estonia	9.9	0.000	9.8	10.1
Finland	4.0	0.000	3.9	4.0
France	6.5	0.000	6.5	6.5
Germany	9.6	0.000	9.5	9.6
Greece	6.7	0.000	6.6	6.8
Hungary	9.5	0.000	9.5	9.6
Iceland	10.1	0.000	9.7	10.5
Ireland	7.8	0.000	7.7	8.0
Italy	8.1	0.000	8.1	8.2
Latvia	10.3	0.000	10.1	10.4
Lithuania	8.3	0.000	8.2	8.4
Luxembourg	5.7	0.000	5.5	6.0
Malta	9.5	0.000	8.9	10.0
Netherlands	9.4	0.000	9.4	9.5
Norway	6.1	0.000	6.0	6.2
Poland	8.9	0.000	8.9	9.0
Portugal	10.0	0.000	10.0	10.1
Romania	12.8	0.000	12.7	12.8
Serbia	8.1	0.000	8.0	8.2
Slovakia	6.3	0.000	6.3	6.4
Slovenia	10.9	0.000	10.7	11.1
Spain	5.2	0.000	5.2	5.3
Sweden	8.4	0.000	8.3	8.5
Switzerland	6.9	0.000	6.8	7.0
United Kingdom	8.9	0.000	8.9	9.0

Table D.3: Independent samples t-test for equality of means, MDI difference between SAL and nonSAL households (points), 2015

	MDI difference (points)		99% confidence intervals	
	SAL - nonSAL	significance	lower	upper
Austria	6.1	0.000	6.0	6.1
Belgium	9.2	0.000	9.2	9.3
Bulgaria	9.8	0.000	9.7	9.9
Croatia	8.8	0.000	8.7	8.9
Cyprus	6.4	0.000	6.2	6.6
Czech Republic	8.3	0.000	8.3	8.4
Denmark	9.8	0.000	9.7	9.9
Estonia	9.6	0.000	9.4	9.7
Finland	6.6	0.000	6.5	6.6
France	6.2	0.000	6.2	6.2
Germany	10.1	0.000	10.0	10.1
Greece	7.3	0.000	7.2	7.3
Hungary	9.9	0.000	9.8	9.9
Iceland	8.8	0.000	8.4	9.1
Ireland	10.9	0.000	10.8	11.0
Italy	7.3	0.000	7.3	7.3
Latvia	11.7	0.000	11.5	11.8
Lithuania	9.0	0.000	8.9	9.1
Luxembourg	6.4	0.000	6.1	6.6
Malta	9.3	0.000	8.7	9.8
Netherlands	11.8	0.000	11.7	11.8
Norway	7.6	0.000	7.5	7.7
Poland	8.5	0.000	8.5	8.6
Portugal	8.6	0.000	8.6	8.7
Romania	12.0	0.000	12.0	12.1
Serbia	12.3	0.000	12.2	12.4
Slovakia	8.5	0.000	8.5	8.6
Slovenia	10.0	0.000	9.8	10.1
Spain	5.2	0.000	5.2	5.3
Sweden	9.4	0.000	9.3	9.5
Switzerland	8.6	0.000	8.5	8.7
United Kingdom	7.9	0.000	7.8	7.9

Table D.4: Independent samples t-test for equality of means, MDI difference between SAL and nonSAL households (points), 2016

	MDI difference (points)		99% confidence intervals	
	SAL – nonSAL	significance	lower	upper
Austria	6.8	0.000	6.8	6.9
Belgium	9.5	0.000	9.4	9.5
Bulgaria	9.7	0.000	9.6	9.8
Croatia	9.5	0.000	9.4	9.5
Cyprus	6.8	0.000	6.5	7.0
Czech Republic	7.7	0.000	7.6	7.7
Denmark	10.9	0.000	10.8	11.0
Estonia	7.8	0.000	7.7	8.0
Finland	7.4	0.000	7.3	7.5
France	5.6	0.000	5.6	5.6
Germany	9.0	0.000	9.0	9.1
Greece	5.7	0.000	5.7	5.8
Hungary	10.0	0.000	9.9	10.1
Iceland	9.5	0.000	9.3	9.8
Ireland	9.7	0.000	9.6	9.8
Italy	8.2	0.000	8.1	8.2
Latvia	12.8	0.000	12.7	13.0
Lithuania	9.7	0.000	9.5	9.8
Luxembourg	5.8	0.000	5.6	6.0
Malta	9.1	0.000	8.6	9.5
Netherlands	10.6	0.000	10.5	10.6
Norway	5.8	0.000	5.7	5.9
Poland	8.1	0.000	8.0	8.1
Portugal	9.7	0.000	9.6	9.8
Romania	13.3	0.000	13.2	13.3
Serbia	6.2	0.000	6.2	6.3
Slovakia	8.3	0.000	8.2	8.3
Slovenia	10.3	0.000	10.2	10.5
Spain	7.1	0.000	7.1	7.1
Sweden	6.2	0.000	6.1	6.3
Switzerland	7.8	0.000	7.7	7.9
United Kingdom	8.3	0.000	8.3	8.4

Table D.5: Independent samples t-test for equality of means, MDI difference between SAL and nonSAL households (points), 2017

	MDI difference (points)		99% confidence intervals	
	SAL – nonSAL	significance	lower	upper
Austria	6.9	0.000	6.8	6.9
Belgium	7.9	0.000	7.8	8.0
Bulgaria	10.7	0.000	10.6	10.8
Croatia	10.0	0.000	9.9	10.1
Cyprus	5.8	0.000	5.6	6.0
Czech Republic	7.7	0.000	7.7	7.8
Denmark	7.6	0.000	7.5	7.7
Estonia	9.8	0.000	9.6	9.9
Finland	6.2	0.000	6.1	6.3
France	5.1	0.000	5.1	5.2
Germany	8.7	0.000	8.6	8.7
Greece	7.0	0.000	6.9	7.0
Hungary	9.0	0.000	8.9	9.0
Iceland	8.8	0.000	8.5	9.0
Ireland	9.8	0.000	9.7	9.9
Italy	7.5	0.000	7.4	7.5
Latvia	11.0	0.000	10.8	11.1
Lithuania	13.4	0.000	13.2	13.5
Luxembourg	5.1	0.000	4.9	5.3
Malta	5.4	< 0.001	5.0	5.9
Netherlands	10.8	0.000	10.8	10.9
Norway	7.2	0.000	7.1	7.3
Poland	7.3	0.000	7.3	7.3
Portugal	10.1	0.000	10.0	10.1
Romania	13.2	0.000	13.1	13.2
Serbia	11.6	0.000	11.5	11.7
Slovakia	8.2	0.000	8.2	8.3
Slovenia	11.8	0.000	11.7	12.0
Spain	9.1	0.000	9.1	9.1
Sweden	7.3	0.000	7.3	7.4
Switzerland	6.8	0.000	6.7	6.9
United Kingdom	7.3	0.000	7.3	7.3

Table D.6: Independent samples t-test for equality of means, MDI difference between SAL and nonSAL households (points), 2018

	MDI difference (points)		99% confidence intervals	
	SAL – nonSAL	significance	lower	upper
Austria	7.0	0.000	7.0	7.1
Belgium	8.1	0.000	8.0	8.2
Bulgaria	9.7	0.000	9.6	9.9
Croatia	9.7	0.000	9.6	9.8
Cyprus	7.4	0.000	7.2	7.6
Czech Republic	8.2	0.000	8.1	8.2
Denmark	11.7	0.000	11.6	11.8
Estonia	9.8	0.000	9.7	9.9
Finland	7.1	0.000	7.0	7.2
France	6.9	0.000	6.8	6.9
Germany	8.7	0.000	8.7	8.7
Greece	6.5	0.000	6.4	6.6
Hungary	10.2	0.000	10.1	10.3
Iceland	7.7	0.000	7.5	8.0
Ireland	9.1	0.000	8.9	9.2
Italy	6.1	0.000	6.0	6.1
Latvia	13.3	0.000	13.2	13.4
Lithuania	12.4	0.000	12.2	12.5
Luxembourg	5.8	0.000	5.6	6.0
Malta	6.8	< 0.001	6.4	7.3
Netherlands	11.0	0.000	10.9	11.0
Norway	8.6	0.000	8.5	8.7
Poland	7.7	0.000	7.7	7.8
Portugal	9.0	0.000	8.9	9.1
Romania	13.9	0.000	13.9	14.0
Serbia	11.7	0.000	11.6	11.9
Slovakia	8.9	0.000	8.8	9.0
Slovenia	12.5	0.000	12.4	12.7
Spain	8.1	0.000	8.1	8.2
Sweden	6.5	0.000	6.4	6.5
Switzerland	9.2	0.000	9.2	9.3
United Kingdom	8.2	0.000	8.2	8.2

Table D.7: Independent samples t-test for equality of means, MDI difference between SAL and nonSAL households (points), 2019

	MDI difference (points)		99% confidence intervals	
	SAL – nonSAL	significance	lower	upper
Austria	6.9	0.000	6.8	6.9
Belgium	9.2	0.000	9.2	9.3
Bulgaria	11.5	0.000	11.4	11.7
Croatia	8.8	0.000	8.7	8.8
Cyprus	6.7	0.000	6.5	6.8
Czech Republic	7.8	0.000	7.7	7.8
Denmark	9.6	0.000	9.5	9.7
Estonia	8.7	0.000	8.5	8.8
Finland	5.4	0.000	5.4	5.5
France	6.9	0.000	6.9	6.9
Germany	8.9	0.000	8.9	8.9
Greece	6.8	0.000	6.8	6.9
Hungary	10.6	0.000	10.5	10.6
Iceland	-	-	-	-
Ireland	9.4	0.000	9.3	9.5
Italy	7.4	0.000	7.3	7.4
Latvia	11.0	0.000	10.9	11.2
Lithuania	9.3	0.000	9.1	9.4
Luxembourg	4.4	0.000	4.2	4.6
Malta	9.7	0.000	9.2	10.2
Netherlands	9.6	0.000	9.6	9.7
Norway	7.8	0.000	7.6	7.9
Poland	7.4	0.000	7.4	7.5
Portugal	9.2	0.000	9.1	9.3
Romania	14.5	0.000	14.4	14.5
Serbia	12.5	0.000	12.4	12.6
Slovakia	7.8	0.000	7.7	7.9
Slovenia	9.8	0.000	9.7	10.0
Spain	9.9	0.000	9.9	10.0
Sweden	5.1	0.000	5.1	5.2
Switzerland	7.4	0.000	7.3	7.4
United Kingdom	-	-	-	-

D.2 Country trends in MDI scores SAL and nonSAL households

D.2.1 Austria

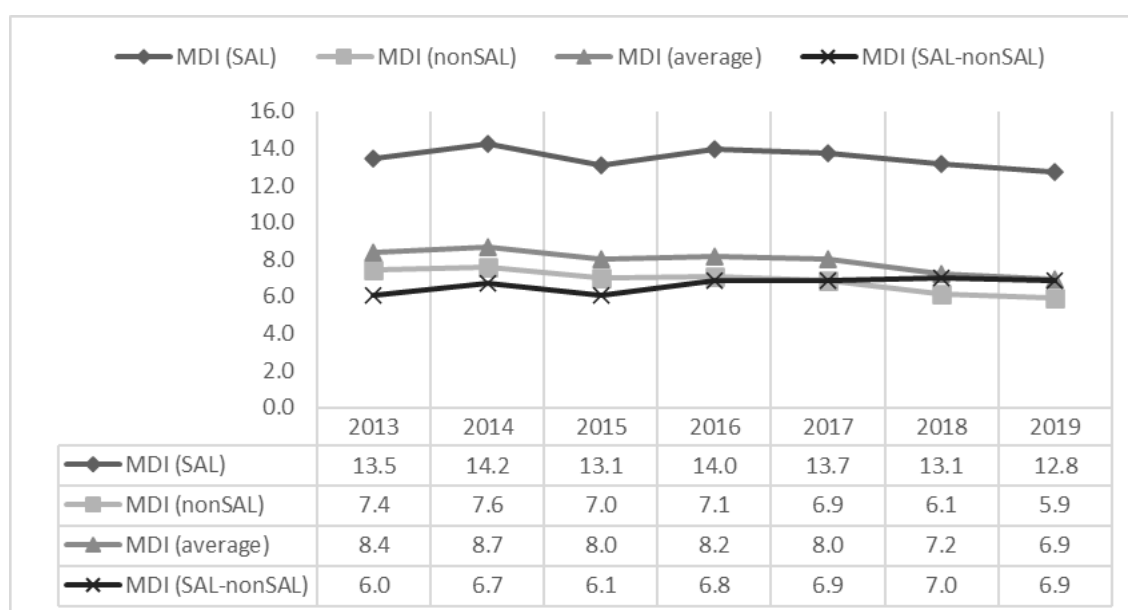


Figure D.1: Trends in MDI average scores for SAL, nonSAL and all households, and difference in SAL and nonSAL households MDI average score for Austria from 2013-2019 (points)

D.2.2 Belgium

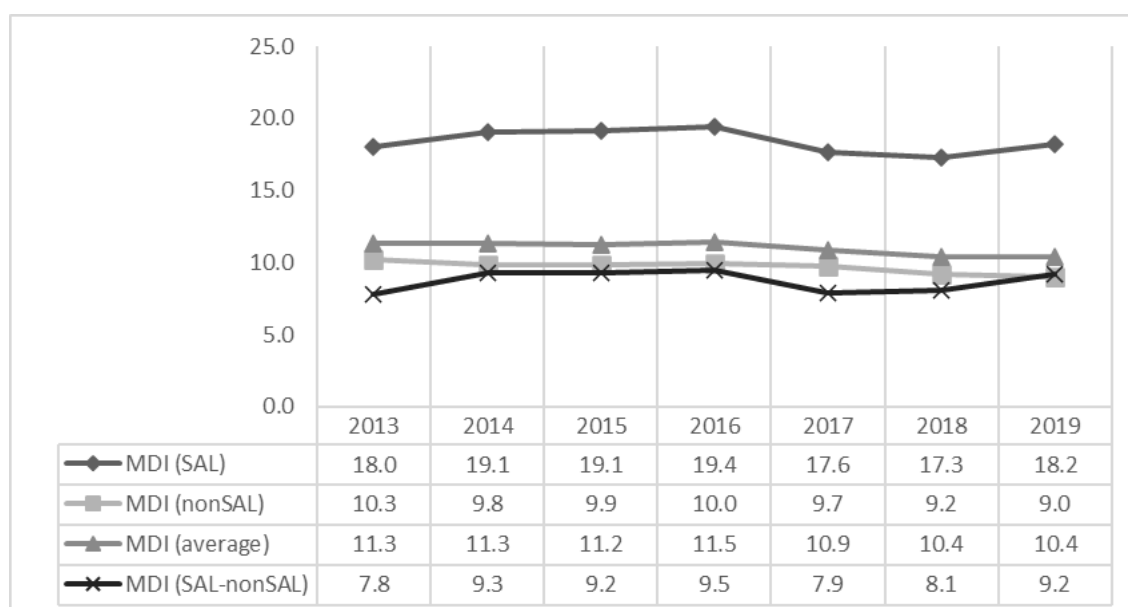


Figure D.2: Trends in MDI average scores for SAL, nonSAL and all households, and difference in SAL and nonSAL households MDI average score for Belgium from 2013-2019 (points)

D.2.3 Bulgaria

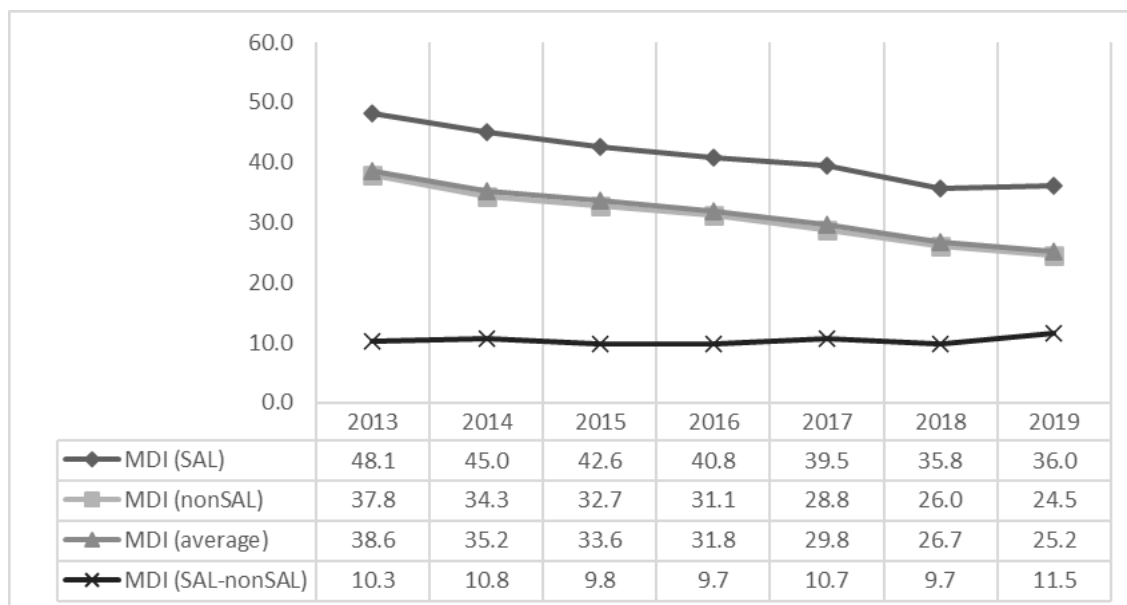


Figure D.3: Trends in MDI average scores for SAL, nonSAL and all households, and difference in SAL and nonSAL households MDI average score for Bulgaria from 2013-2019 (points)

D.2.4 Croatia

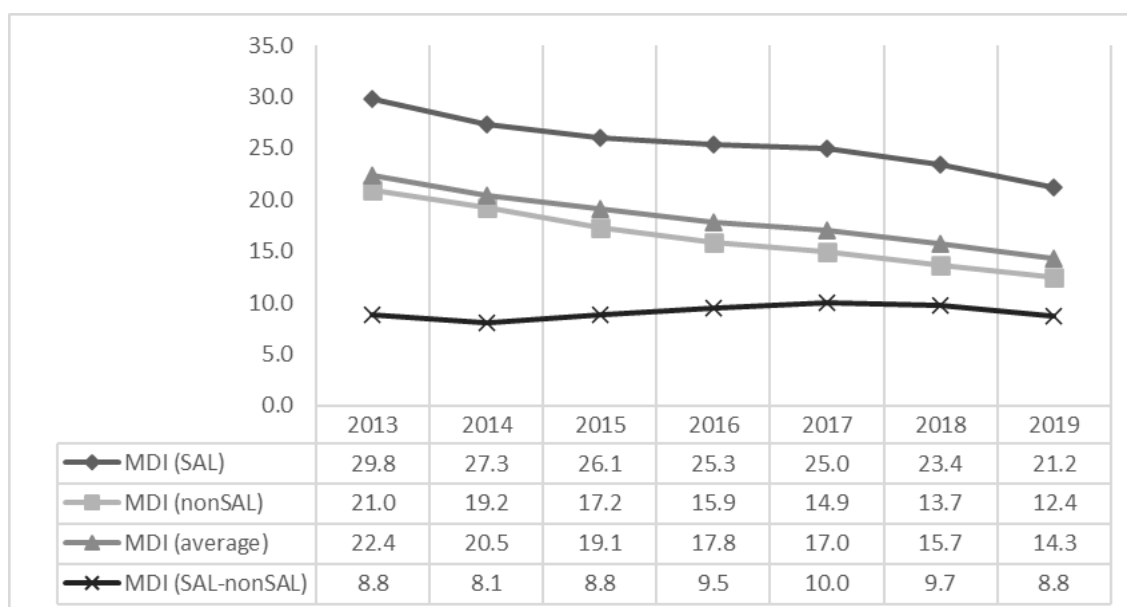


Figure D.4: Trends in MDI average scores for SAL, nonSAL and all households, and difference in SAL and nonSAL households MDI average score for Croatia from 2013-2019 (points)

D.2.5 Cyprus

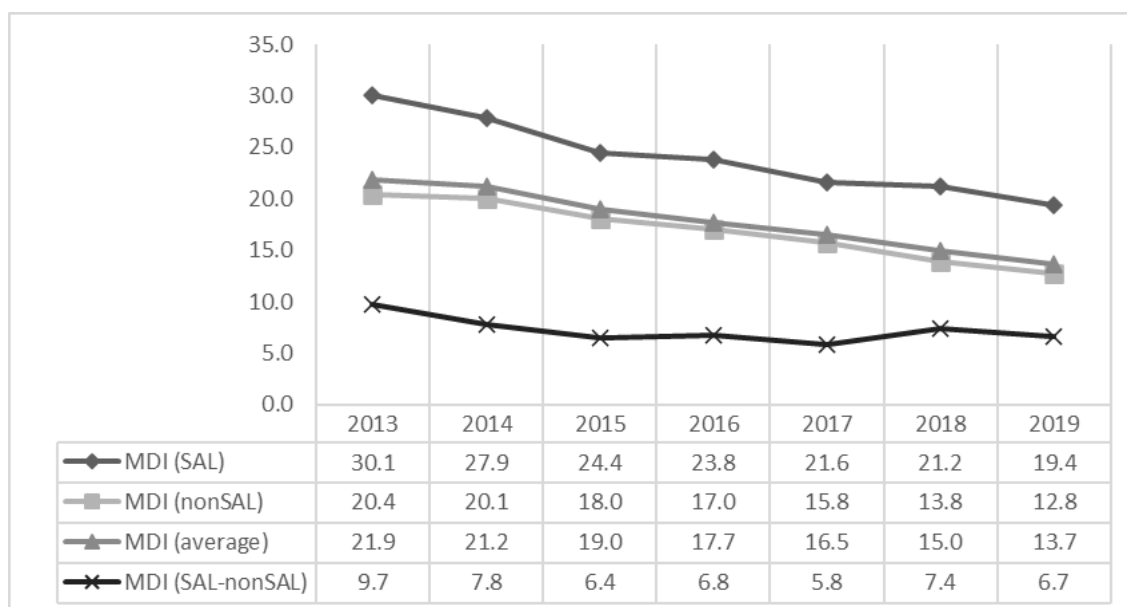


Figure D.5: Trends in MDI average scores for SAL, nonSAL and all households, and difference in SAL and nonSAL households MDI average score for Cyprus from 2013-2019 (points)

D.2.6 Czech Republic

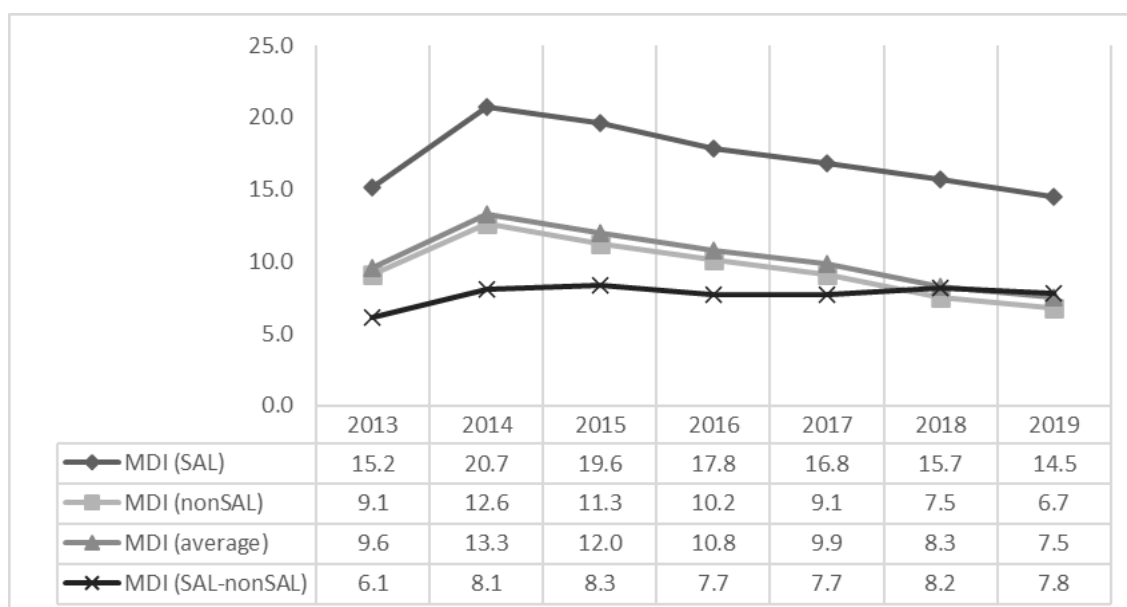


Figure D.6: Trends in MDI average scores for SAL, nonSAL and all households, and difference in SAL and nonSAL households MDI average score for Czech Republic from 2013-2019 (points)

D.2.7 Denmark

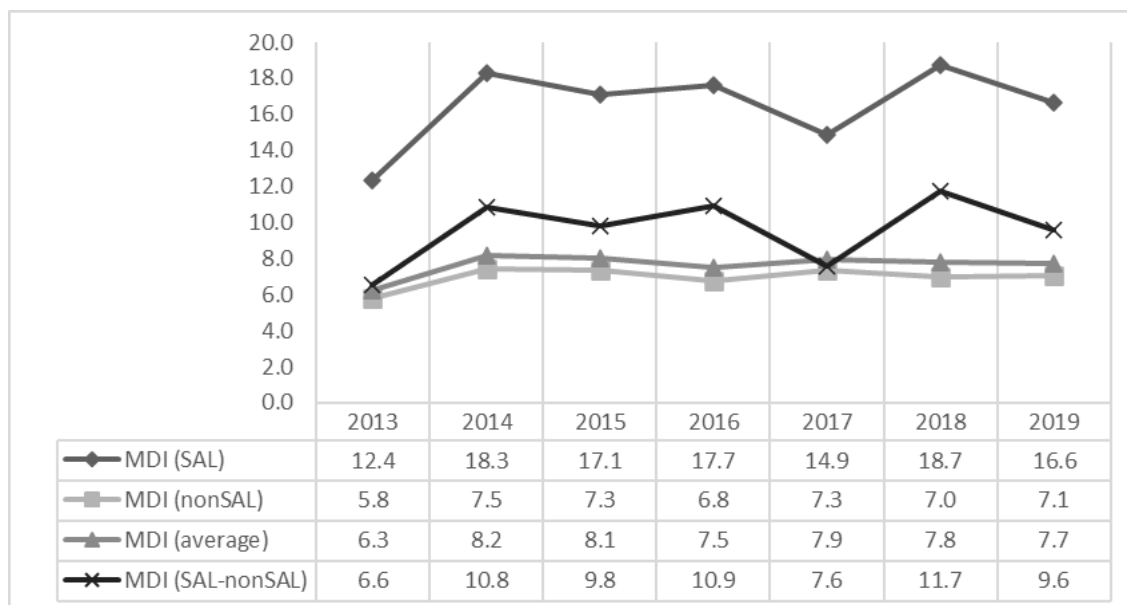


Figure D.7: Trends in MDI average scores for SAL, nonSAL and all households, and difference in SAL and nonSAL households MDI average score for Denmark from 2013-2019 (points)

D.2.8 Estonia

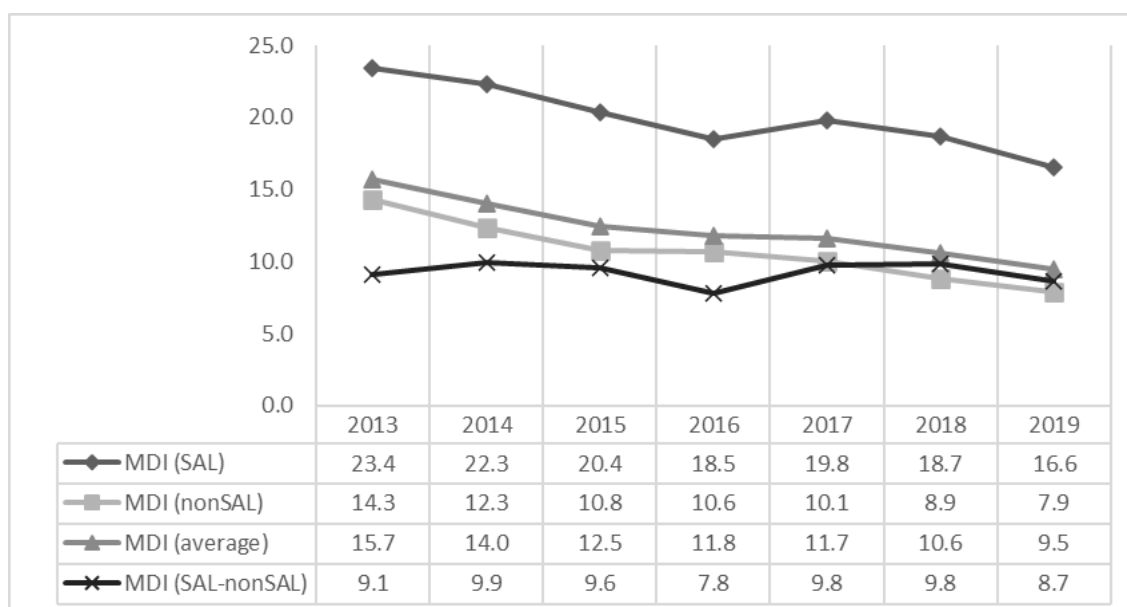


Figure D.8: Trends in MDI average scores for SAL, nonSAL and all households, and difference in SAL and nonSAL households MDI average score for Estonia from 2013-2019 (points)

D.2.9 Finland

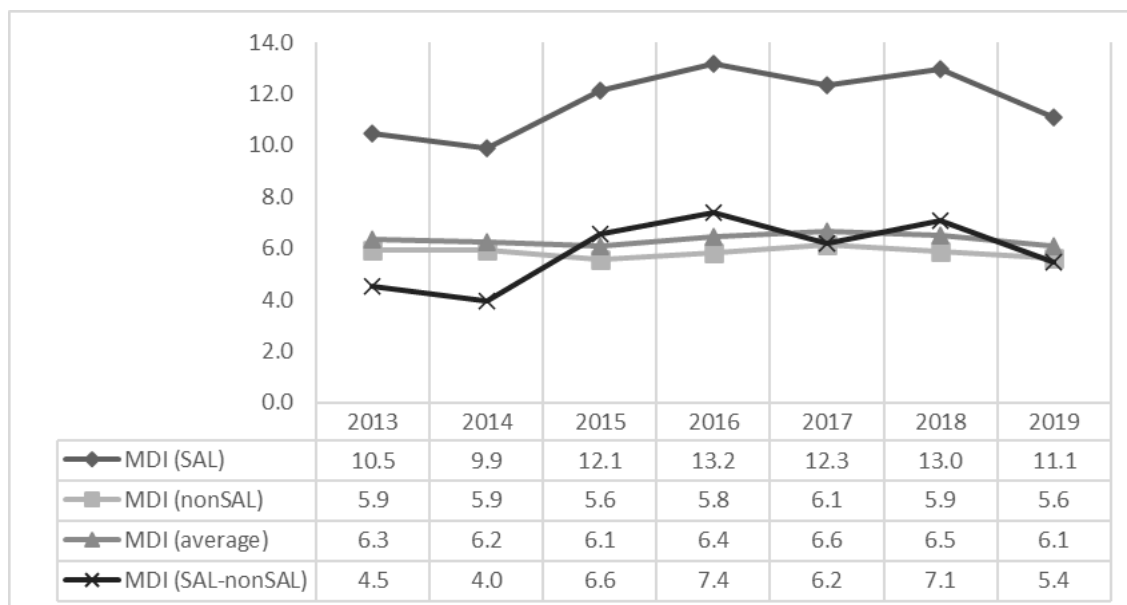


Figure D.9: Trends in MDI average scores for SAL, nonSAL and all households, and difference in SAL and nonSAL households MDI average score for Finland from 2013-2019 (points)

D.2.10 France

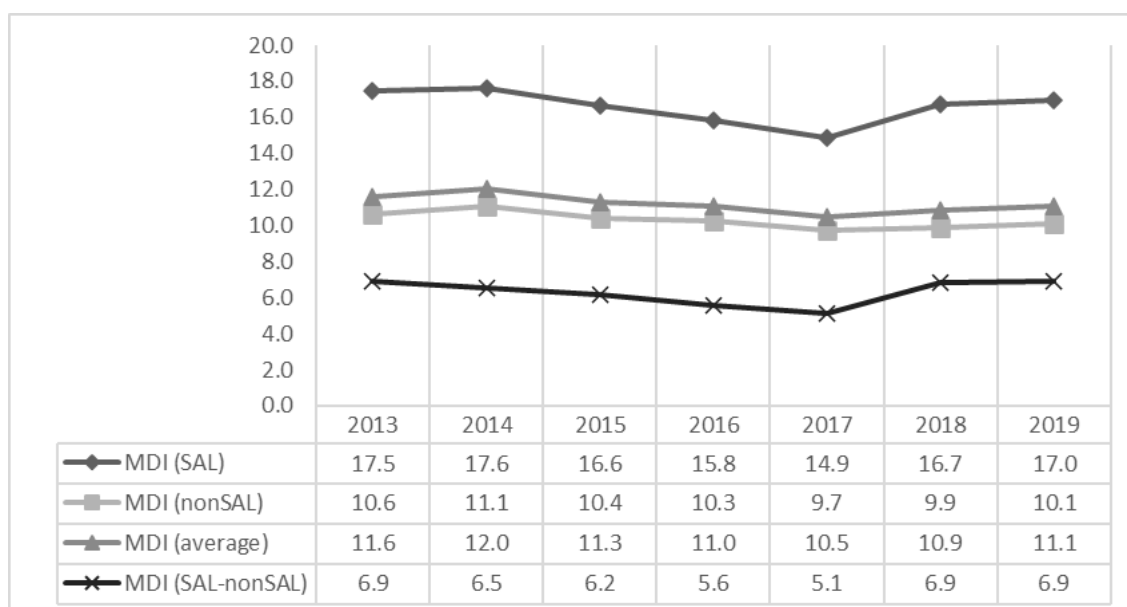


Figure D.10: Trends in MDI average scores for SAL, nonSAL and all households, and difference in SAL and nonSAL households MDI average score for France from 2013-2019 (points)

D.2.11 Germany

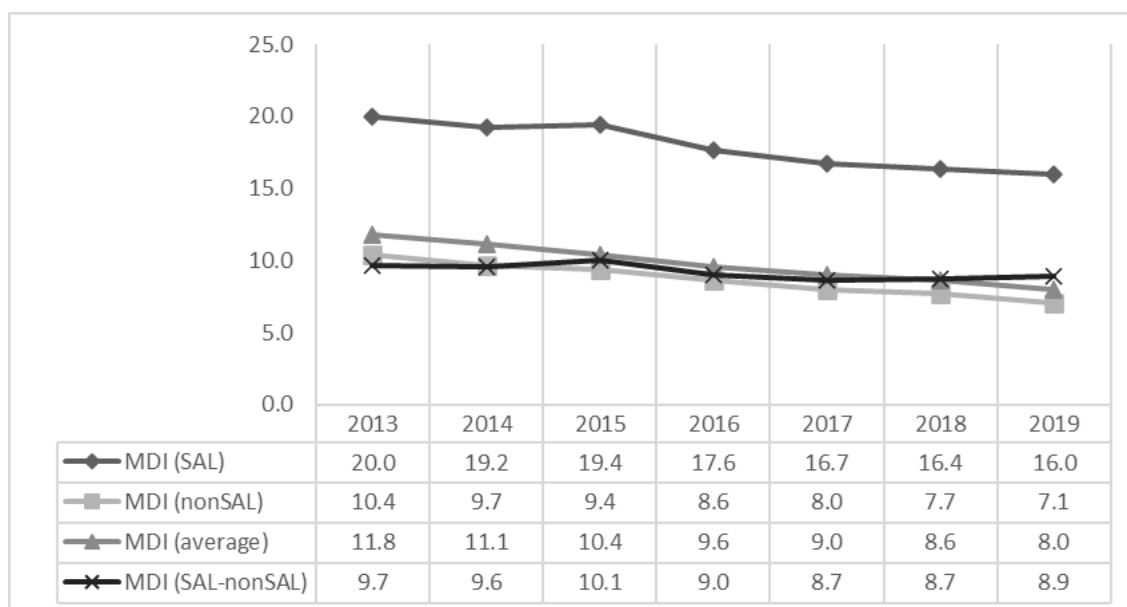


Figure D.11: Trends in MDI average scores for SAL, nonSAL and all households, and difference in SAL and nonSAL households MDI average score for Germany from 2013-2019 (points)

D.2.12 Greece

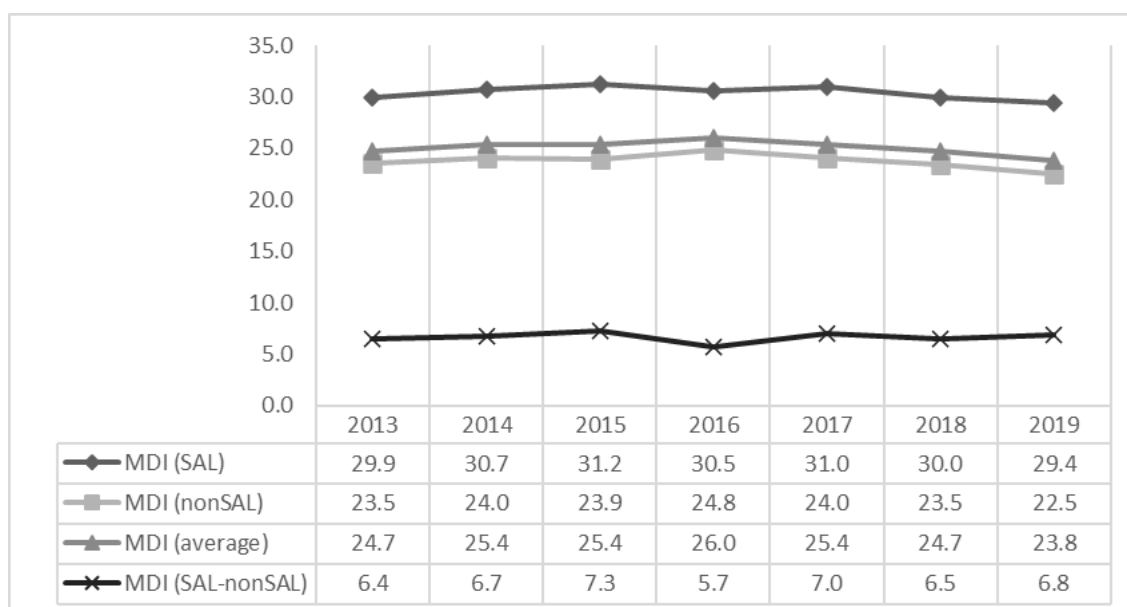


Figure D.12: Trends in MDI average scores for SAL, nonSAL and all households, and difference in SAL and nonSAL households MDI average score for Greece from 2013-2019 (points)

D.2.13 Hungary

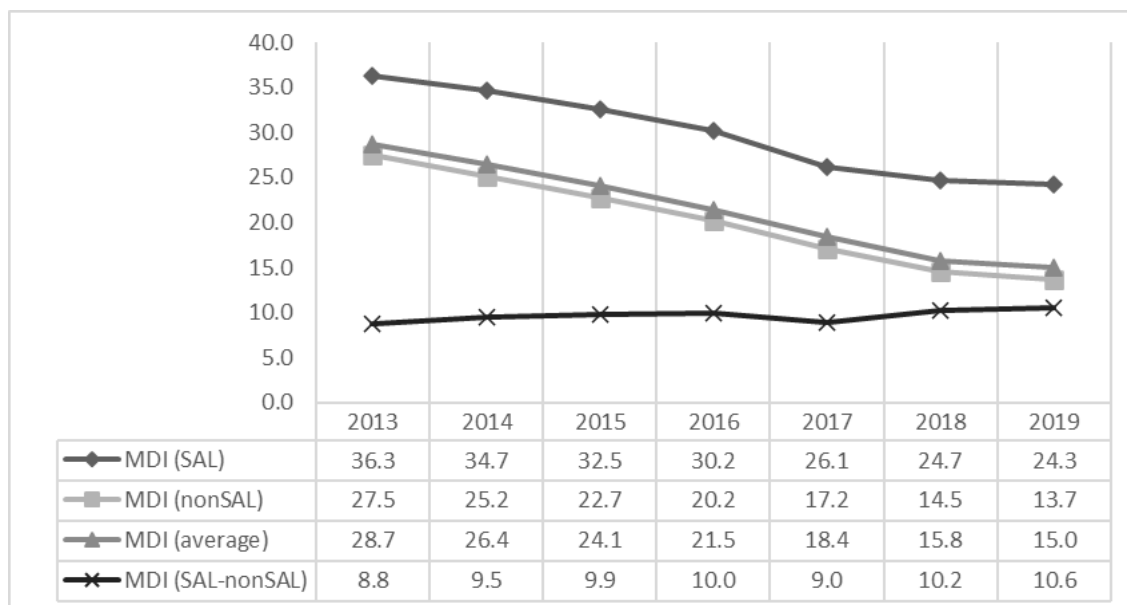


Figure D.13: Trends in MDI average scores for SAL, nonSAL and all households, and difference in SAL and nonSAL households MDI average score for Hungary from 2013-2019 (points)

D.2.14 Iceland

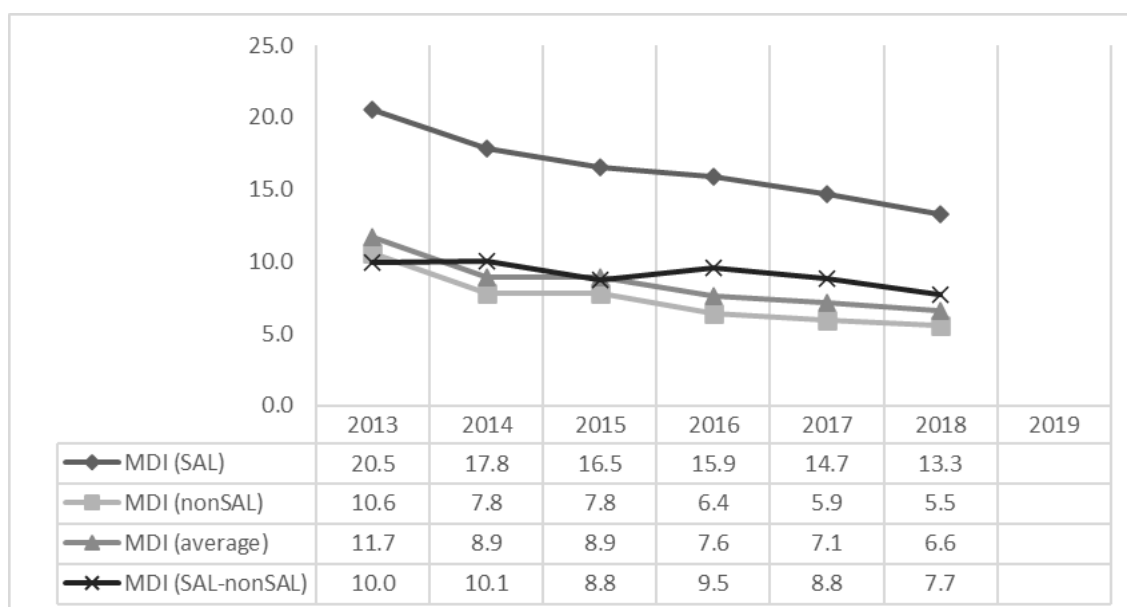


Figure D.14: Trends in MDI average scores for SAL, nonSAL and all households, and difference in SAL and nonSAL households MDI average score for Iceland from 2013-2018 (points)

D.2.15 Ireland

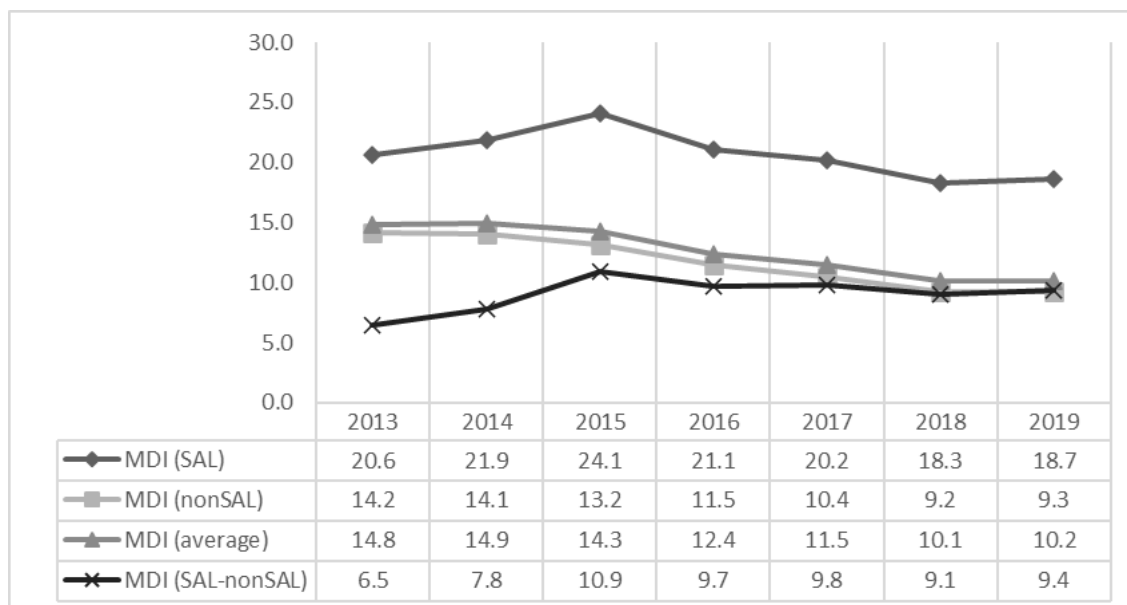


Figure D.15: Trends in MDI average scores for SAL, nonSAL and all households, and difference in SAL and nonSAL households MDI average score for Ireland from 2013-2019 (points)

D.2.16 Italy

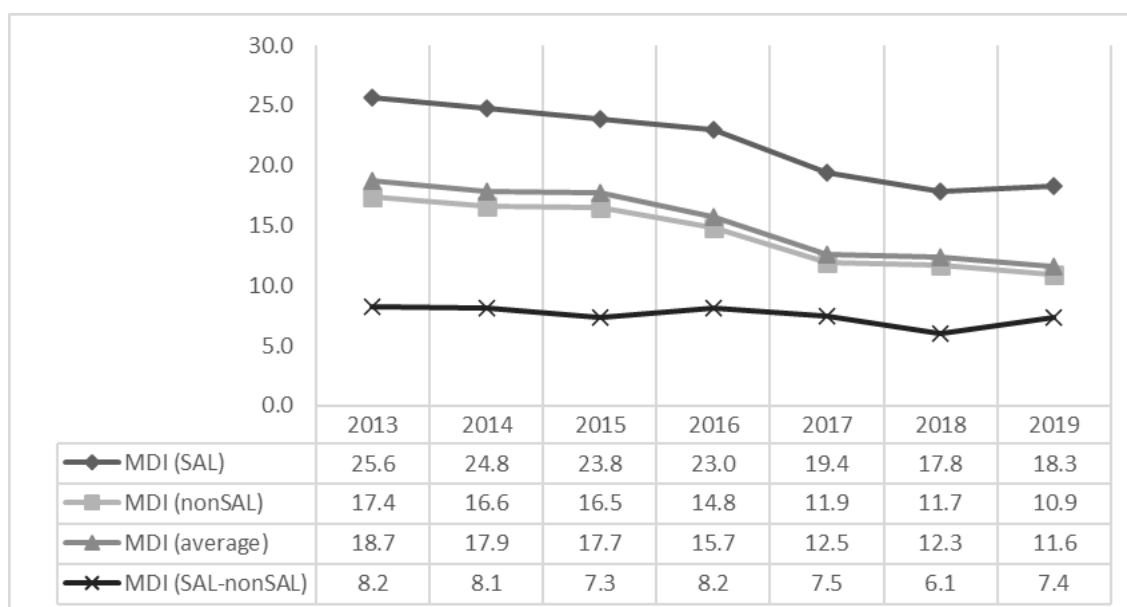


Figure D.16: Trends in MDI average scores for SAL, nonSAL and all households, and difference in SAL and nonSAL households MDI average score for Italy from 2013-2019 (points)

D.2.17 Latvia

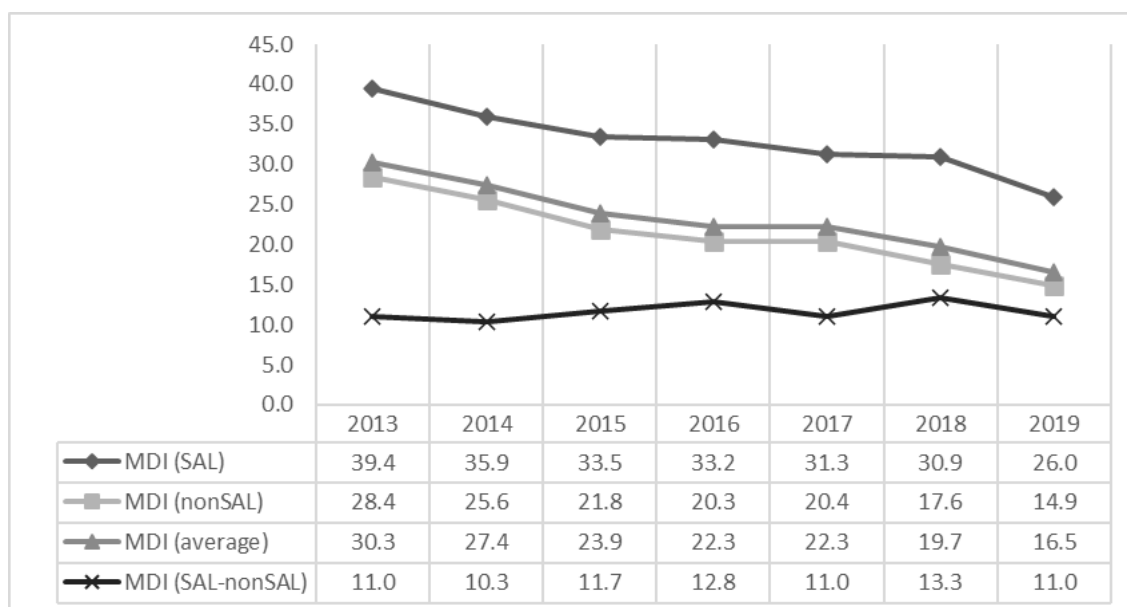


Figure D.17: Trends in MDI average scores for SAL, nonSAL and all households, and difference in SAL and nonSAL households MDI average score for Latvia from 2013-2019 (points)

D.2.18 Lithuania

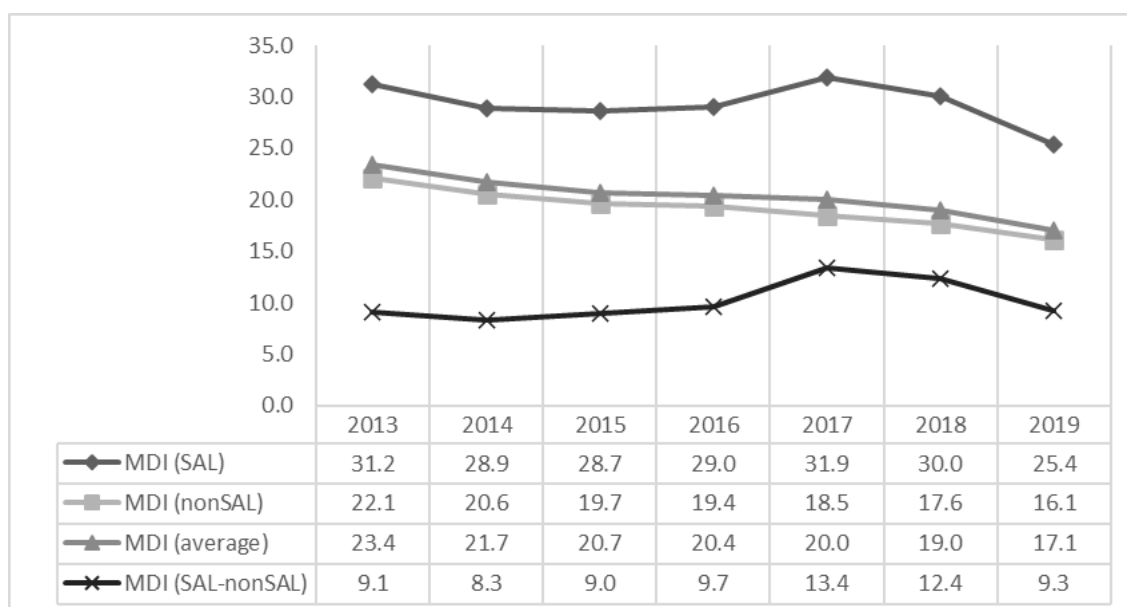


Figure D.18: Trends in MDI average scores for SAL, nonSAL and all households, and difference in SAL and nonSAL households MDI average score for Lithuania from 2013-2019 (points)

D.2.19 Luxembourg

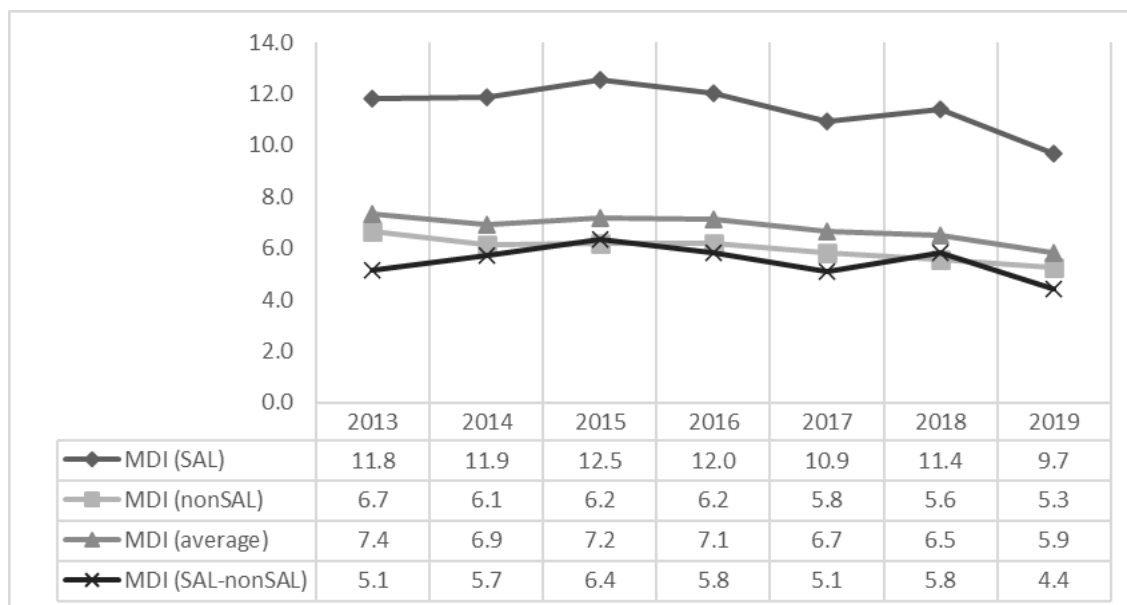


Figure D.19: Trends in MDI average scores for SAL, nonSAL and all households, and difference in SAL and nonSAL households MDI average score for Luxembourg from 2013-2019 (points)

D.2.20 Malta

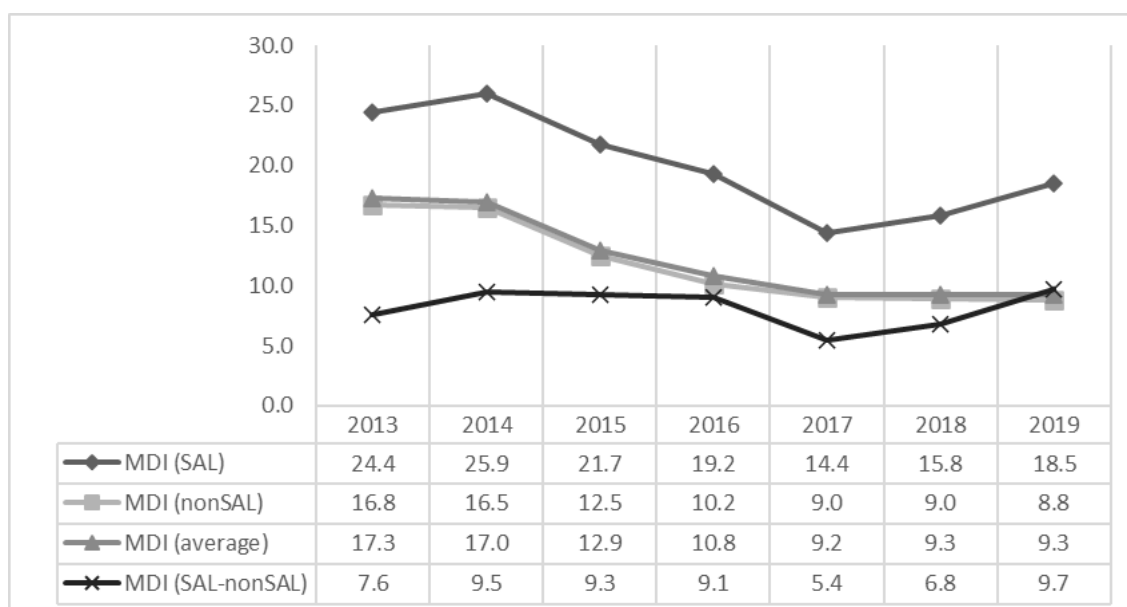


Figure D.20: Trends in MDI average scores for SAL, nonSAL and all households, and difference in SAL and nonSAL households MDI average score for Malta from 2013-2019 (points)

D.2.21 Netherlands

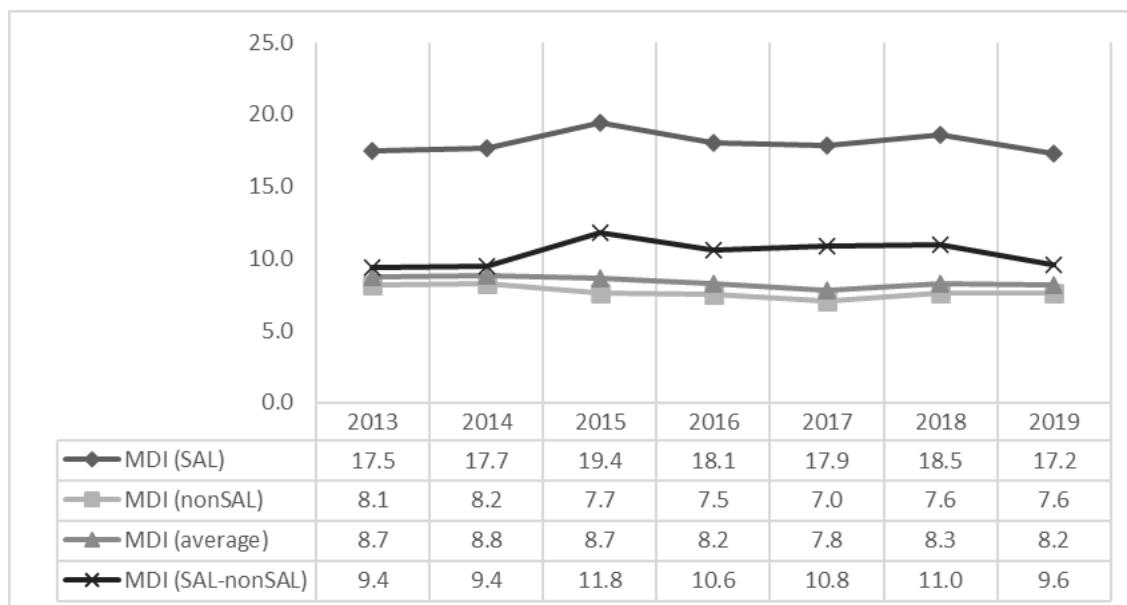


Figure D.21: Trends in MDI average scores for SAL, nonSAL and all households, and difference in SAL and nonSAL households MDI average score for Netherlands from 2013-2019 (points)

D.2.22 Norway

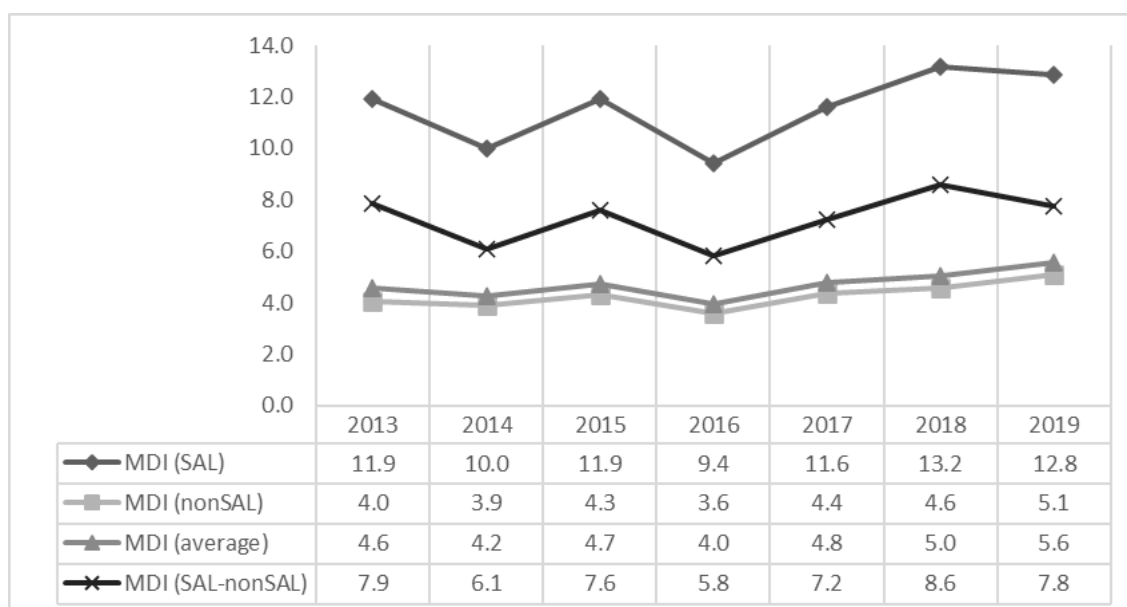


Figure D.22: Trends in MDI average scores for SAL, nonSAL and all households, and difference in SAL and nonSAL households MDI average score for Norway from 2013-2019 (points)

D.2.23 Poland

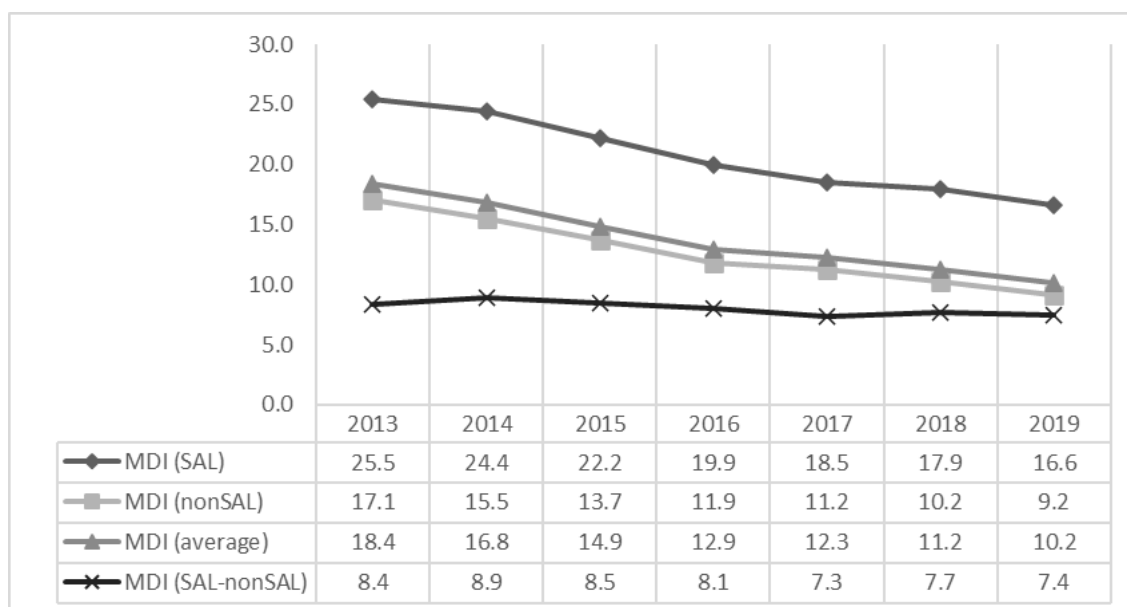


Figure D.23: Trends in MDI average scores for SAL, nonSAL and all households, and difference in SAL and nonSAL households MDI average score for Poland from 2013-2019 (points)

D.2.24 Portugal

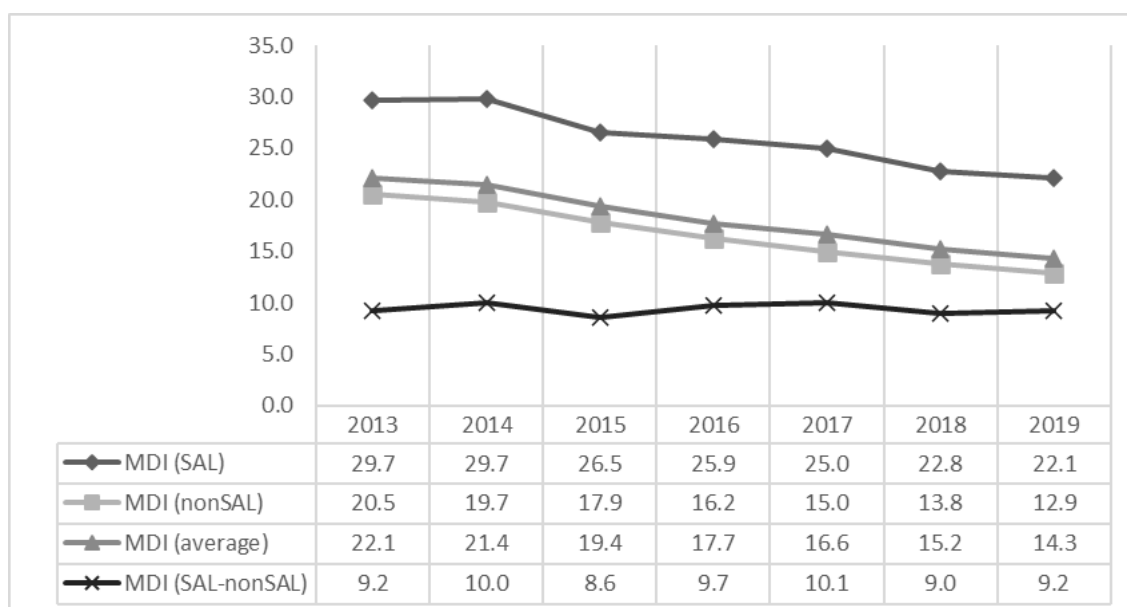


Figure D.24: Trends in MDI average scores for SAL, nonSAL and all households, and difference in SAL and nonSAL households MDI average score for Portugal from 2013-2019 (points)

D.2.25 Romania

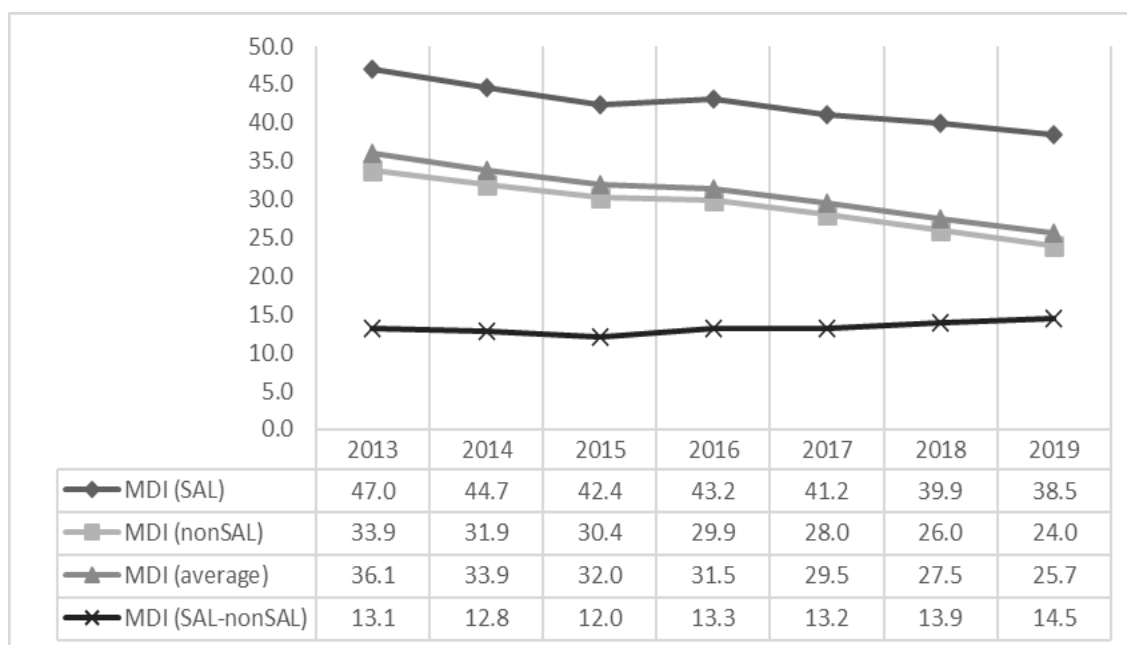


Figure D.25: Trends in MDI average scores for SAL, nonSAL and all households, and difference in SAL and nonSAL households MDI average score for Romania from 2013-2019 (points)

D.2.26 Serbia

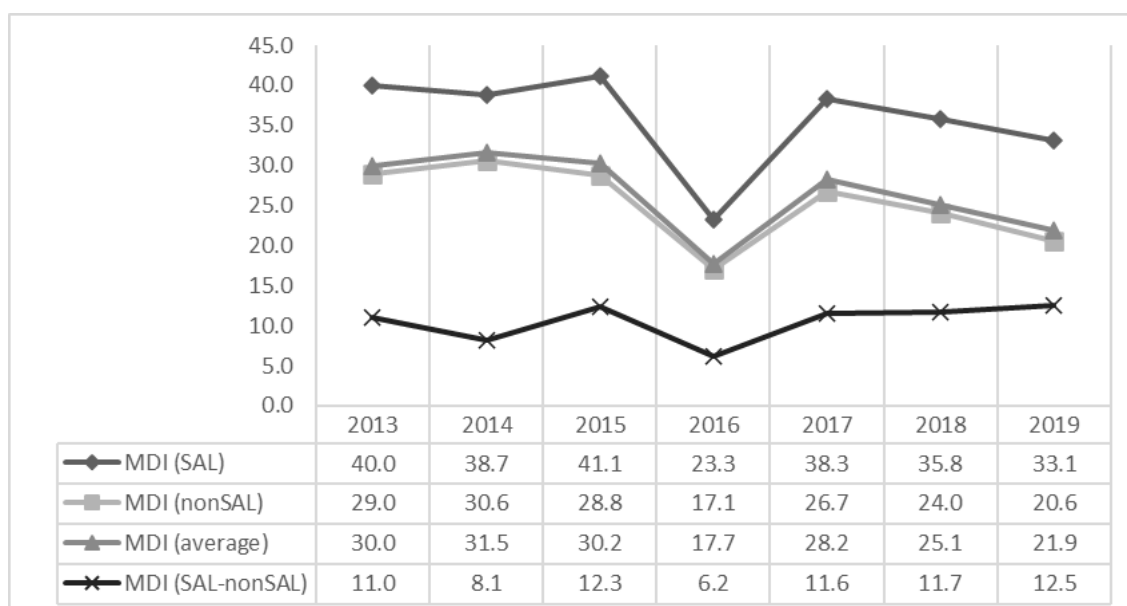


Figure D.26: Trends in MDI average scores for SAL, nonSAL and all households, and difference in SAL and nonSAL households MDI average score for Serbia from 2013-2019 (points)

D.2.27 Slovakia

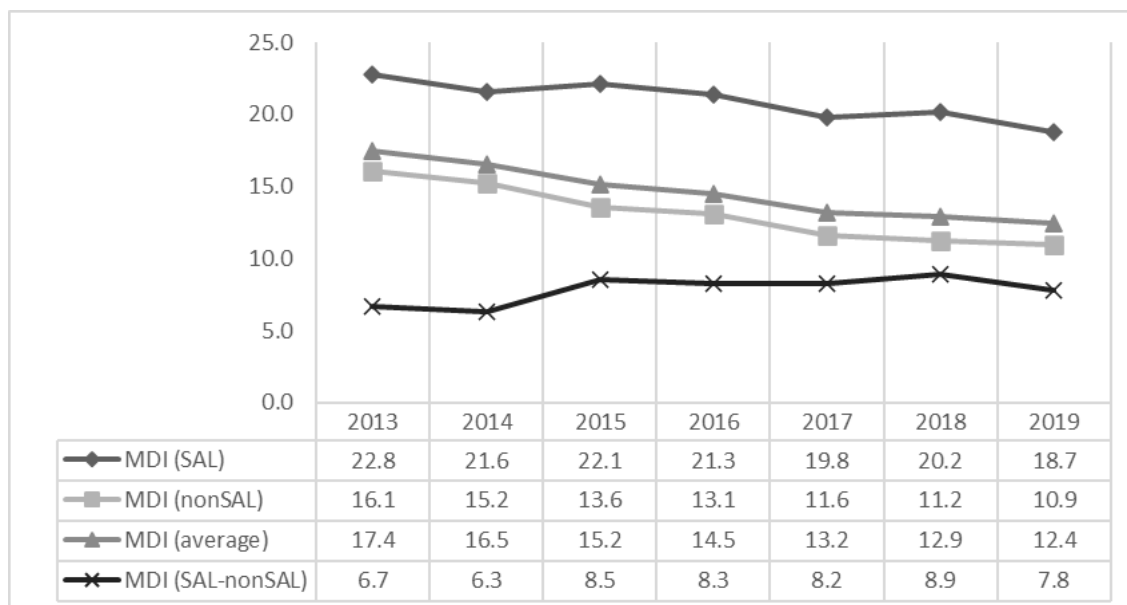


Figure D.27: Trends in MDI average scores for SAL, nonSAL and all households, and difference in SAL and nonSAL households MDI average score for Slovakia from 2013-2019 (points)

D.2.28 Slovenia

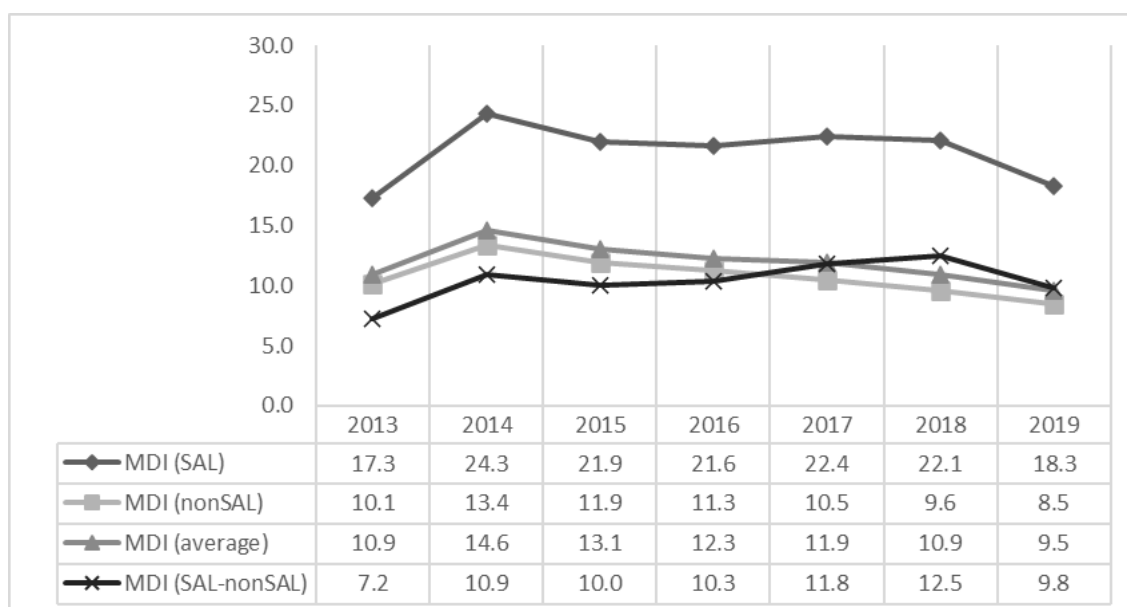


Figure D.28: Trends in MDI average scores for SAL, nonSAL and all households, and difference in SAL and nonSAL households MDI average score for Slovenia from 2013-2019 (points)

D.2.29 Spain

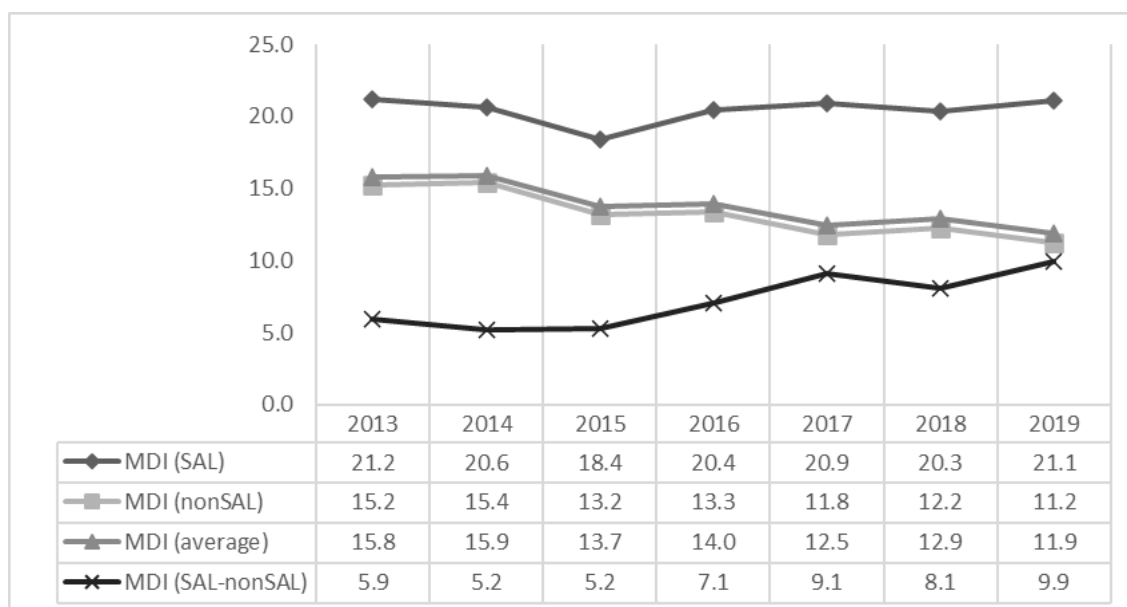


Figure D.29: Trends in MDI average scores for SAL, nonSAL and all households, and difference in SAL and nonSAL households MDI average score for Spain from 2013-2019 (points)

D.2.30 Sweden

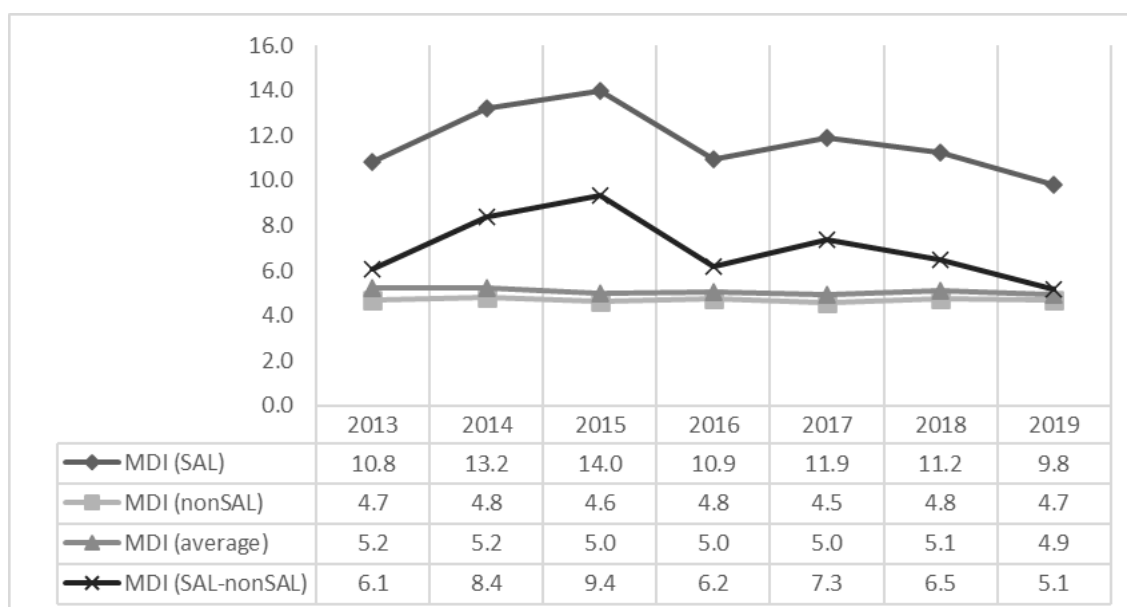


Figure D.30: Trends in MDI average scores for SAL, nonSAL and all households, and difference in SAL and nonSAL households MDI average score for Sweden from 2013-2019 (points)

D.2.31 Switzerland

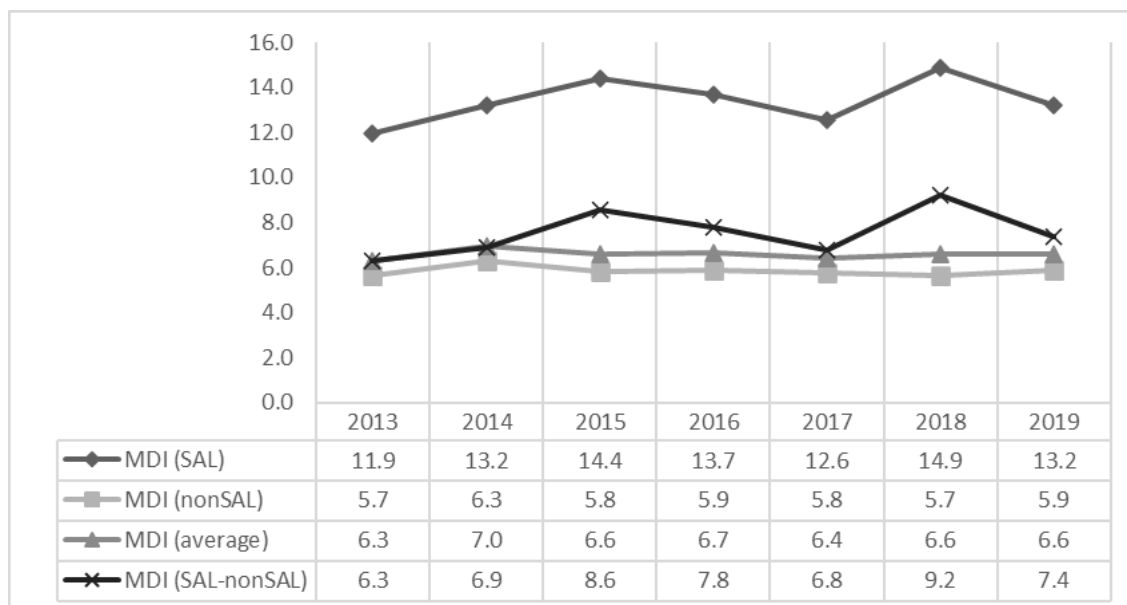


Figure D.31: Trends in MDI average scores for SAL, nonSAL and all households, and difference in SAL and nonSAL households MDI average score for Switzerland from 2013-2019 (points)

D.2.32 United Kingdom

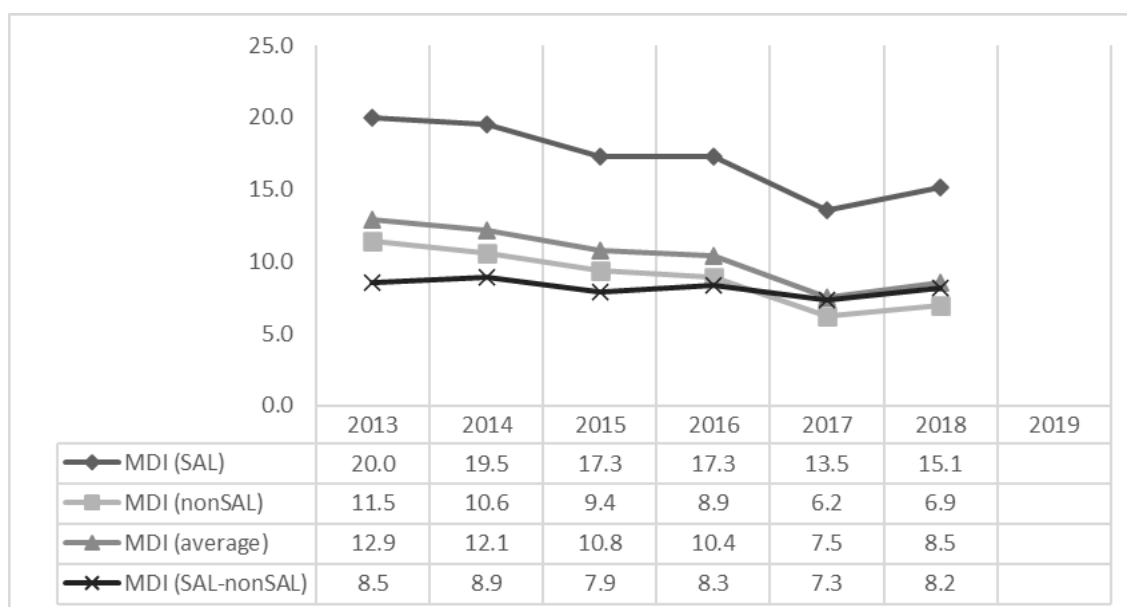


Figure D.32: Trends in MDI average scores for SAL, nonSAL and all households, and difference in SAL and nonSAL households MDI average score for United Kingdom from 2013-2018 (points)

Appendix E. Correlations between MDI means and household income

E.1 2013

Table E.1: MDI means & median household equivalised income (2013, N = 32)

	Kendall's tau-b	BCa 99% Confidence Interval*		Statistical significance
		lower	upper	
MDI with MHEDI	-0.750	-0.896	-0.522	p < 0.000
SAL MDI with MHEDI	-0.718	-0.882	-0.473	p < 0.000
SAL-nonSAL MDI difference with MHEDI	-0.424	-0.707	-0.062	p = 0.001
MDI with SAL-nonSAL MDI difference	0.467	0.130	0.717	p < 0.000
* Bootstrap results are based on 10,000 bootstrap samples.				

E.2 2014

Table E.2: MDI means & median household equivalised income (2014, N = 32)

	Kendall's tau-b	BCa 99% Confidence Interval*		Statistical significance
		lower	upper	
MDI with MED MHEDI	-0.750	-0.871	-0.570	p < 0.000
SAL MDI with MHEDI	-0.757	-0.874	-0.598	p < 0.000
SAL-nonSAL MDI difference with MHEDI	-0.271	-0.573	0.092	p = 0.031
MDI with SAL-nonSAL MDI difference	0.234	-0.151	0.562	p = 0.062
* Bootstrap results are based on 10,000 bootstrap samples.				

E.3 2015

Table E.3: MDI means & median household equivalised income (2015, N = 32)

	Kendall's tau-b	BCa 99% Confidence Interval*		Statistical significance
		lower	upper	
MDI with MHEDI	-0.730	-0.862	-0.545	p < 0.000
SAL MDI with MHEDI	-0.745	-0.886	-0.556	p < 0.000
SAL-nonSAL MDI difference with MHEDI	-0.292	-0.571	0.027	p = 0.019
MDI with SAL-nonSAL MDI difference	0.211	-0.122	0.514	p = 0.091
* Bootstrap results are based on 10,000 bootstrap samples.				

E.4 2016

Table E.4: MDI means & median household equivalised income (2016, N = 32)

	Kendall's tau-b	BCa 99% Confidence Interval*		Statistical significance
		lower	upper	
MDI with MHEDI	-0.695	-0.835	-0.509	p < 0.000
SAL MDI with MHEDI	-0.669	-0.815	-0.479	p < 0.000
SAL-nonSAL MDI difference with MHEDI	-0.245	-0.583	0.145	p = 0.051
MDI with SAL-nonSAL MDI difference	0.257	-0.146	0.602	p = 0.042
* Bootstrap results are based on 10,000 bootstrap samples.				

E.5 2017

Table E.5: MDI means & median household equivalised income (2017, N = 32)

	Kendall's tau-b	BCa 99% Confidence Interval*		Statistical significance
		lower	upper	
MDI with MHEDI	-0.720	-0.831	-0.571	p < 0.000
SAL MDI with MHEDI	-0.694	-0.844	-0.494	p < 0.000
SAL-nonSAL MDI difference with MHEDI	-0.407	-0.651	-0.089	p = 0.001
MDI with SAL-nonSAL MDI difference	0.418	0.107	0.671	p = 0.001
* Bootstrap results are based on 10,000 bootstrap samples.				

E.6 2018

Table E.6: MDI means & median household equivalised income (2018, N = 32)

	Kendall's tau-b	BCa 99% Confidence Interval*		Statistical significance
		lower	upper	
MDI with MHEDI	-0.707	-0.840	-0.525	p < 0.000
SAL MDI with MHEDI	-0.613	-0.781	-0.380	p < 0.000
SAL-nonSAL MDI difference with MHEDI	-0.296	-0.597	0.054	p = 0.018
MDI with SAL-nonSAL MDI difference	0.312	-0.063	0.624	p = 0.013
* Bootstrap results are based on 10,000 bootstrap samples.				

E.7 2019

Table E.7: MDI means & median household equivalised income (2019, N = 30)

	Kendall's tau-b	BCa 99% Confidence Interval*		Statistical significance
		lower	upper	
MDI with MHEDI	-0.646	-0.811	-0.426	p < 0.000
SAL MDI with MHEDI	-0.600	-0.787	-0.334	p < 0.000
SAL-nonSAL MDI difference with MHEDI	-0.367	-0.644	-0.010	p = 0.005
MDI with SAL-nonSAL MDI difference	0.417	0.000	0.742	p = 0.001

* Bootstrap results are based on 10,000 bootstrap samples.

Appendix F. SAL and nonSAL households at-risk-of-poverty

F.1 2013

Table F.1: Percentages of SAL and nonSAL households at-risk-of-poverty and the odds ratio for SAL vs nonSAL households at-risk-of-poverty for 2013

	SAL AROP	nonSAL AROP	odds ratio	Pearson chi-square statistical significant
Austria	16.4%	15.7%	1.1	p < 0.000
Belgium	26.1%	15.7%	1.9	p < 0.000
Bulgaria	28.2%	22.3%	1.4	p < 0.000
Croatia	30.5%	20.3%	1.7	p < 0.000
Cyprus	25.4%	16.0%	1.8	p < 0.000
Czech Republic	13.7%	8.8%	1.6	p < 0.000
Denmark	12.1%	16.5%	0.7	p < 0.000
Estonia	28.7%	22.2%	1.4	p < 0.000
Finland	25.9%	15.7%	1.9	p < 0.000
France	17.6%	13.4%	1.4	p < 0.000
Germany	32.2%	18.3%	2.1	p < 0.000
Greece	22.7%	20.6%	1.1	p < 0.000
Hungary	16.5%	12.8%	1.3	p < 0.000
Iceland	10.2%	10.8%	0.9	p = 0.033
Ireland	17.4%	17.2%	1.0	p = 0.032
Italy	19.0%	19.3%	1.0	p < 0.000
Latvia	24.9%	20.9%	1.2	p < 0.000
Lithuania	25.6%	22.8%	1.2	p < 0.000
Luxembourg	14.4%	14.4%	1.0	p = 0.966
Malta	16.7%	16.2%	1.0	p = 0.202
Netherlands	11.6%	12.0%	1.0	p < 0.000
Norway	21.9%	14.4%	1.7	p < 0.000
Poland	19.3%	15.9%	1.3	p < 0.000
Portugal	21.6%	17.6%	1.3	p < 0.000
Romania	22.1%	20.2%	1.1	p < 0.000
Serbia	29.8%	23.6%	1.4	p < 0.000
Slovakia	13.3%	11.6%	1.2	p < 0.000
Slovenia	31.1%	16.8%	2.2	p < 0.000
Spain	19.5%	18.9%	1.0	p < 0.000
Sweden	27.0%	18.2%	1.7	p < 0.000
Switzerland	28.6%	14.9%	2.3	p < 0.000
United Kingdom	21.5%	16.2%	1.4	p < 0.000

F.2 2014

Table F.2: Percentages of SAL and nonSAL households at-risk-of-poverty and the odds ratio for SAL vs nonSAL households at-risk-of-poverty for 2014

	SAL AROP	nonSAL AROP	odds ratio	Pearson chi-square statistical significant
Austria	18.3%	15.4%	1.2	p < 0.000
Belgium	26.1%	14.8%	2.0	p < 0.000
Bulgaria	23.5%	21.3%	1.1	p < 0.000
Croatia	30.5%	19.7%	1.8	p < 0.000
Cyprus	26.2%	15.7%	1.9	p < 0.000
Czech Republic	15.5%	9.9%	1.7	p < 0.000
Denmark	20.7%	16.1%	1.4	p < 0.000
Estonia	35.9%	26.9%	1.5	p < 0.000
Finland	26.7%	16.7%	1.8	p < 0.000
France	18.4%	12.6%	1.6	p < 0.000
Germany	33.3%	18.6%	2.2	p < 0.000
Greece	22.6%	20.4%	1.1	p < 0.000
Hungary	15.2%	12.6%	1.2	p < 0.000
Iceland	13.9%	9.5%	1.5	p < 0.000
Ireland	18.0%	17.6%	1.0	p = 0.001
Italy	18.2%	19.4%	0.9	p < 0.000
Latvia	33.6%	23.7%	1.6	p < 0.000
Lithuania	27.4%	22.0%	1.3	p < 0.000
Luxembourg	16.8%	14.3%	1.2	p < 0.000
Malta	24.2%	15.8%	1.7	p < 0.000
Netherlands	11.8%	13.4%	0.9	p < 0.000
Norway	23.8%	15.1%	1.8	p < 0.000
Poland	21.1%	15.3%	1.5	p < 0.000
Portugal	22.1%	18.1%	1.3	p < 0.000
Romania	23.8%	21.4%	1.2	p < 0.000
Serbia	25.9%	24.4%	1.1	p < 0.000
Slovakia	12.5%	11.9%	1.1	p < 0.000
Slovenia	30.5%	16.7%	2.2	p < 0.000
Spain	18.6%	20.8%	0.9	p < 0.000
Sweden	29.9%	18.0%	1.9	p < 0.000
Switzerland	25.0%	14.2%	2.0	p < 0.000
United Kingdom	24.6%	16.6%	1.6	p < 0.000

F.3 2015

Table F.3: Percentages of SAL and nonSAL households at-risk-of-poverty and the odds ratio for SAL vs nonSAL households at-risk-of-poverty for 2015

	SAL AROP	nonSAL AROP	odds ratio	Pearson chi-square statistical significance
Austria	18.7%	14.8%	1.3	p < 0.000
Belgium	23.7%	14.6%	1.8	p < 0.000
Bulgaria	30.7%	24.2%	1.4	p < 0.000
Croatia	35.6%	20.5%	2.1	p < 0.000
Cyprus	23.7%	16.9%	1.5	p < 0.000
Czech Republic	17.6%	10.4%	1.8	p < 0.000
Denmark	24.9%	15.7%	1.8	p < 0.000
Estonia	41.0%	26.2%	2.0	p < 0.000
Finland	24.2%	16.2%	1.7	p < 0.000
France	18.0%	12.8%	1.5	p < 0.000
Germany	34.3%	19.6%	2.1	p < 0.000
Greece	22.1%	20.1%	1.1	p < 0.000
Hungary	14.5%	13.9%	1.1	p < 0.000
Iceland	13.3%	11.5%	1.2	p < 0.000
Ireland	23.6%	17.7%	1.4	p < 0.000
Italy	18.4%	19.8%	0.9	p < 0.000
Latvia	39.6%	25.8%	1.9	p < 0.000
Lithuania	30.9%	25.3%	1.3	p < 0.000
Luxembourg	17.8%	14.4%	1.3	p < 0.000
Malta	24.3%	17.6%	1.5	p < 0.000
Netherlands	13.9%	13.0%	1.1	p < 0.000
Norway	27.7%	16.0%	2.0	p < 0.000
Poland	21.2%	16.4%	1.4	p < 0.000
Portugal	25.6%	18.0%	1.6	p < 0.000
Romania	27.2%	22.5%	1.3	p < 0.000
Serbia	28.2%	26.3%	1.1	p < 0.000
Slovakia	12.1%	11.2%	1.1	p < 0.000
Slovenia	29.3%	17.3%	2.0	p < 0.000
Spain	21.3%	20.2%	1.1	p < 0.000
Sweden	31.1%	19.2%	1.9	p < 0.000
Switzerland	28.1%	15.7%	2.1	p < 0.000
United Kingdom	23.5%	15.7%	1.6	p < 0.000

F.4 2016

Table F.4: Percentages of SAL and nonSAL households at-risk-of-poverty and the odds ratio for SAL vs nonSAL households at-risk-of-poverty for 2016

	SAL AROP	nonSAL AROP	odds ratio	Pearson chi-square statistical significance
Austria	18.5%	14.9%	1.3	p < 0.000
Belgium	25.6%	15.2%	1.9	p < 0.000
Bulgaria	29.4%	23.8%	1.3	p < 0.000
Croatia	34.6%	20.4%	2.1	p < 0.000
Cyprus	27.2%	16.5%	1.9	p < 0.000
Czech Republic	19.2%	10.6%	2.0	p < 0.000
Denmark	23.7%	15.4%	1.7	p < 0.000
Estonia	44.7%	27.5%	2.1	p < 0.000
Finland	23.7%	15.3%	1.7	p < 0.000
France	15.5%	12.6%	1.3	p < 0.000
Germany	33.7%	19.2%	2.1	p < 0.000
Greece	18.7%	20.1%	0.9	p < 0.000
Hungary	16.6%	14.2%	1.2	p < 0.000
Iceland	14.9%	11.1%	1.4	p < 0.000
Ireland	31.9%	18.5%	2.1	p < 0.000
Italy	20.2%	20.7%	1.0	p < 0.000
Latvia	45.1%	26.8%	2.3	p < 0.000
Lithuania	32.6%	26.0%	1.4	p < 0.000
Luxembourg	19.5%	14.5%	1.4	p < 0.000
Malta	31.2%	17.2%	2.2	p < 0.000
Netherlands	19.7%	14.3%	1.5	p < 0.000
Norway	28.1%	15.7%	2.1	p < 0.000
Poland	21.0%	17.2%	1.3	p < 0.000
Portugal	27.0%	18.0%	1.7	p < 0.000
Romania	29.4%	22.8%	1.4	p < 0.000
Serbia	27.7%	26.1%	1.1	p < 0.000
Slovakia	11.8%	11.6%	1.0	p < 0.000
Slovenia	28.7%	17.7%	1.9	p < 0.000
Spain	21.3%	20.7%	1.0	p < 0.000
Sweden	29.7%	18.6%	1.8	p < 0.000
Switzerland	24.7%	14.9%	1.9	p < 0.000
United Kingdom	22.5%	16.3%	1.5	p < 0.000

F.5 2017

Table F.5: Percentages of SAL and nonSAL households at-risk-of-poverty and the odds ratio for SAL vs nonSAL households at-risk-of-poverty for 2017

	SAL AROP	nonSAL AROP	odds ratio	Pearson chi-square statistical significance
Austria	18.8%	15.7%	1.2	p < 0.000
Belgium	21.8%	16.2%	1.4	p < 0.000
Bulgaria	37.0%	25.0%	1.8	p < 0.000
Croatia	37.6%	21.1%	2.2	p < 0.000
Cyprus	27.9%	15.8%	2.1	p < 0.000
Czech Republic	18.0%	11.0%	1.8	p < 0.000
Denmark	23.1%	15.9%	1.6	p < 0.000
Estonia	44.9%	26.3%	2.3	p < 0.000
Finland	18.2%	15.4%	1.2	p < 0.000
France	14.7%	12.5%	1.2	p < 0.000
Germany	35.3%	18.4%	2.4	p < 0.000
Greece	20.3%	18.6%	1.1	p < 0.000
Hungary	17.1%	14.0%	1.3	p < 0.000
Iceland	15.8%	12.3%	1.3	p < 0.000
Ireland	25.9%	17.6%	1.6	p < 0.000
Italy	18.8%	20.6%	0.9	p < 0.000
Latvia	41.2%	27.6%	1.8	p < 0.000
Lithuania	44.2%	27.1%	2.1	p < 0.000
Luxembourg	21.8%	15.6%	1.5	p < 0.000
Malta	26.5%	18.2%	1.6	p < 0.000
Netherlands	20.8%	15.1%	1.5	p < 0.000
Norway	20.9%	15.9%	1.4	p < 0.000
Poland	21.0%	16.2%	1.4	p < 0.000
Portugal	24.4%	17.8%	1.5	p < 0.000
Romania	27.4%	21.7%	1.4	p < 0.000
Serbia	31.6%	25.3%	1.4	p < 0.000
Slovakia	13.8%	11.7%	1.2	p < 0.000
Slovenia	32.5%	16.5%	2.4	p < 0.000
Spain	21.9%	20.4%	1.1	p < 0.000
Sweden	34.6%	17.6%	2.5	p < 0.000
Switzerland	24.4%	16.0%	1.7	p < 0.000
United Kingdom	26.8%	15.8%	1.9	p < 0.000

F.6 2018

Table F.6: Percentages of SAL and nonSAL households at-risk-of-poverty and the odds ratio for SAL vs nonSAL households at-risk-of-poverty for 2018

	SAL AROP	nonSAL AROP	odds ratio	Pearson chi-square statistical significance
Austria	19.9%	15.3%	1.4	p < 0.000
Belgium	25.8%	16.4%	1.8	p < 0.000
Bulgaria	29.8%	24.2%	1.3	p < 0.000
Croatia	37.0%	20.5%	2.3	p < 0.000
Cyprus	28.6%	14.6%	2.3	p < 0.000
Czech Republic	23.9%	11.7%	2.4	p < 0.000
Denmark	22.7%	16.4%	1.5	p < 0.000
Estonia	50.6%	27.1%	2.8	p < 0.000
Finland	24.7%	15.5%	1.8	p < 0.000
France	15.5%	12.4%	1.3	p < 0.000
Germany	35.6%	18.1%	2.5	p < 0.000
Greece	18.6%	17.0%	1.1	p < 0.000
Hungary	17.7%	14.0%	1.3	p < 0.000
Iceland	10.6%	10.4%	1.0	p = 0.274
Ireland	30.0%	18.3%	1.9	p < 0.000
Italy	19.7%	20.1%	1.0	p < 0.000
Latvia	51.6%	26.9%	2.9	p < 0.000
Lithuania	42.4%	28.5%	1.8	p < 0.000
Luxembourg	24.2%	14.9%	1.8	p < 0.000
Malta	22.0%	19.0%	1.2	p < 0.000
Netherlands	24.1%	15.1%	1.8	p < 0.000
Norway	25.6%	16.5%	1.7	p < 0.000
Poland	22.9%	16.6%	1.5	p < 0.000
Portugal	24.6%	17.0%	1.6	p < 0.000
Romania	31.3%	22.5%	1.6	p < 0.000
Serbia	32.5%	24.3%	1.5	p < 0.000
Slovakia	14.2%	11.2%	1.3	p < 0.000
Slovenia	35.0%	17.0%	2.6	p < 0.000
Spain	23.7%	20.2%	1.2	p < 0.000
Sweden	34.7%	18.7%	2.3	p < 0.000
Switzerland	27.6%	14.2%	2.3	p < 0.000
United Kingdom	28.1%	17.3%	1.9	p < 0.000

F.7 2019

Table F.7: Percentages of SAL and nonSAL households at-risk-of-poverty and the odds ratio for SAL vs nonSAL households at-risk-of-poverty for 2019

	SAL AROP	nonSAL AROP	odds ratio	Pearson chi-square statistical significance
Austria	18.9%	15.4%	1.3	p < 0.000
Belgium	24.7%	13.9%	2.0	p < 0.000
Bulgaria	35.5%	26.3%	1.5	p < 0.000
Croatia	37.6%	19.7%	2.5	p < 0.000
Cyprus	28.5%	14.7%	2.3	p < 0.000
Czech Republic	26.5%	12.3%	2.6	p < 0.000
Denmark	20.9%	16.3%	1.4	p < 0.000
Estonia	43.5%	27.2%	2.1	p < 0.000
Finland	25.1%	15.0%	1.9	p < 0.000
France	17.8%	13.0%	1.4	p < 0.000
Germany	33.0%	17.8%	2.3	p < 0.000
Greece	18.6%	16.6%	1.2	p < 0.000
Hungary	21.8%	13.4%	1.8	p < 0.000
Iceland	-	-	-	-
Ireland	24.9%	16.7%	1.7	p < 0.000
Italy	20.1%	20.3%	1.0	p < 0.000
Latvia	48.5%	28.2%	2.4	p < 0.000
Lithuania	37.0%	25.9%	1.7	p < 0.000
Luxembourg	24.3%	15.6%	1.7	p < 0.000
Malta	24.8%	19.4%	1.4	p < 0.000
Netherlands	21.9%	15.2%	1.6	p < 0.000
Norway	19.5%	16.1%	1.3	p < 0.000
Poland	24.7%	17.0%	1.6	p < 0.000
Portugal	23.0%	17.5%	1.4	p < 0.000
Romania	33.4%	23.2%	1.7	p < 0.000
Serbia	31.5%	22.9%	1.6	p < 0.000
Slovakia	14.3%	11.1%	1.3	p < 0.000
Slovenia	31.4%	15.8%	2.5	p < 0.000
Spain	26.1%	18.9%	1.5	p < 0.000
Sweden	30.8%	19.0%	1.9	p < 0.000
Switzerland	30.4%	15.8%	2.3	p < 0.000
United Kingdom	-	-	-	-

F.8 Difference in SAL and nonSAL households AROP by country

The differences in the table below are calculated using the weighted samples. The percentages are proportionate to subgroup of households. For instance, the 10.4% for Belgium in 2013 (circled in table below) implies that amongst SAL households there were 10.4% more AROP than there were AROP within the nonSAL households subgroup.

Table F.8: Difference in SAL and nonSAL households at-risk-of-poverty by country, 2013-2019

	2013	2014	2015	2016	2017	2018	2019
Austria	0.7%	2.9%	3.9%	3.6%	3.1%	4.6%	3.5%
Belgium	10.4%	11.3%	9.1%	10.4%	5.6%	9.4%	10.8%
Bulgaria	5.9%	2.2%	6.5%	5.6%	12.0%	5.6%	9.2%
Croatia	10.2%	10.8%	15.1%	14.2%	16.5%	16.5%	17.9%
Cyprus	9.4%	10.5%	6.8%	10.7%	12.1%	14.0%	13.8%
Czech Republic	4.9%	5.6%	7.2%	8.6%	7.0%	12.2%	14.2%
Denmark	-4.4%	4.6%	9.2%	8.3%	7.2%	6.3%	4.6%
Estonia	6.5%	9.0%	14.8%	17.2%	18.6%	23.5%	16.3%
Finland	10.2%	10.0%	8.0%	8.4%	2.8%	9.2%	10.1%
France	4.2%	5.8%	5.2%	2.9%	2.2%	3.1%	4.8%
Germany	13.9%	14.7%	14.7%	14.5%	16.9%	17.5%	15.2%
Greece	2.1%	2.2%	2.0%	-1.4%	1.7%	1.6%	2.0%
Hungary	3.7%	2.6%	0.6%	2.4%	3.1%	3.7%	8.4%
Iceland	-0.6%	4.4%	1.8%	3.8%	3.5%	0.2%	NA
Ireland	0.2%	0.4%	5.9%	13.4%	8.3%	11.7%	8.2%
Italy	-0.3%	-1.2%	-1.4%	-0.5%	-1.8%	-0.4%	-0.2%
Latvia	4.0%	9.9%	13.8%	18.3%	13.6%	24.7%	20.3%
Lithuania	2.8%	5.4%	5.6%	6.6%	17.1%	13.9%	11.1%
Luxembourg	0.0%	2.5%	3.4%	5.0%	6.2%	9.3%	8.7%
Malta	0.5%	8.4%	6.7%	14.0%	8.3%	3.0%	5.4%
Netherlands	-0.4%	-1.6%	0.9%	5.4%	5.7%	9.0%	6.7%
Norway	7.5%	8.7%	11.7%	12.4%	5.0%	9.1%	3.4%
Poland	3.4%	5.8%	4.8%	3.8%	4.8%	6.3%	7.7%
Portugal	4.0%	4.0%	7.6%	9.0%	6.6%	7.6%	5.5%
Romania	1.9%	2.4%	4.7%	6.6%	5.7%	8.8%	10.2%
Serbia	6.2%	1.5%	1.9%	1.6%	6.3%	8.2%	8.6%
Slovakia	1.7%	0.6%	0.9%	0.2%	2.1%	3.0%	3.2%
Slovenia	14.3%	13.8%	12.0%	11.0%	16.0%	18.0%	15.6%
Spain	0.6%	-2.2%	1.1%	0.6%	1.5%	3.5%	7.2%
Sweden	8.8%	11.9%	11.9%	11.1%	17.0%	16.0%	11.8%
Switzerland	13.7%	10.8%	12.4%	9.8%	8.4%	13.4%	14.6%
United Kingdom	5.3%	8.0%	7.8%	6.2%	11.0%	10.8%	NA

F.9 Trends over 2013-2019 in the odds ratios of SAL vs nonSAL households for being at-risk-of-poverty

F.9.1 Austria

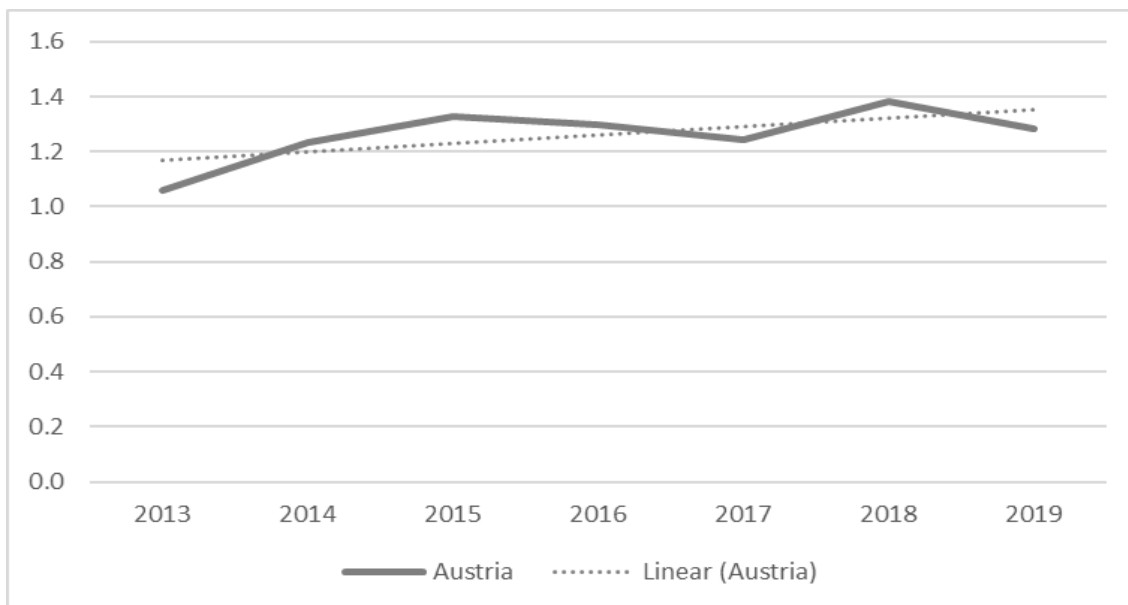


Figure F.1: Trend in SAL vs nonSAL households odds ratio for being at-risk-of-poverty for Austria (2013-2019)

F.9.2 Belgium

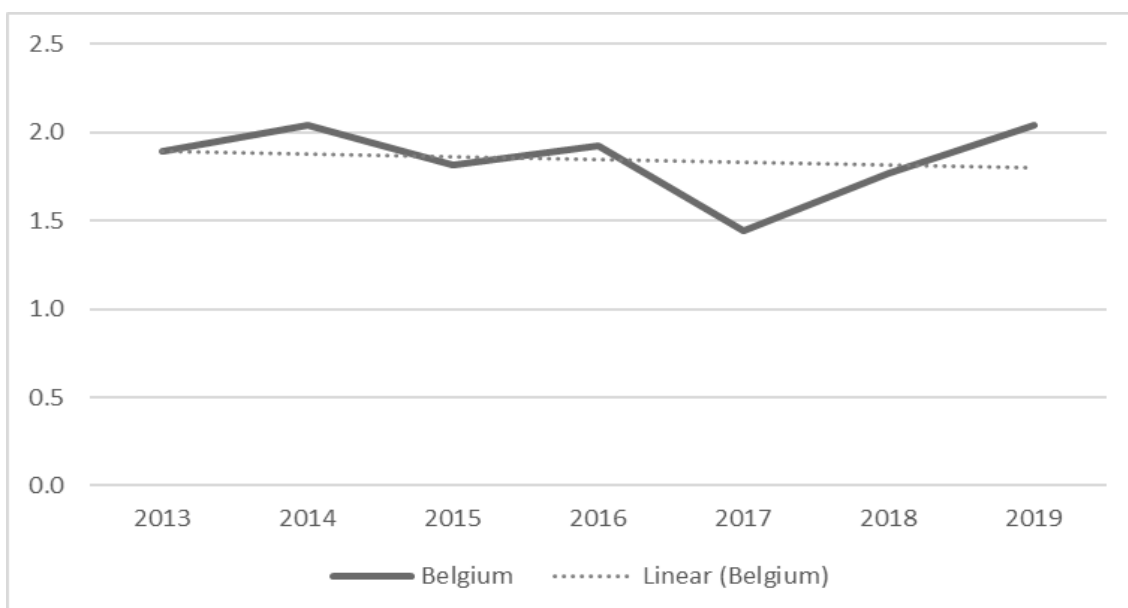


Figure F.2: Trend in SAL vs nonSAL households odds ratio for being at-risk-of-poverty for Belgium (2013-2019)

F.9.3 Bulgaria

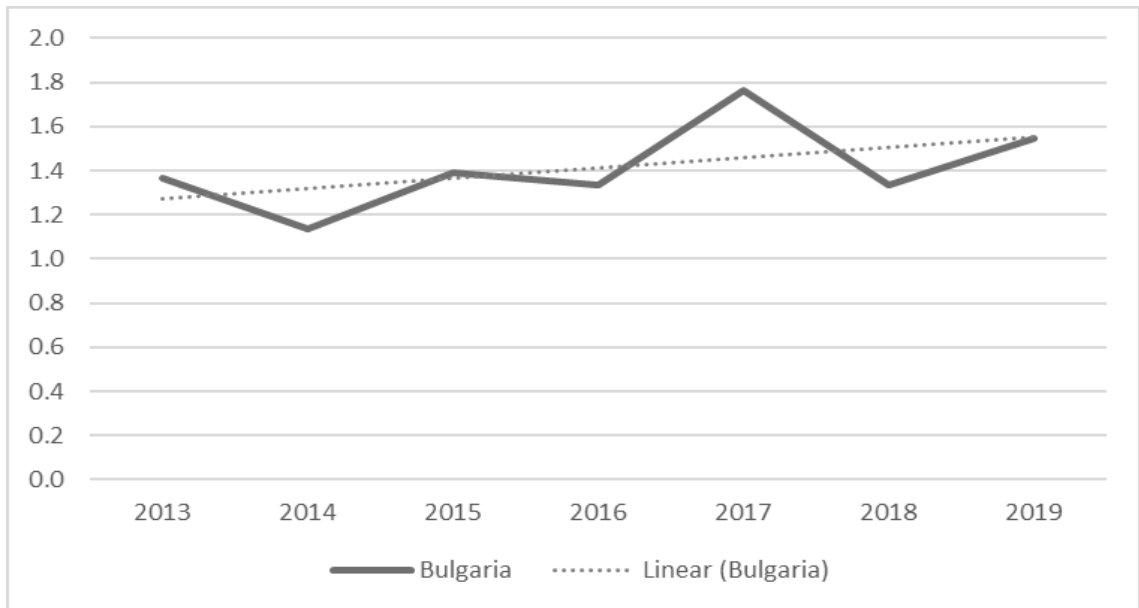


Figure F.3: Trend in SAL vs nonSAL households odds ratio for being at-risk-of-poverty for Bulgaria (2013-2019)

F.9.4 Croatia

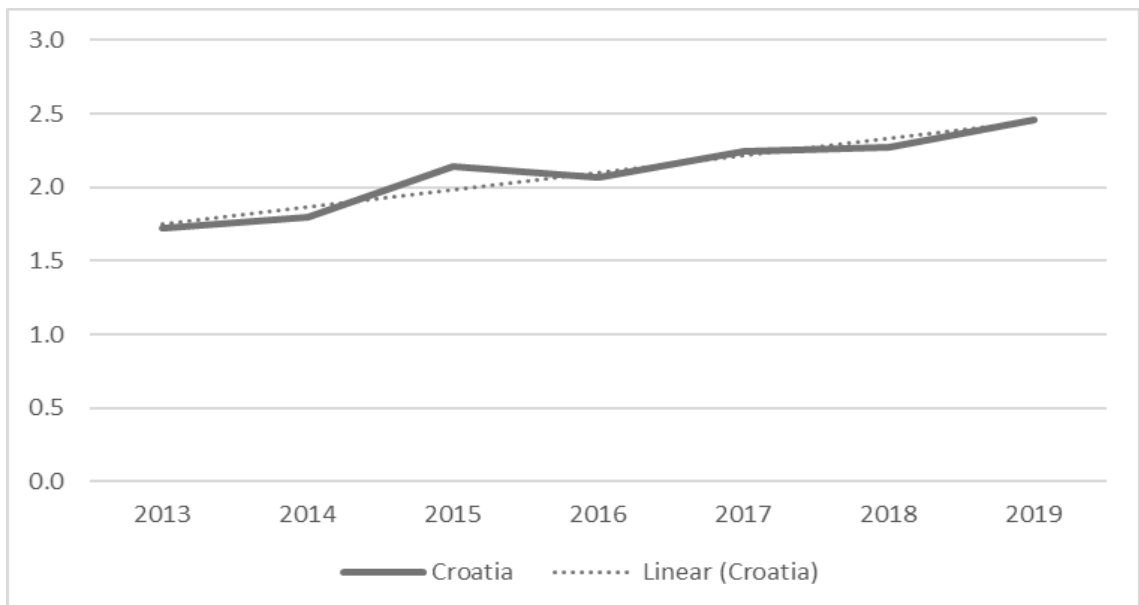


Figure F.4: Trend in SAL vs nonSAL households odds ratio for being at-risk-of-poverty for Croatia (2013-2019)

F.9.5 Cyprus

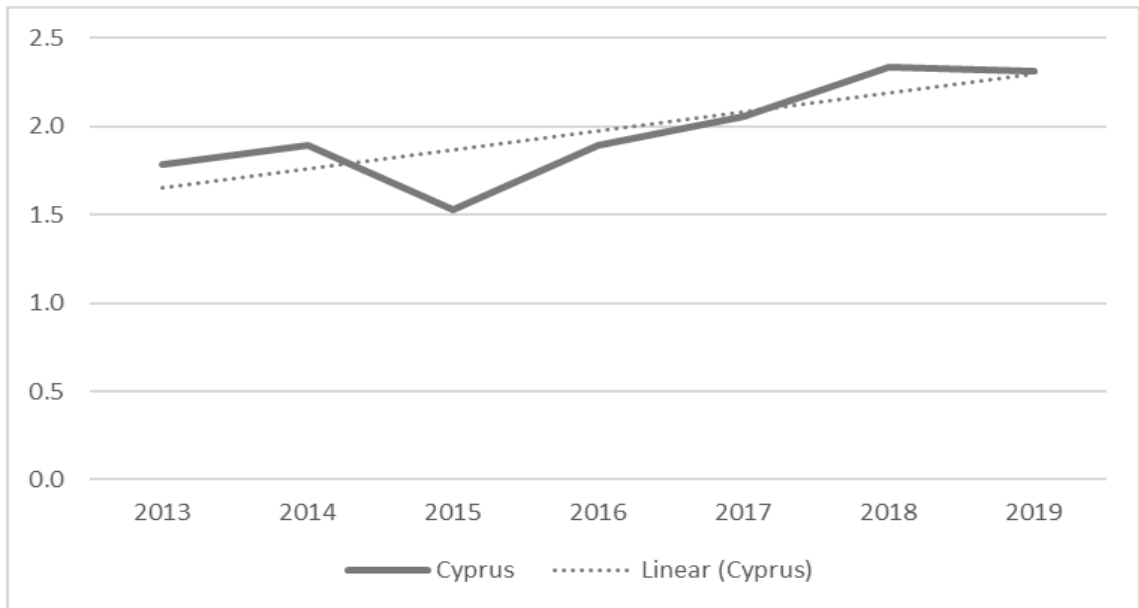


Figure F.5: Trend in SAL vs nonSAL households odds ratio for being at-risk-of-poverty for Cyprus (2013-2019)

F.9.6 Czech Republic

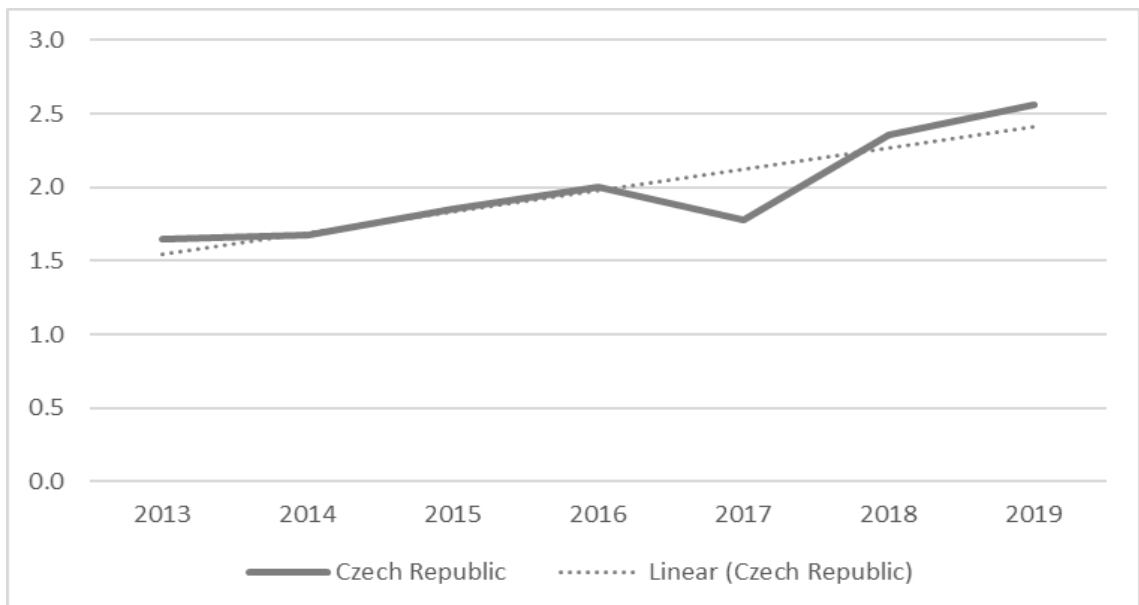


Figure F.6: Trend in SAL vs nonSAL households odds ratio for being at-risk-of-poverty for Czech Republic (2013-2019)

F.9.7 Denmark

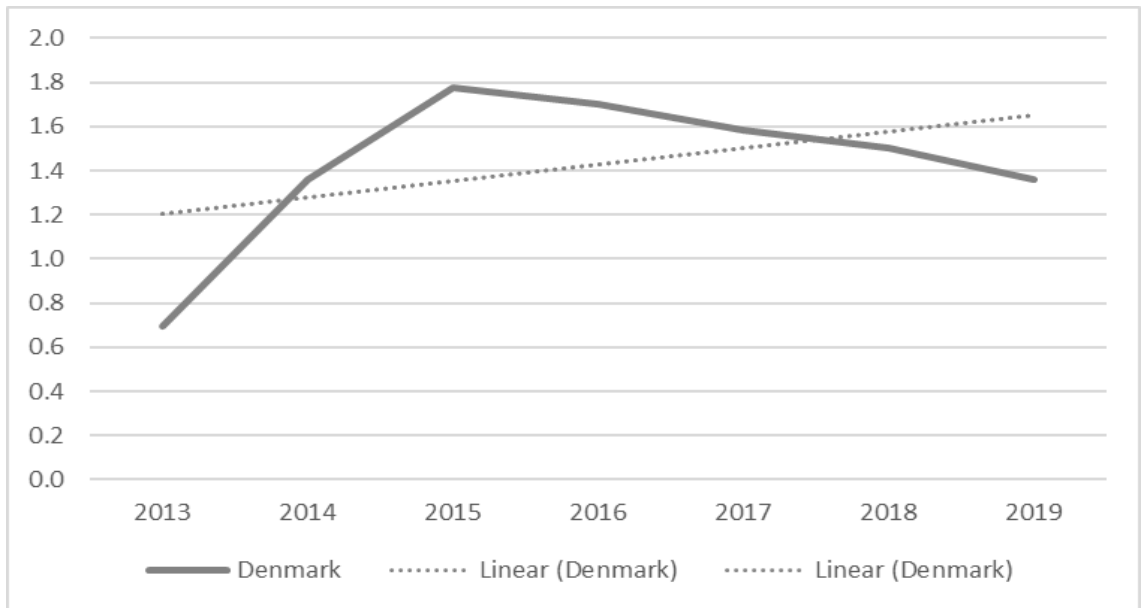


Figure F.7: Trend in SAL vs nonSAL households odds ratio for being at-risk-of-poverty for Denmark (2013-2019)

F.9.8 Estonia

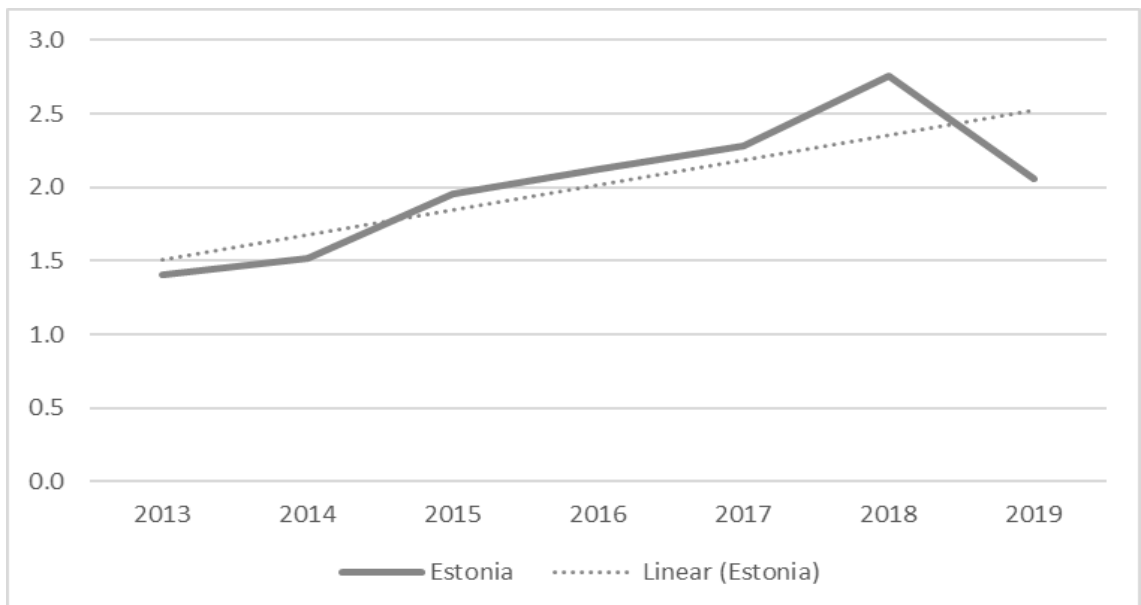


Figure F.8: Trend in SAL vs nonSAL households odds ratio for being at-risk-of-poverty for Estonia (2013-2019)

F.9.9 Finland

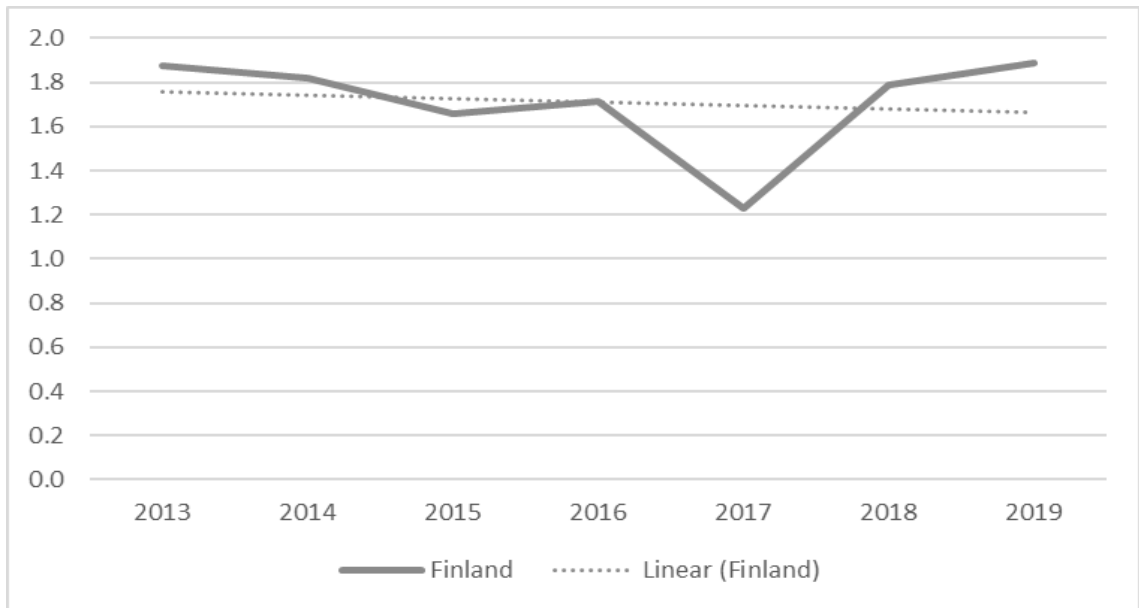


Figure F.9: Trend in SAL vs nonSAL households odds ratio for being at-risk-of-poverty for Finland (2013-2019)

F.9.10 France

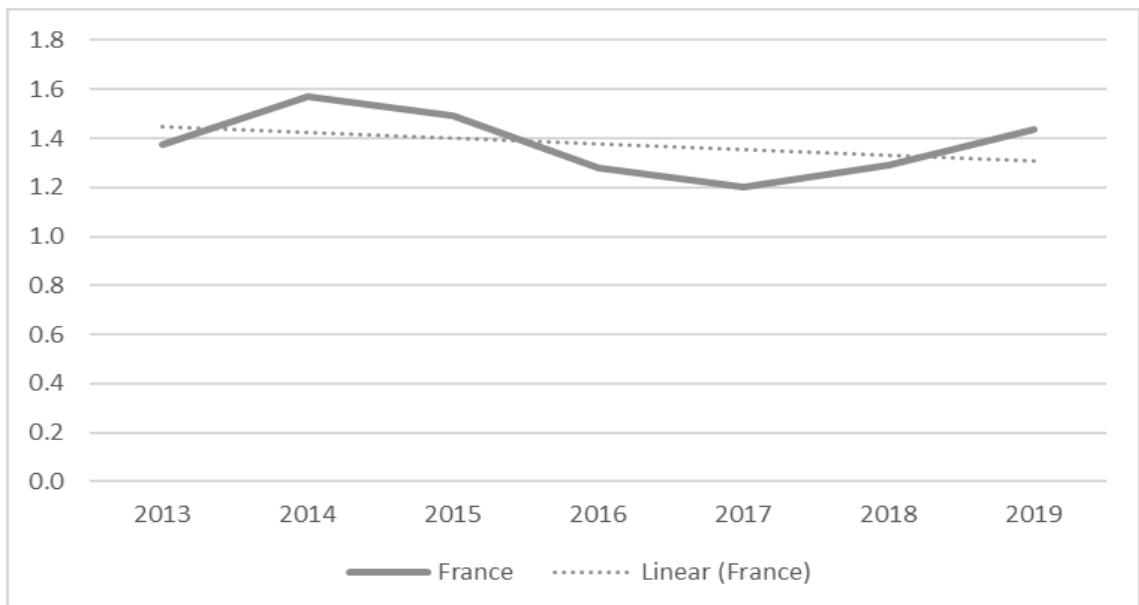


Figure F.10: Trend in SAL vs nonSAL households odds ratio for being at-risk-of-poverty for France (2013-2019)

F.9.11 Germany

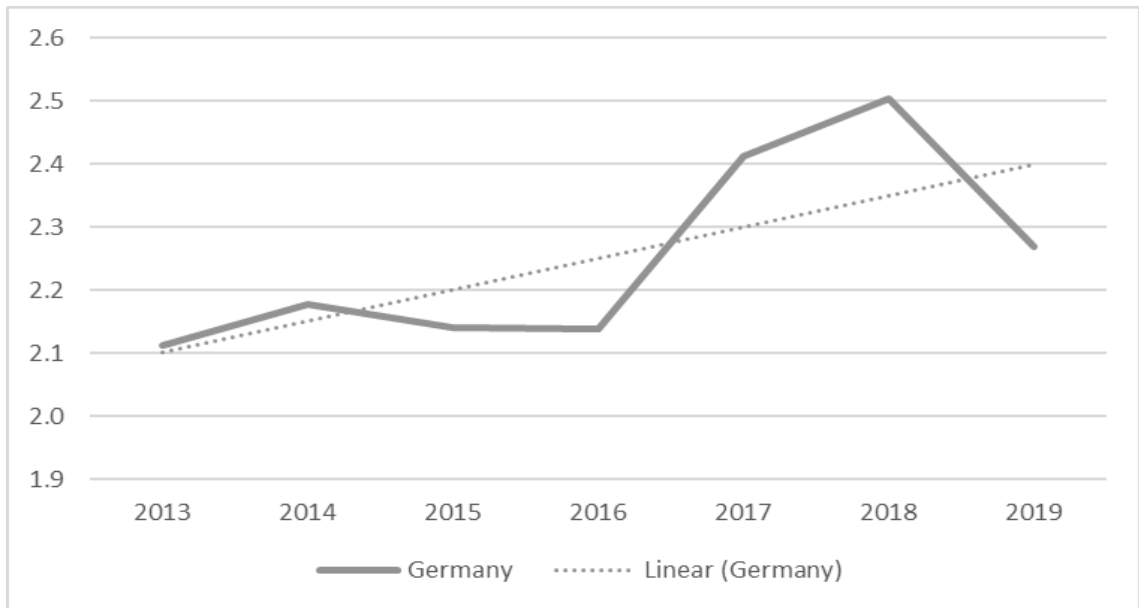


Figure F.11: Trend in SAL vs nonSAL households odds ratio for being at-risk-of-poverty for Germany (2013-2019)

F.9.12 Greece

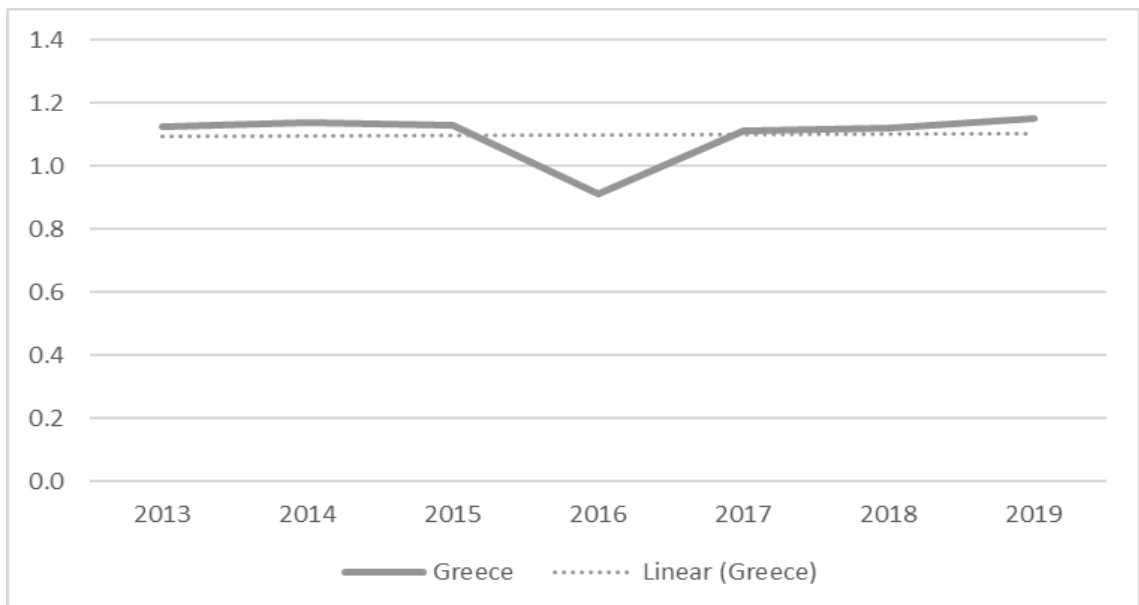


Figure F.12: Trend in SAL vs nonSAL households odds ratio for being at-risk-of-poverty for Greece (2013-2019)

F.9.13 Hungary

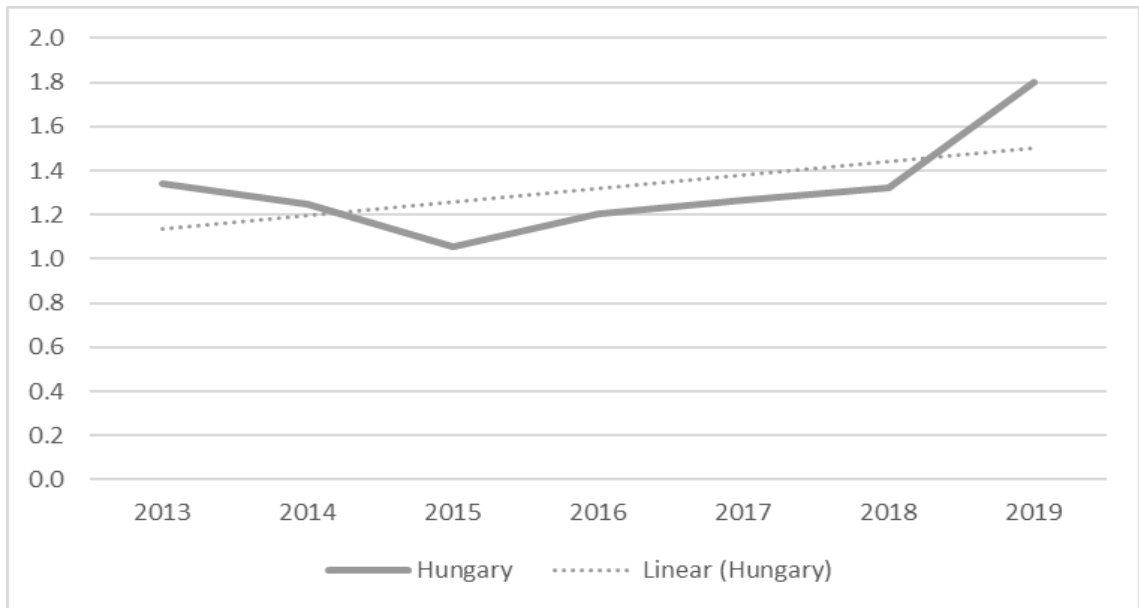


Figure F.13: Trend in SAL vs nonSAL households odds ratio for being at-risk-of-poverty for Hungary (2013-2019)

F.9.14 Iceland

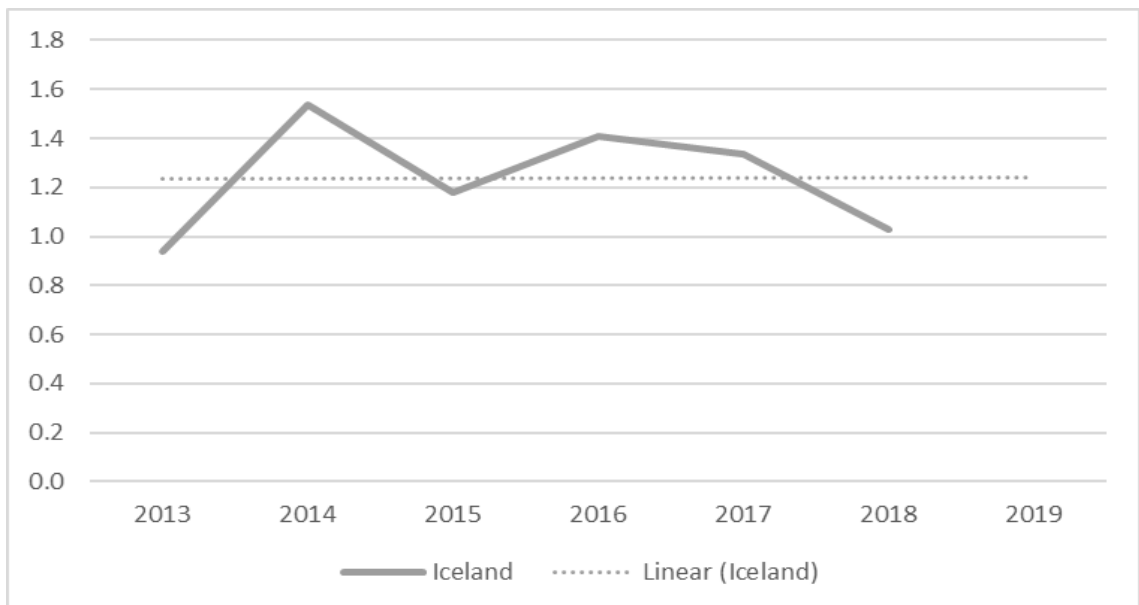


Figure F.14: Trend in SAL vs nonSAL households odds ratio for being at-risk-of-poverty for Iceland (2013-2018)

F.9.15 Ireland

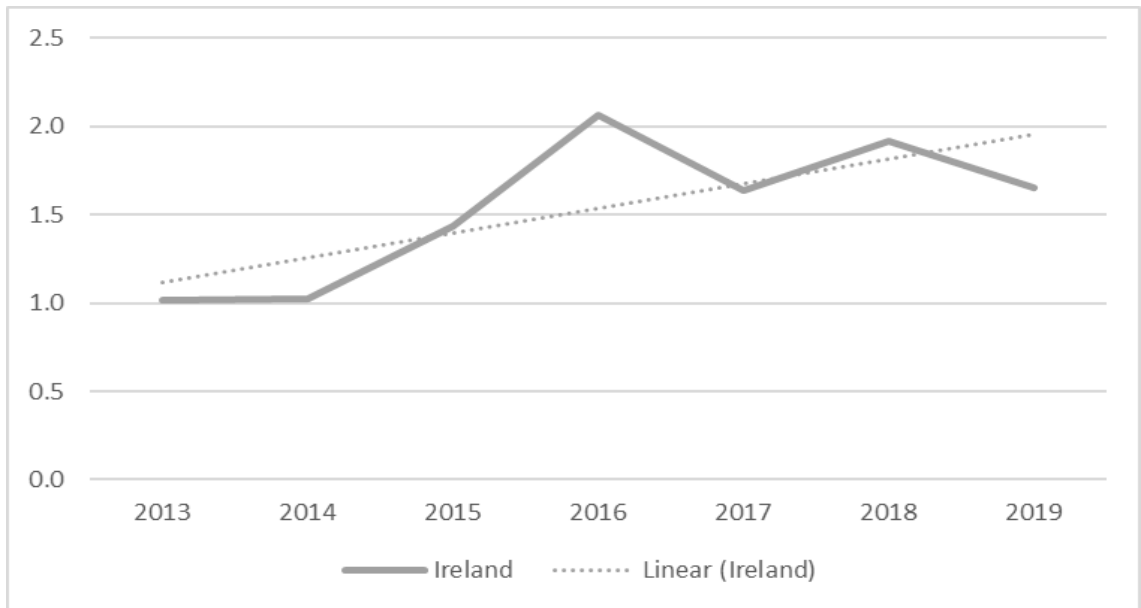


Figure F.15: Trend in SAL vs nonSAL households odds ratio for being at-risk-of-poverty for Ireland (2013-2019)

F.9.16 Italy

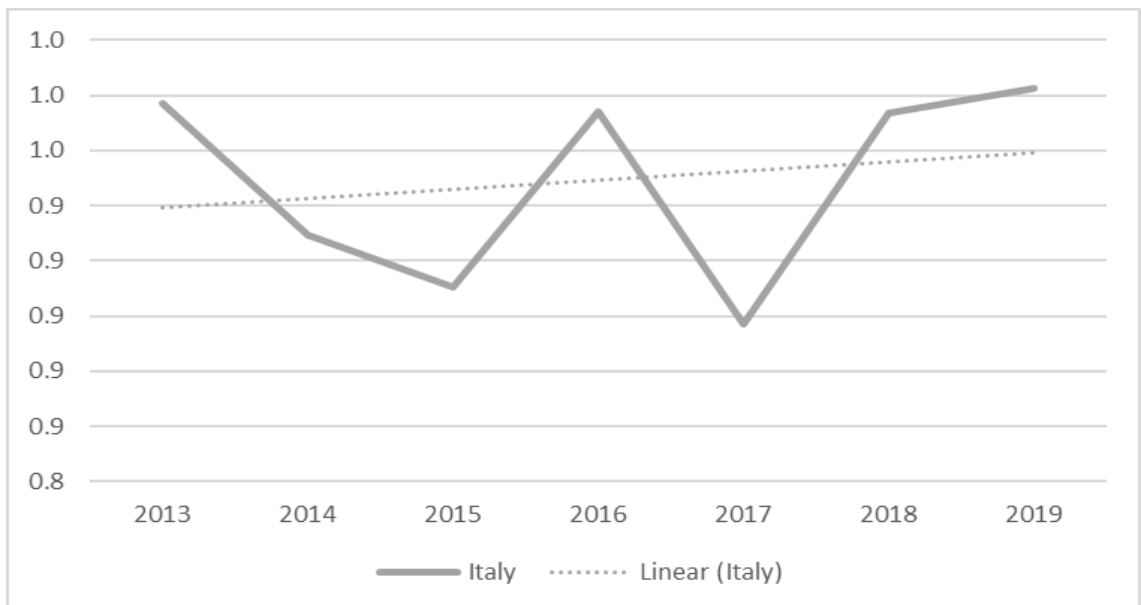


Figure F.16: Trend in SAL vs nonSAL households odds ratio for being at-risk-of-poverty for Italy (2013-2019)

F.9.17 Latvia

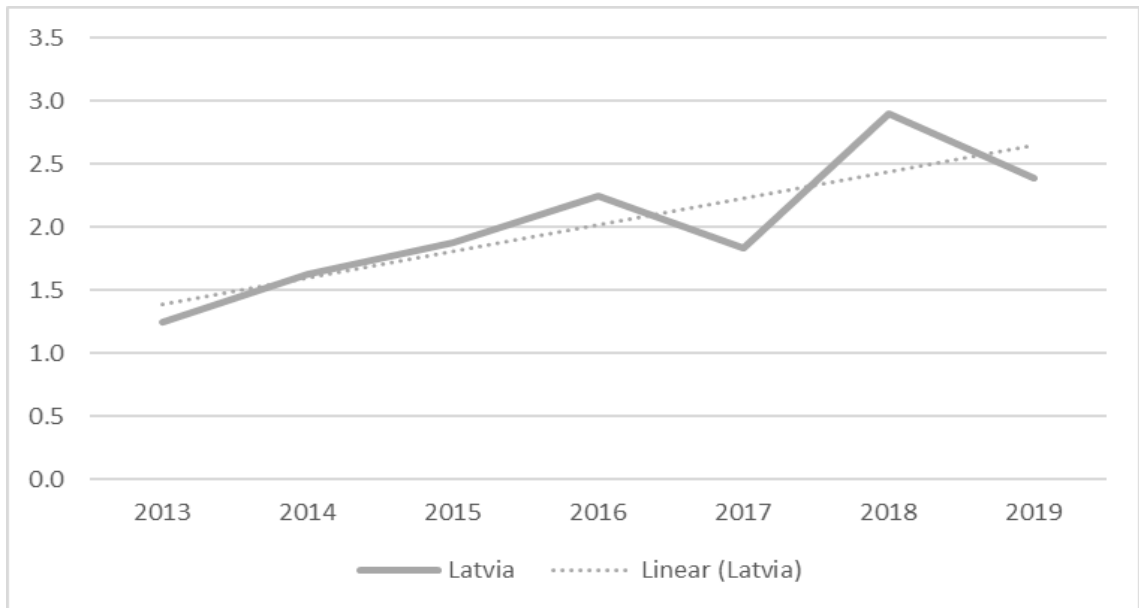


Figure F.17: Trend in SAL vs nonSAL households odds ratio for being at-risk-of-poverty for Latvia (2013-2019)

F.9.18 Lithuania

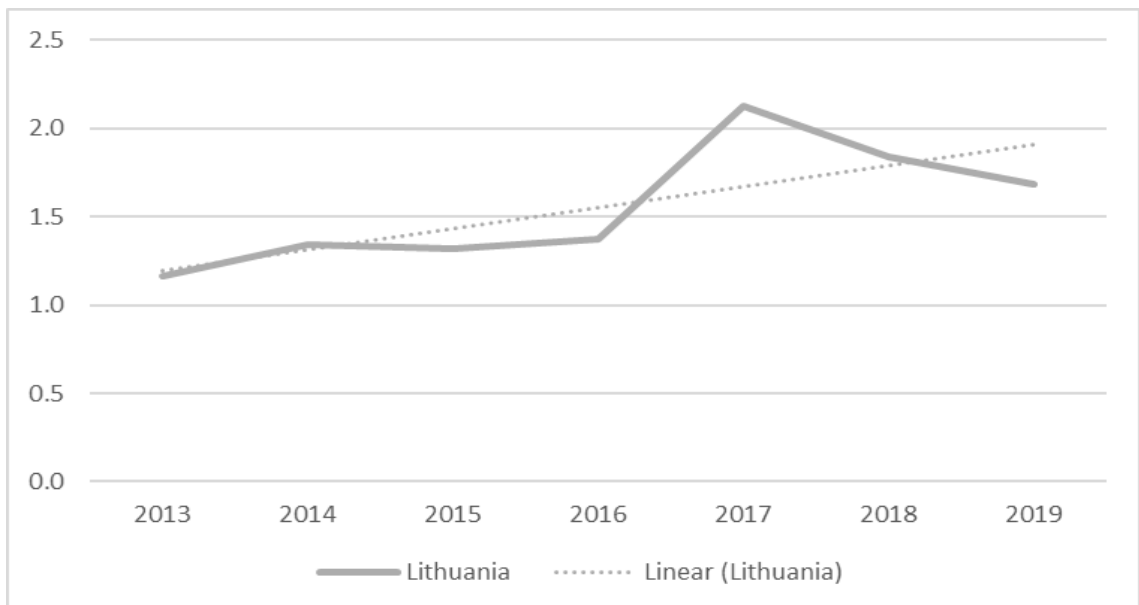


Figure F.18: Trend in SAL vs nonSAL households odds ratio for being at-risk-of-poverty for Lithuania (2013-2019)

F.9.19 Luxembourg

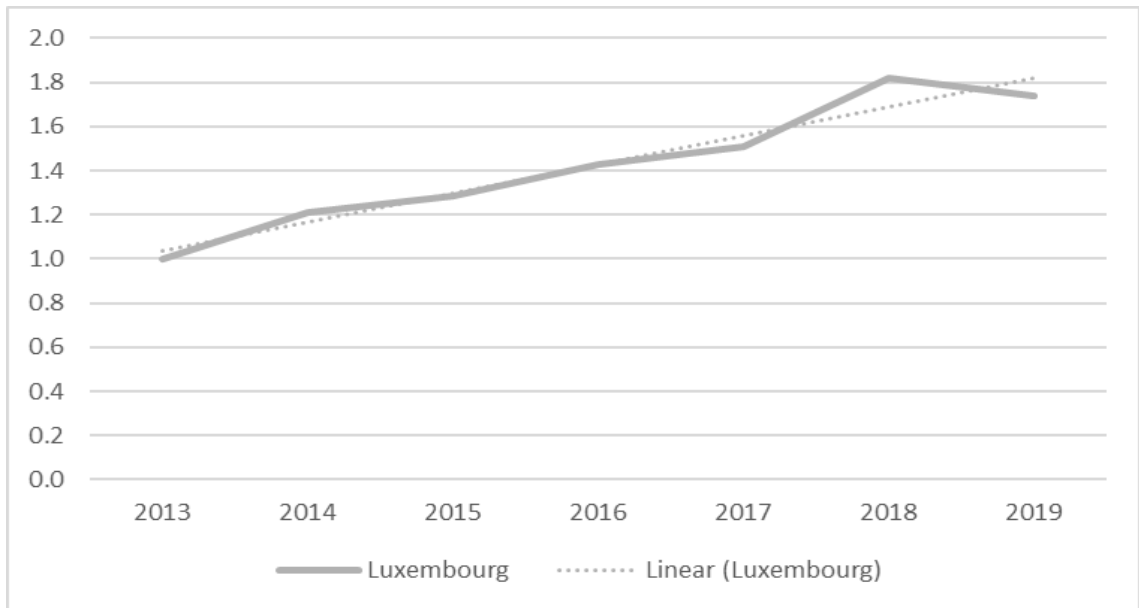


Figure F.19: Trend in SAL vs nonSAL households odds ratio for being at-risk-of-poverty for Luxembourg (2013-2019)

F.9.20 Malta

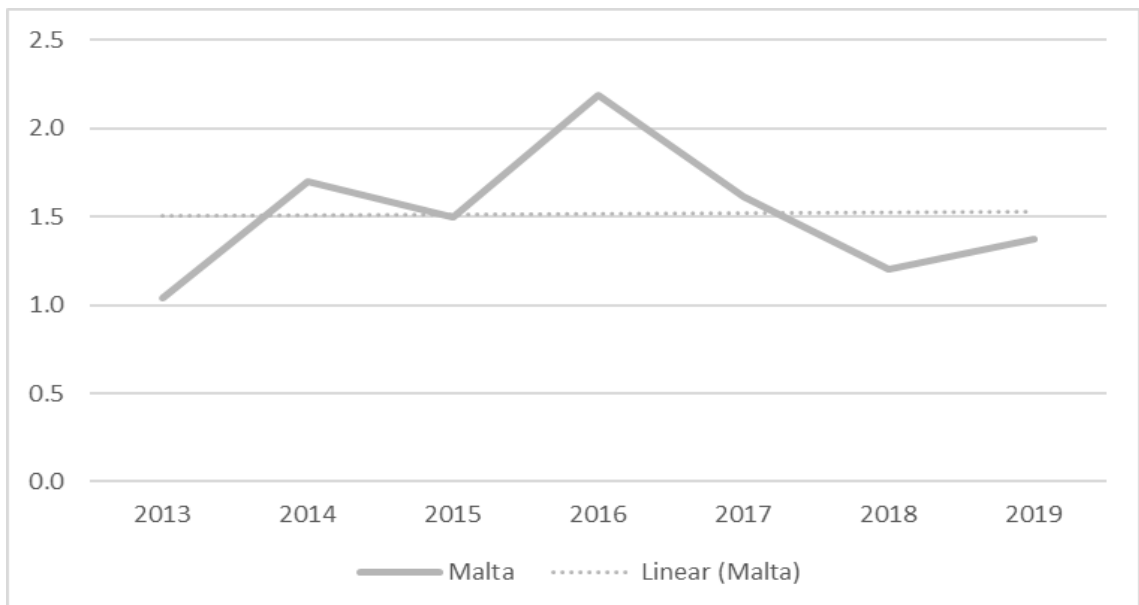


Figure F.20: Trend in SAL vs nonSAL households odds ratio for being at-risk-of-poverty for Malta (2013-2019)

F.9.21 Netherlands

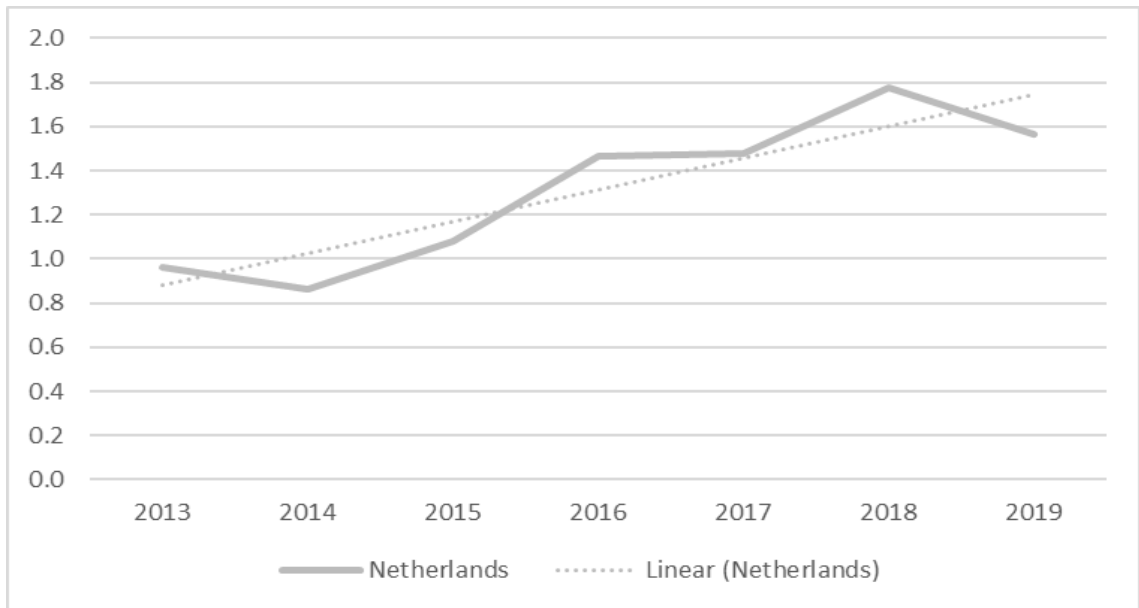


Figure F.21: Trend in SAL vs nonSAL households odds ratio for being at-risk-of-poverty for Netherlands (2013-2019)

F.9.22 Norway

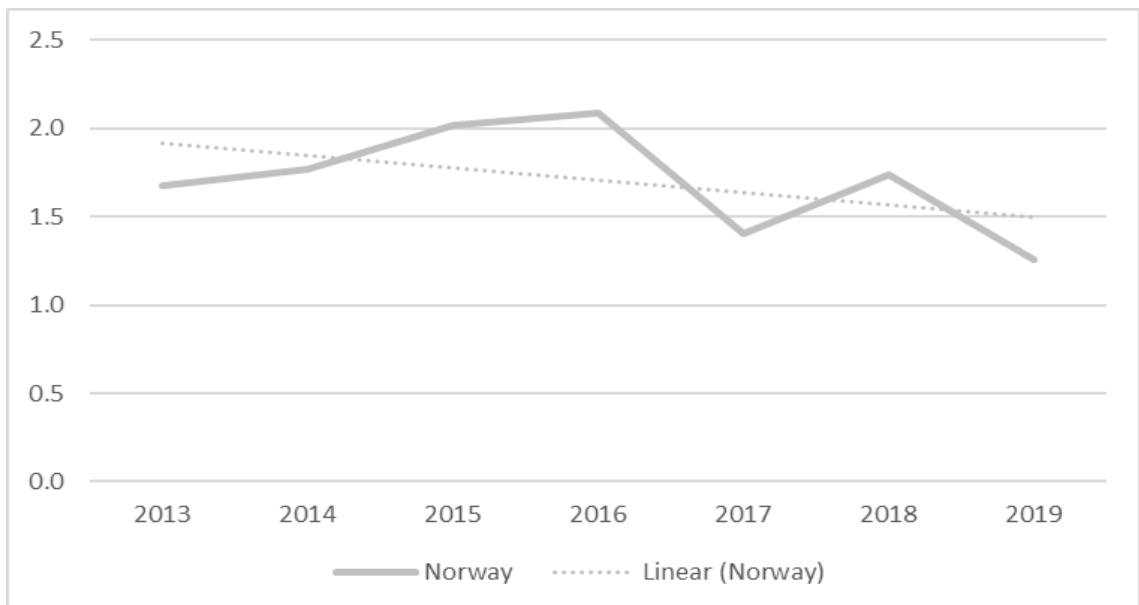


Figure F.22: Trend in SAL vs nonSAL households odds ratio for being at-risk-of-poverty for Norway (2013-2019)

F.9.23 Poland

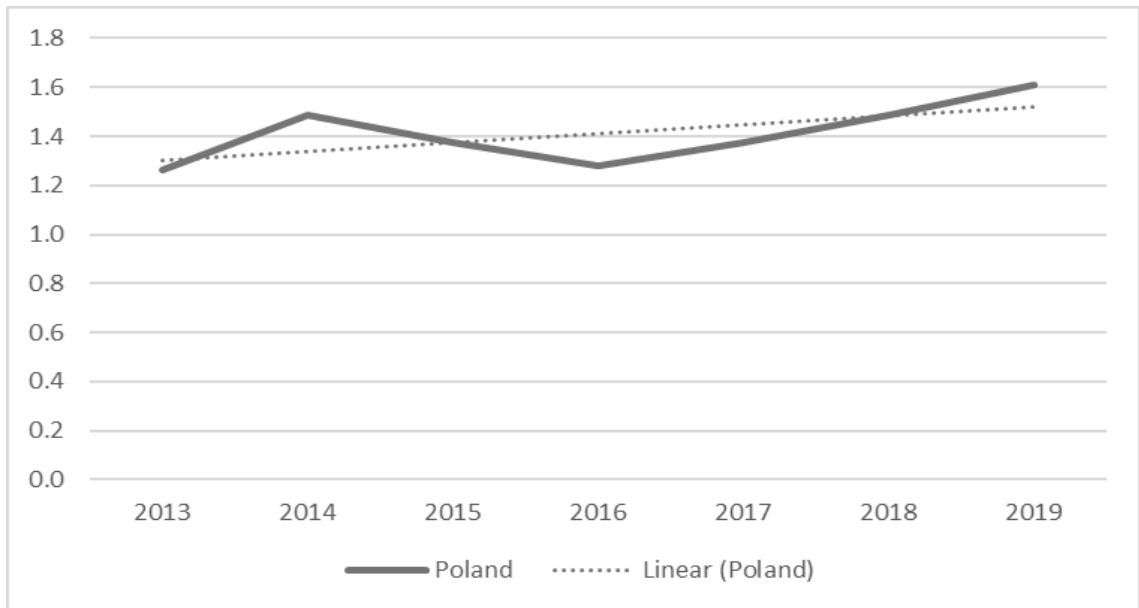


Figure F.23: Trend in SAL vs nonSAL households odds ratio for being at-risk-of-poverty for Poland (2013-2019)

F.9.24 Portugal

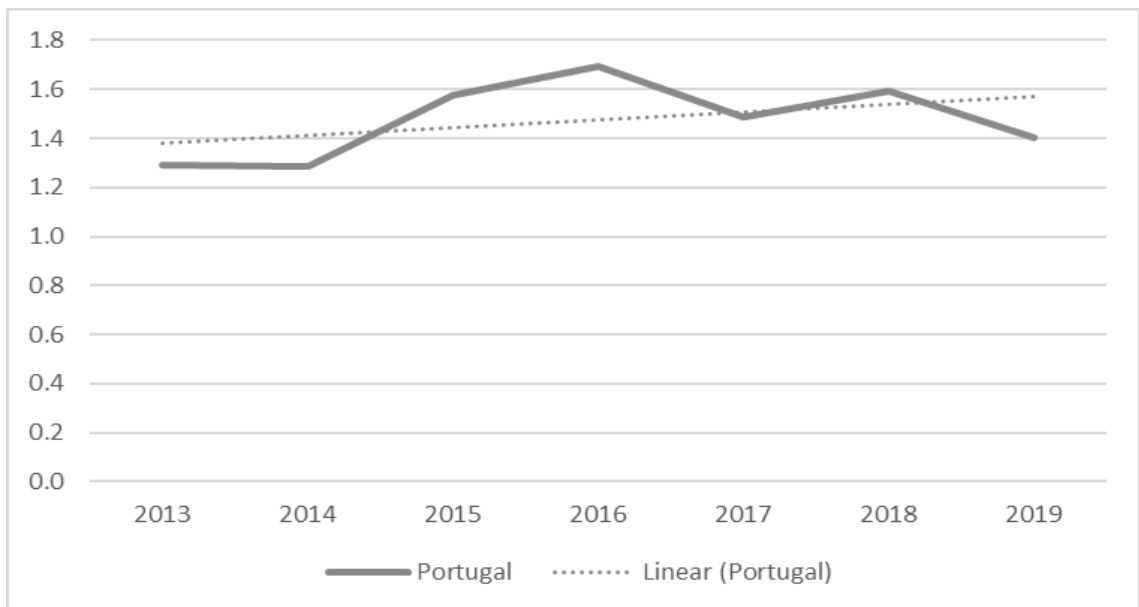


Figure F.24: Trend in SAL vs nonSAL households odds ratio for being at-risk-of-poverty for Portugal (2013-2019)

F.9.25 Romania

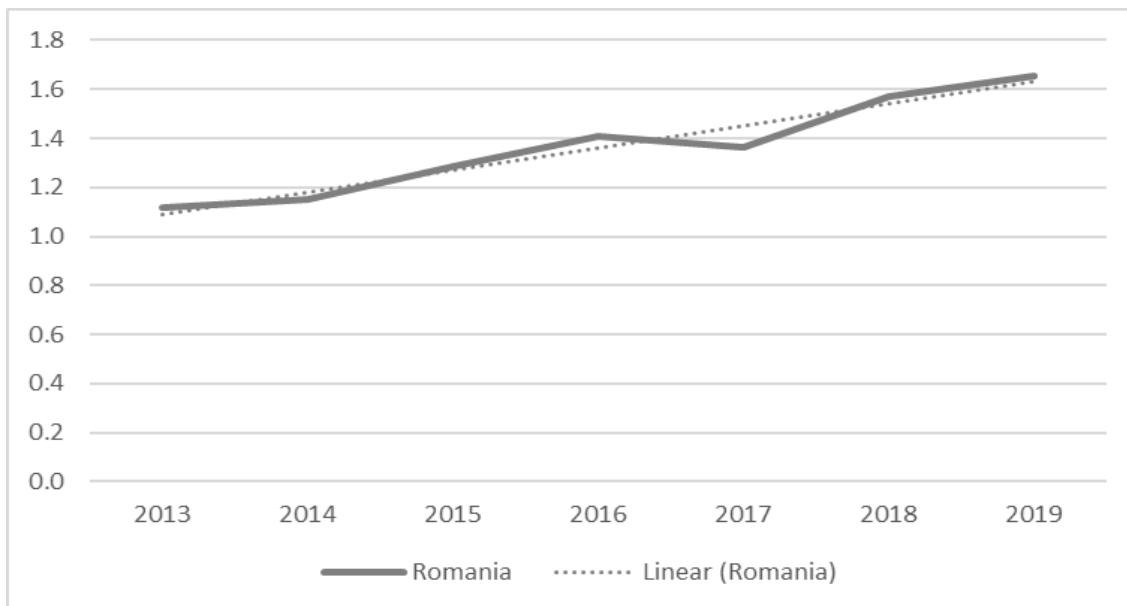


Figure F.25: Trend in SAL vs nonSAL households odds ratio for being at-risk-of-poverty for Romania (2013-2019)

F.9.26 Serbia

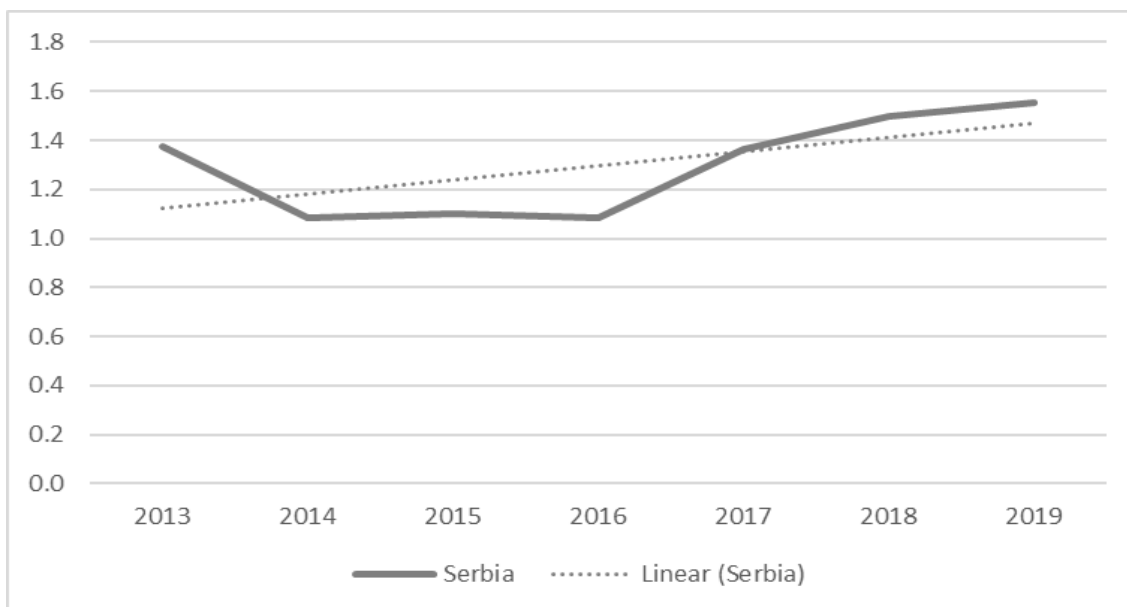


Figure F.26: Trend in SAL vs nonSAL households odds ratio for being at-risk-of-poverty for Serbia (2013-2019)

F.9.27 Slovakia

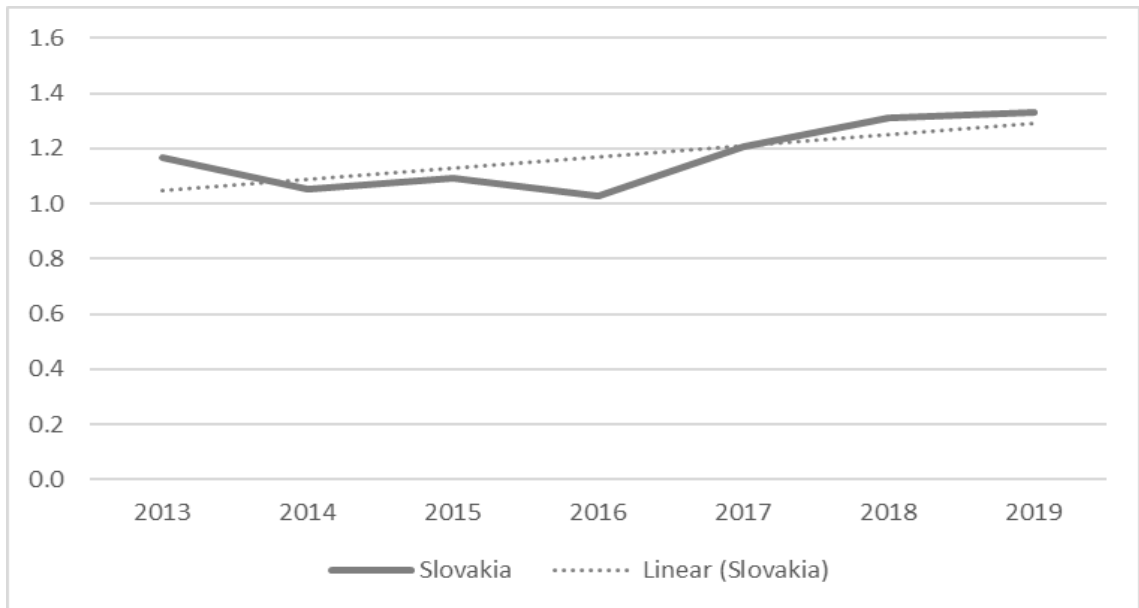


Figure F.27: Trend in SAL vs nonSAL households odds ratio for being at-risk-of-poverty for Slovakia (2013-2019)

F.9.28 Slovenia

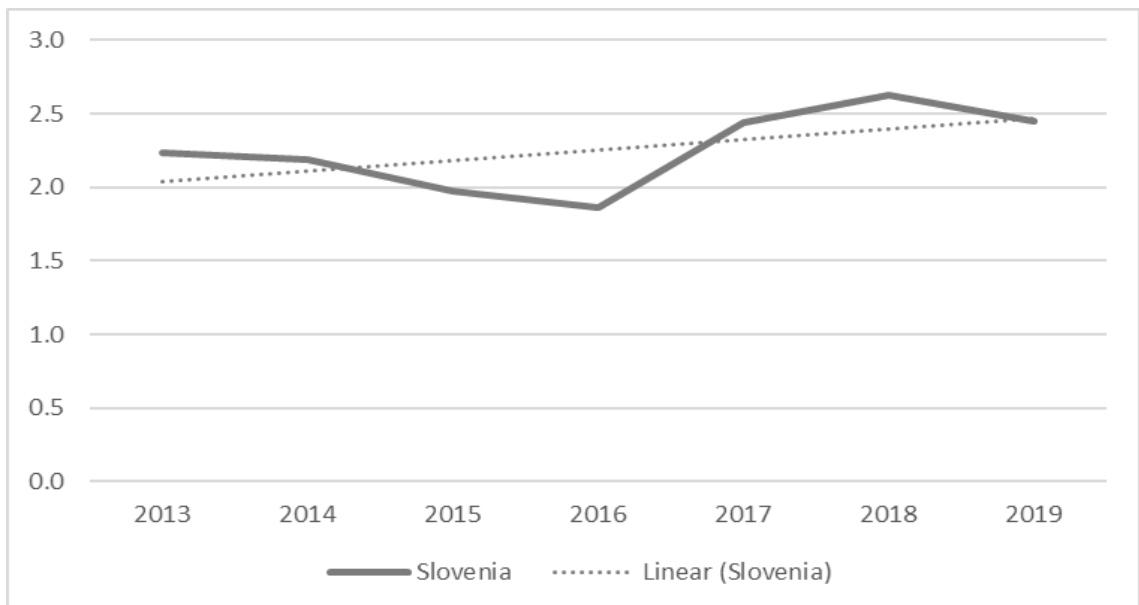


Figure F.28: Trend in SAL vs nonSAL households odds ratio for being at-risk-of-poverty for Slovenia (2013-2019)

F.9.29 Spain

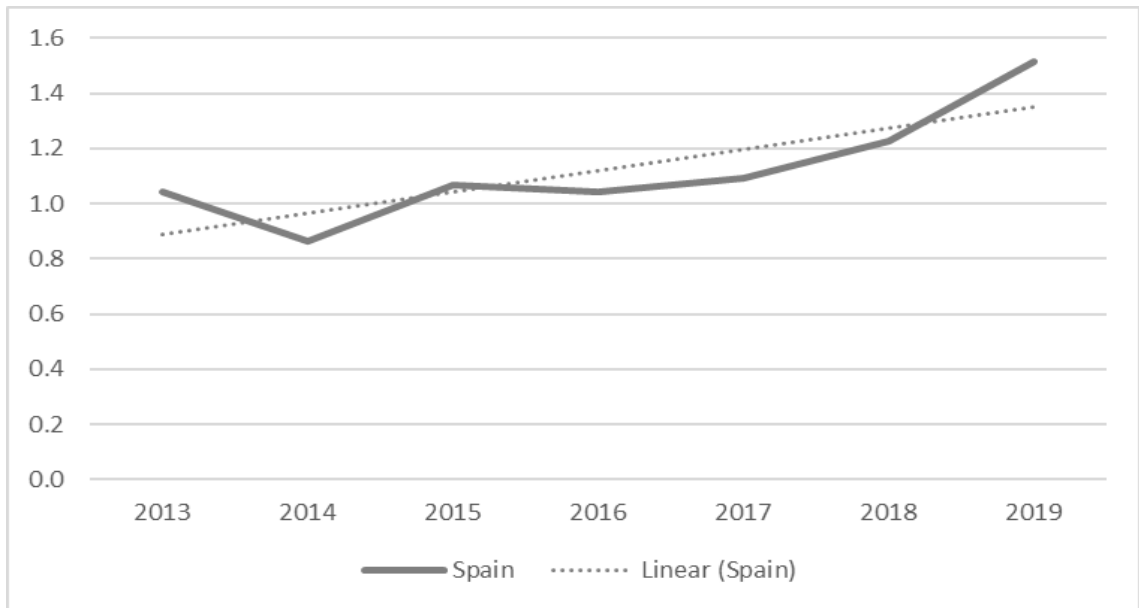


Figure F.29: Trend in SAL vs nonSAL households odds ratio for being at-risk-of-poverty for Spain (2013-2019)

F.9.30 Sweden

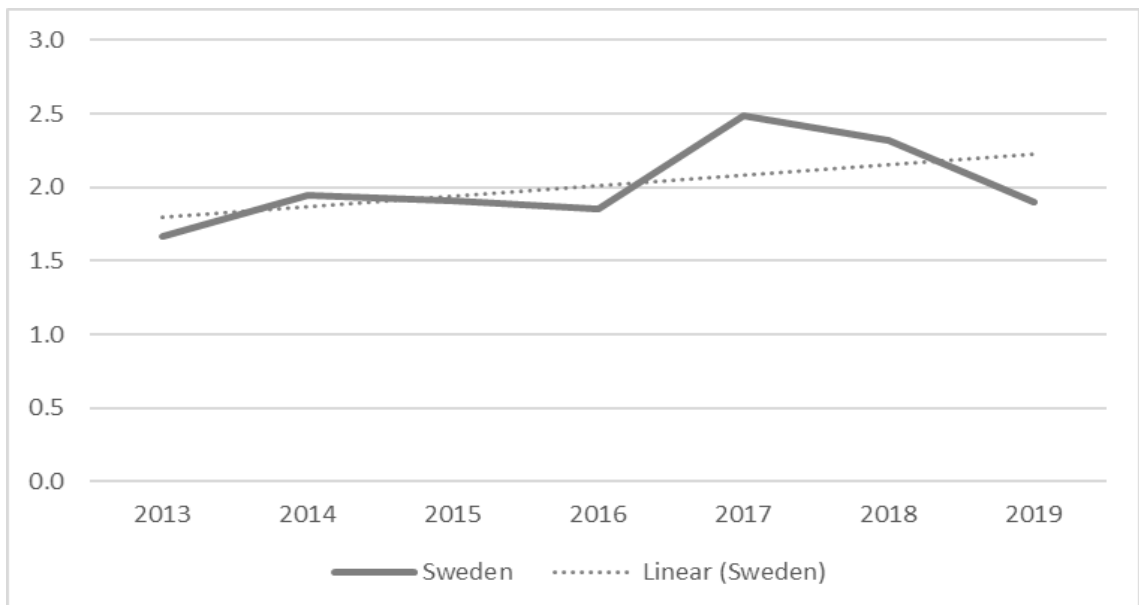


Figure F.30: Trend in SAL vs nonSAL households odds ratio for being at-risk-of-poverty for Sweden (2013-2019)

F.9.31 Switzerland

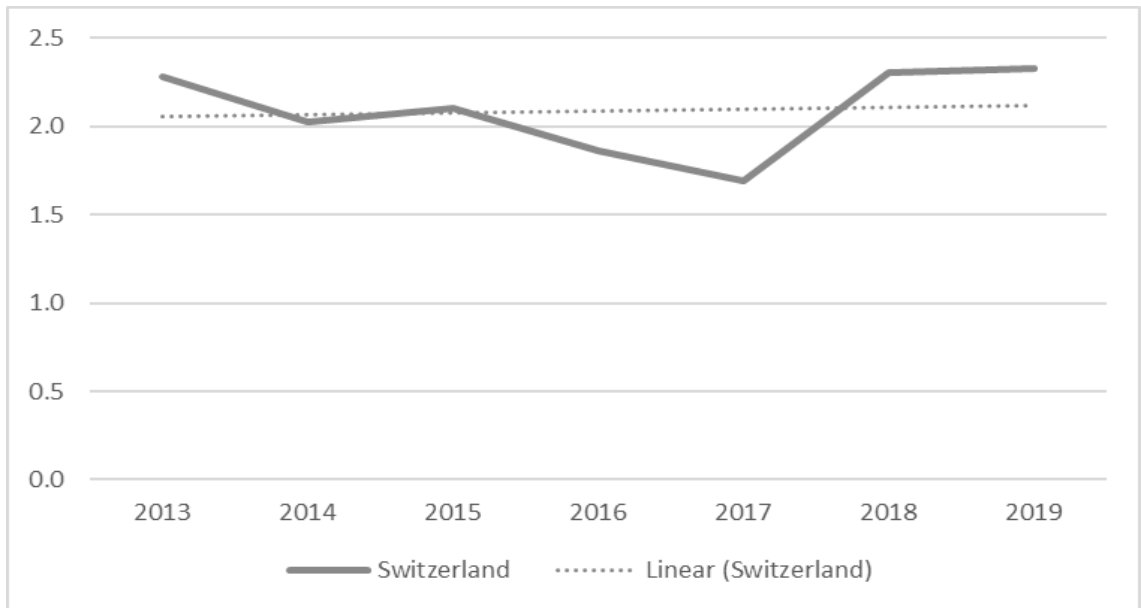


Figure F.31: Trend in SAL vs nonSAL households odds ratio for being at-risk-of-poverty for Switzerland (2013-2019)

F.9.32 United Kingdom

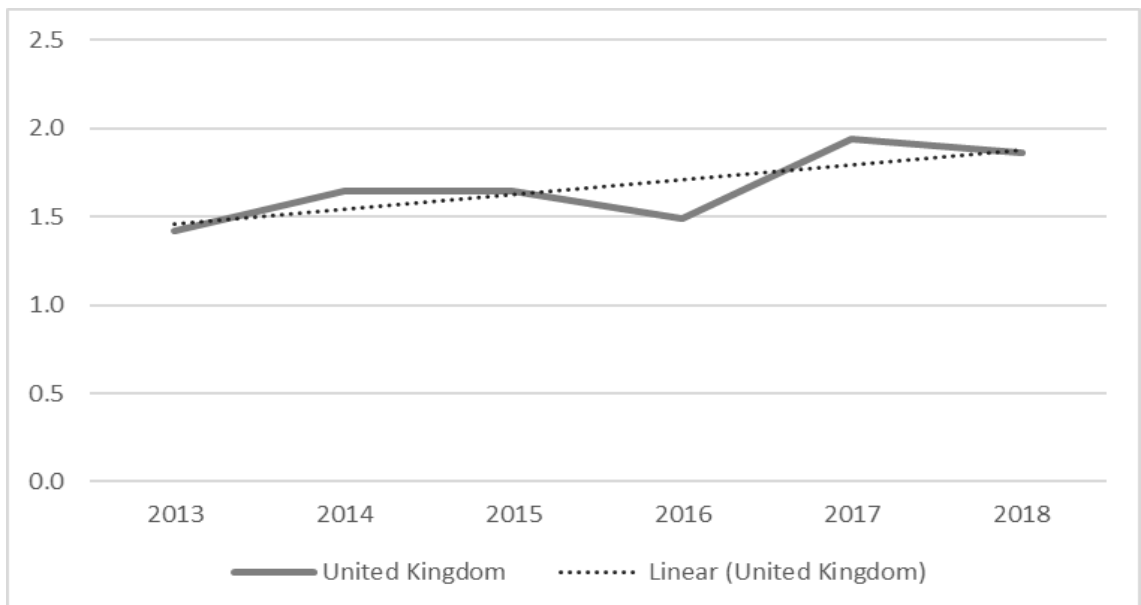


Figure F.32: Trend in SAL vs nonSAL households odds ratio for being at-risk-of-poverty for United Kingdom (2013-2018)

Appendix G. MDI mean differences for SAL and nonSAL households AROP

Table G.1: Mean MDI score differences for SAL and nonSAL AROP 2013-2019 (points)

t-test for equality of means (see next table for confidence intervals)							
	2013	2014	2015	2016	2017	2018	2019
Austria	9.8	10.0	10.4	11.2	13.6	13.8	10.6
Belgium	5.3	5.5	6.8	3.1	4.2	3.5	6.9
Bulgaria	2.9	3.6	4.7	1.7	4.4	3.1	4.3
Croatia	4.6	4.9	4.2	6.5	8.4	6.9	6.3
Cyprus	4.7	4.1	2.0	1.5	0.2*	2.2	0.6
Czech Republic	5.1	11.5	9.0	6.7	7.0	7.0	8.8
Denmark	11.8	18.0	16.6	14.4	7.8	19.8	16.4
Estonia	8.1	9.6	7.8	5.7	7.0	8.0	8.3
Finland	3.9	-0.1	5.1	7.3	4.0	1.9	3.9
France	7.4	7.2	4.5	5.8	6.4	9.3	10.0
Germany	9.1	12.0	10.9	11.2	11.7	11.3	12.5
Greece	3.6	3.2	5.2	5.2	6.3	4.1	5.5
Hungary	6.3	10.5	10.7	9.3	10.8	11.8	10.4
Iceland	14.8	14.5	12.4	10.2	9.0	7.2	-
Ireland	2.5	7.8	11.2	9.4	10.7	6.9	5.4
Italy	9.1	9.3	7.0	9.7	13.1	7.0	11.3
Latvia	4.9	4.5	6.2	5.6	6.4	6.8	6.4
Lithuania	1.7	1.1	5.8	4.8	7.8	7.4	4.3
Luxembourg	10.8	13.8	8.9	9.5	8.4	9.4	5.8
Malta	6.8	5.4	5.7	7.5	0.7**	7.2	5.9
Netherlands	12.4	7.2	18.1	9.4	10.0	12.6	8.4
Norway	10.5	7.1	5.0	5.4	1.9	7.4	15.2
Poland	7.0	9.1	9.0	9.2	8.4	10.3	9.9
Portugal	7.8	8.1	6.1	7.2	10.8	8.8	10.2
Romania	8.6	9.9	7.7	10.0	7.3	9.3	8.1
Serbia	10.5	5.8	12.2	5.3	9.4	8.4	14.4
Slovakia	6.6	5.8	12.0	12.3	9.3	10.3	9.3
Slovenia	7.1	10.4	9.4	10.9	10.4	12.3	8.2
Spain	6.3	4.2	5.5	8.7	5.4	9.3	11.2
Sweden	7.2	4.3	11.5	6.0	5.8	7.7	6.0
Switzerland	6.4	8.1	9.9	7.8	7.9	11.8	5.3
United Kingdom	5.5	10.6	7.9	10.3	8.2	9.0	-

Unless otherwise indicated, $p < 0.000$
* $p = 0.169$
** $p = 0.045$

Table G.2: 99% confidence intervals for mean MDI differences for SAL and nonSAL AROP 2013-2019

t-test for equality of means														
	2013		2014		2015		2016		2017		2018		2019	
	99% confidence intervals		99% confidence intervals		99% confidence intervals		99% confidence intervals		99% confidence intervals		99% confidence intervals		99% confidence intervals	
	LCI	UCI	LCI	UCI	LCI	UCI	LCI	UCI	LCI	UCI	LCI	UCI	LCI	UCI
Austria	9.6	9.9	9.9	10.2	10.2	10.5	11.0	11.4	13.5	13.8	13.6	13.9	10.5	10.8
Belgium	5.2	5.5	5.4	5.6	6.6	6.9	3.0	3.3	4.1	4.4	3.3	3.6	6.8	7.1
Bulgaria	2.7	3.1	3.3	3.8	4.5	4.9	1.5	1.9	4.2	4.6	2.9	3.3	4.1	4.5
Croatia	4.4	4.8	4.7	5.1	4.1	4.4	6.3	6.7	8.2	8.6	6.7	7.0	6.2	6.5
Cyprus	4.3	5.1	3.6	4.5	1.6	2.4	1.1	1.9	-0.2	0.7	1.8	2.6	0.2	1.0
Czech Republic	5.0	5.3	11.2	11.7	8.8	9.3	6.5	6.9	6.8	7.2	6.8	7.1	8.7	9.0
Denmark	11.5	11.9	17.7	18.3	16.4	16.9	14.2	14.7	7.5	8.0	19.5	20.0	16.1	16.7
Estonia	7.8	8.5	9.4	9.9	7.6	8.1	5.5	5.9	6.7	7.2	7.8	8.2	8.1	8.6
Finland	3.7	4.0	-0.2	0.0	4.9	5.2	7.2	7.5	3.8	4.2	1.8	2.1	3.7	4.1
France	7.4	7.5	7.1	7.3	4.4	4.5	5.8	5.9	6.3	6.4	9.2	9.3	9.9	10.0
Germany	9.1	9.2	12.0	12.0	10.9	11.0	11.1	11.2	11.7	11.7	11.2	11.3	12.5	12.5
Greece	3.5	3.7	3.1	3.3	5.1	5.3	5.1	5.3	6.2	6.4	3.9	4.2	5.4	5.7
Hungary	6.1	6.5	10.3	10.7	10.5	10.9	9.1	9.5	10.6	11.0	11.6	12.0	10.2	10.6
Iceland	13.5	16.1	13.1	15.8	11.4	13.5	9.5	10.9	8.3	9.6	6.5	8.0	-	-
Ireland	2.2	2.7	7.6	8.1	10.9	11.4	9.2	9.7	10.5	11.0	6.7	7.1	5.2	5.7
Italy	9.0	9.1	9.2	9.4	7.0	7.1	9.6	9.8	13.0	13.2	6.9	7.0	11.2	11.4
Latvia	4.6	5.2	4.2	4.7	5.9	6.4	5.3	5.8	6.1	6.6	6.6	7.0	6.2	6.6
Lithuania	1.5	1.9	0.9	1.3	5.6	6.0	4.5	5.0	7.6	8.0	7.1	7.6	4.1	4.6
Luxembourg	10.0	11.6	13.0	14.6	8.2	9.6	8.8	10.2	7.8	8.9	8.9	9.9	5.2	6.3
Malta	5.7	8.0	4.3	6.5	4.7	6.8	6.6	8.4	-0.2	1.6	6.0	8.3	4.8	6.9
Netherlands	12.2	12.6	7.1	7.4	18.0	18.3	9.3	9.6	9.8	10.1	12.5	12.7	8.2	8.5
Norway	10.2	10.7	6.8	7.4	4.8	5.3	5.2	5.6	1.7	2.2	7.2	7.7	15.0	15.5
Poland	6.9	7.0	9.0	9.2	8.9	9.1	9.1	9.3	8.3	8.5	10.2	10.4	9.8	10.0
Portugal	7.7	8.0	8.0	8.3	5.9	6.2	7.0	7.3	10.6	10.9	8.6	8.9	10.1	10.4
Romania	8.5	8.7	9.8	10.0	7.6	7.8	9.9	10.1	7.2	7.5	9.2	9.4	8.0	8.2
Serbia	10.3	10.7	5.6	6.0	12.0	12.4	5.1	5.4	9.3	9.6	8.1	8.6	14.1	14.6
Slovakia	6.4	6.9	5.5	6.1	11.7	12.3	12.0	12.6	9.0	9.6	10.1	10.6	9.1	9.6
Slovenia	7.0	7.3	10.1	10.7	9.1	9.7	10.6	11.2	10.2	10.7	12.1	12.6	7.9	8.4
Spain	6.2	6.4	4.2	4.3	5.4	5.5	8.6	8.8	5.3	5.5	9.2	9.4	11.1	11.3
Sweden	7.1	7.3	4.1	4.4	11.3	11.7	5.9	6.2	5.7	6.0	7.6	7.9	5.9	6.2
Switzerland	6.2	6.5	7.9	8.3	9.7	10.1	7.7	8.0	7.7	8.0	11.6	12.0	5.1	5.4
United Kingdom	5.4	5.6	10.6	10.7	7.9	8.0	10.2	10.3	8.2	8.3	9.0	9.0	-	-

Appendix H. Social transfers analysis - samples

Table H.1: Samples after removing negative incomes and trimming for $-2.0 \leq \text{standardised TDHI} \leq 2.0$

		SAL	nonSAL	total
2013	full sample	33,250	212,102	245,352
	sample loss by removing negative incomes	2,095 (6.3%)	5,330 (2.5%)	7,425 (3.0%)
	sample loss standardised TDHI > 2.0	523 (1.6%)	8,097 (3.8%)	8,620 (3.5%)
	missing	6	73	79
	unused sample	2,624 (7.9%)	13,500(6.4%)	16,124 (6.6%)
	sample used for analysis	30,626	198,602	229,228
2014	full sample	33,321	213,737	247,058
	sample loss by removing negative incomes	2,079 (6.2%)	5,491 (2.6%)	7,570 (3.1%)
	sample loss standardised TDHI > 2.0	606 (1.8%)	8,300 (3.9%)	8,906 (3.6%)
	missing	0	7	7
	unused sample	2,685 (8.1%)	13,798 (6.5%)	16,483 (6.7%)
	sample used for analysis	30,636	199,939	230,575
2015	full sample	33,875	215,226	249,101
	sample loss by removing negative incomes	2,180 (6.4%)	5,433 (2.5%)	7,613 (3.1%)
	sample loss standardised TDHI > 2.0	569 (1.7%)	8,009 (3.7%)	8,578 (3.4%)
	missing	1	2	3
	unused sample	2,750 (8.1%)	13,444 (6.2%)	16,194 (6.5%)
	sample used for analysis	31,125	201,782	232,907
2016	full sample	34,260	234,289	268,549
	sample loss by removing negative incomes	2,168 (6.3%)	5,960 (2.5%)	8,128 (3.0%)
	sample loss standardised TDHI > 2.0	540 (1.6%)	8,021 (3.4%)	8,561 (3.2%)
	missing	0	0	0
	unused sample	2,708 (7.9%)	13,981 (6.0%)	16,689 (6.2%)
	sample used for analysis	31,552	220,308	251,860
2017	full sample	37,263	241,763	279,026
	sample loss by removing negative incomes	2,321 (6.2%)	5,763 (2.4%)	8,084 (2.9%)
	sample loss standardised TDHI > 2.0	586 (1.6%)	8,093 (3.3%)	8,679 (3.1%)
	missing	0	0	0
	unused sample	2,907 (7.8%)	13,856 (5.7%)	16,763 (6.0%)
	sample used for analysis	34,356	227,907	262,263
2018	full sample	37,924	243,808	281,732
	sample loss by removing negative incomes	2,421 (6.4%)	5,423 (2.2%)	7,844 (2.8%)
	sample loss standardised TDHI > 2.0	573 (1.5%)	8,514 (3.5%)	9,087 (3.2%)
	missing	0	0	0
	unused sample	2,994 (7.9%)	13,937 (5.7%)	16,931 (6.0%)
	sample used for analysis	34,930	229,871	264,801
2019	full sample	33,128	230,199	263,327
	sample loss by removing negative incomes	1,649 (5.0%)	4,651 (2.0%)	6,300 (2.4%)
	sample loss standardised TDHI > 2.0	504 (1.5%)	7,483 (3.3%)	7,987 (3.0%)
	missing	6	6	12
	unused sample	2,159 (6.5%)	12,140 (5.3%)	14,299 (5.4%)
	sample used for analysis	30,969	218,059	249,028
Sample loss standardised TDHI < 2 = 0				

Table H.2: Samples after removing negative incomes and selecting HEDI =< MHEDI

		SAL	nonSAL	total
2013	full sample	33,250	212,102	245,352
	sample loss by removing negative incomes	2,095 (6.3%)	5,330 (2.5%)	7,425 (3.0%)
	sample loss HEDI > MHEDI	12,665 (38.1%)	114,172 (53.8%)	126,837 (51.7%)
	missing	6	73	79
	unused sample	14,766 (44.4%)	119,575 (56.4%)	134,341 (54.8%)
	sample used for analysis	18,484	92,527	111,011
2014	full sample	33,321	213,737	247,058
	sample loss by removing negative incomes	2,079 (6.2%)	5,491 (2.6%)	7,570 (3.1%)
	sample loss HEDI > MHEDI	12,741 (38.2%)	114,768 (53.7%)	127,509 (51.6%)
	missing	0	7	7
	unused sample	14,820 (44.5%)	120,266 (56.3%)	135,086 (54.7%)
	sample used for analysis	18,501	93,471	111,972
2015	full sample	33,875	215,226	249,101
	sample loss by removing negative incomes	2,180 (6.4%)	5,433 (2.5%)	7,613 (3.1%)
	sample loss HEDI > MHEDI	12,766 (37.7%)	115,640 (53.7%)	128,406
	missing	1	2	3
	unused sample	14,947 (44.1%)	121,075 (56.3%)	136,022 (54.6%)
	sample used for analysis	18,928	94,151	113,079
2016	full sample	34,260	234,289	268,549
	sample loss by removing negative incomes	2,168 (6.3%)	5,960 (2.5%)	8,128 (3.0%)
	sample loss HEDI > MHEDI	12,753 (37.2%)	124,302 (53.1%)	137,055 (51.0%)
	missing	0	0	0
	unused sample	14,921 (43.6%)	130,262 (55.6%)	145,183 (54.1%)
	sample used for analysis	19,339	104,027	123,366
2017	full sample	37,263	241,763	279,026
	sample loss by removing negative incomes	2,321 (6.2%)	5,763 (2.4%)	8,084 (2.9%)
	sample loss HEDI > MHEDI	13,608 (36.5%)	127,583 (52.8%)	141,191 (50.6%)
	missing	0	0	0
	unused sample	15,929 (42.7%)	133,346 (55.2%)	149,275 (53.5%)
	sample used for analysis	21,334	108,417	129,751
2018	full sample	37,924	243,808	281,732
	sample loss by removing negative incomes	2,421 (6.4%)	5,423 (2.2%)	7,844 (2.8%)
	sample loss HEDI > MHEDI	13,452 (35.5%)	128,213 (52.6%)	141,665 (50.3%)
	missing	0	0	0
	unused sample	15,873 (41.9%)	133,636 (54.8%)	149,509 (53.1%)
	sample used for analysis	22,051	110,172	132,223
2019	full sample	33,128	230,199	263,327
	sample loss by removing negative incomes	1,649 (5.0%)	4,651 (2.0%)	6,300 (2.4%)
	sample loss HEDI > MHEDI	11,455 (34.6%)	120,029 (52.1%)	131,484 (49.9%)
	missing	6	6	12
	unused sample	13,110 (39.6%)	124,686 (54.2%)	137,796 (52.3%)
	sample used for analysis	20,018	105,513	125,531

Appendix I. Contribution of social transfers to household income

I.1 Trimmed sample analysis

Table I.1: Social transfers (excluding old age and survivor benefits) component of SAL households total disposable income, by country averages

	2013 (%)	2014 (%)	2015 (%)	2016 (%)	2017 (%)	2018 (%)	2019 (%)	averages (%)
Greece	7.7	7.4	7.6	7.3	7.3	7.1	8.8	7.6
Italy	7.1	7.5	7.8	8.6	8.8	9.1	8.4	8.2
Portugal	9.1	8.9	8.9	9.9	8.6	8.1	8.0	8.8
Romania	11.0	10.2	10.5	8.8	10.4	9.6	8.5	9.9
Latvia	9.7	9.2	9.7	10.4	10.3	11.0	9.8	10.0
Slovakia	13.5	10.7	9.7	9.8	9.8	11.6	12.6	11.1
Poland	11.7	12.6	11.2	11.6	11.9	13.0	12.0	12.0
Estonia	13.8	12.4	11.9	11.2	10.5	12.0	12.9	12.1
Cyprus	11.9	11.8	11.7	12.4	10.8	14.0	12.3	12.1
France	13.1	12.8	12.9	11.0	12.0	12.9	12.1	12.4
Croatia	15.8	15.0	15.7	11.0	10.1	10.4	9.7	12.5
Lithuania	14.0	14.8	10.6	12.7	10.6	12.5	14.4	12.8
Bulgaria	10.6	17.9	11.2	9.8	13.0	14.1	13.2	12.8
Hungary	15.9	14.7	13.9	16.5	13.2	16.0	5.4	13.7
Serbia	15.4	16.2	16.1	13.8	13.4	12.7	16.7	14.9
Spain	14.9	16.1	14.5	13.9	16.1	14.3	15.9	15.1
Luxembourg	20.0	17.9	17.9	13.7	13.8	12.3	12.8	15.5
Switzerland	13.6	15.2	17.0	18.3	19.5	18.0	15.0	16.7
Czech Republic	16.0	17.9	17.5	16.6	17.6	16.5	17.7	17.1
Germany	15.8	16.4	17.2	18.5	17.8	17.5	17.2	17.2
United Kingdom	17.8	17.1	17.1	17.8	16.5	17.2	-	17.3
Slovenia	17.6	17.9	16.0	17.6	17.8	17.8	17.9	17.5
Austria	17.2	18.3	17.3	16.6	16.1	18.8	20.1	17.8
Finland	17.7	16.3	17.8	20.4	19.5	19.0	19.6	18.6
Iceland	26.6	22.0	21.0	16.9	13.8	12.9	-	18.9
Malta	18.1	22.2	21.6	31.2	17.9	17.5	14.5	20.4
Sweden	22.9	20.9	22.9	21.5	22.9	20.4	22.9	22.1
Ireland	22.5	26.0	24.0	25.3	22.4	23.0	22.6	23.7
Denmark	27.1	24.7	25.6	22.5	23.8	24.7	20.1	24.1
Belgium	25.8	27.5	25.0	24.2	24.8	22.5	26.7	25.2
Netherlands	34.6	31.1	35.9	33.9	35.6	36.1	33.7	34.4
Norway	40.6	36.5	45.7	37.4	37.2	27.8	38.2	37.6
Averages	17.2	17.1	17.0	16.6	16.0	16.0	16.0	

Table I.2: Social transfers (excluding old age and survivor benefits) component of nonSAL households total disposable income, by country averages

	2013 (%)	2014 (%)	2015 (%)	2016 (%)	2017 (%)	2018 (%)	2019 (%)	averages (%)
Greece	4.0	3.5	3.5	3.8	4.0	4.4	5.0	4.0
Romania	5.2	4.8	4.8	5.5	5.5	4.6	4.4	5.0
Portugal	6.3	6.7	6.0	5.6	5.2	4.8	4.4	5.6
Italy	5.5	5.5	5.8	5.7	5.7	5.9	6.2	5.8
Slovakia	7.1	6.6	5.9	5.6	4.9	5.4	5.5	5.9
Poland	5.1	5.0	5.1	5.0	7.1	7.3	6.6	5.9
Czech Republic	6.6	6.5	6.6	6.7	5.9	5.6	5.5	6.2
Serbia	7.5	7.1	7.0	7.0	6.4	5.1	4.8	6.4
Switzerland	6.0	7.1	6.4	6.5	7.1	6.8	6.5	6.6
Croatia	9.1	8.7	7.6	6.5	5.7	5.5	5.1	6.9
Cyprus	6.9	7.9	7.5	7.8	7.5	7.1	7.0	7.4
United Kingdom	8.4	7.9	7.6	7.1	8.0	7.3	-	7.7
Latvia	8.2	8.2	7.4	7.8	7.9	7.8	8.2	7.9
Bulgaria	7.1	9.0	8.2	6.7	7.7	8.9	8.1	8.0
Iceland	11.1	9.5	8.4	7.8	5.4	5.9	-	8.0
Germany	8.5	8.5	9.0	8.8	8.4	7.8	7.5	8.4
Estonia	8.3	8.9	7.5	8.4	9.1	8.3	8.4	8.4
Hungary	10.8	10.0	9.1	9.4	8.6	8.3	5.6	8.8
Luxembourg	10.5	10.2	9.6	8.5	8.6	8.4	7.5	9.0
Lithuania	10.6	9.4	9.1	9.1	8.9	8.9	10.8	9.5
Spain	11.7	11.7	10.4	9.4	8.6	7.8	8.0	9.7
Malta	11.4	11.1	10.7	9.0	9.1	8.4	8.1	9.7
Austria	10.7	10.6	10.4	10.2	10.0	10.2	10.0	10.3
Slovenia	12.4	11.0	10.6	10.5	10.4	10.3	9.4	10.7
France	11.0	11.0	11.1	11.1	11.3	11.3	10.6	11.1
Belgium	12.3	12.4	12.9	12.3	11.6	10.5	11.8	12.0
Netherlands	12.6	13.1	12.6	12.2	11.9	10.9	10.6	12.0
Denmark	14.3	15.0	14.4	13.6	13.8	12.9	12.3	13.8
Finland	14.5	14.1	14.5	15.4	15.3	14.8	14.0	14.7
Sweden	14.8	15.6	15.5	15.0	14.3	14.2	14.3	14.8
Norway	15.8	14.1	15.6	15.2	15.3	13.9	14.4	14.9
Ireland	18.5	16.7	15.9	14.9	13.9	13.2	13.6	15.2
Averages	9.8	9.6	9.3	9.0	8.8	8.5	8.5	

Table I.3: Difference in social transfers (excluding old age and survivor benefits) component between SAL and nonSAL households total disposable income, by country averages

	2013 (%)	2014 (%)	2015 (%)	2016 (%)	2017 (%)	2018 (%)	2019 (%)	averages (%)
France	2.1	1.8	1.7	-0.1	0.7	1.6	1.4	1.3
Latvia	1.5	1.0	2.3	2.7	2.4	3.3	1.6	2.1
Italy	1.6	2.0	2.0	2.9	3.1	3.2	2.1	2.4
Portugal	2.9	2.2	2.9	4.3	3.3	3.4	3.6	3.2
Lithuania	3.5	5.4	1.5	3.6	1.7	3.6	3.5	3.3
Greece	3.7	3.9	4.1	3.4	3.3	2.6	3.8	3.6
Estonia	5.5	3.4	4.3	2.8	1.4	3.8	4.6	3.7
Finland	3.2	2.2	3.3	5.0	4.2	4.2	5.5	3.9
Cyprus	5.0	3.9	4.1	4.6	3.3	6.9	5.3	4.7
Hungary	5.1	4.7	4.8	7.1	4.6	7.7	-0.2	4.8
Bulgaria	3.5	8.9	3.0	3.1	5.3	5.2	5.1	4.9
Romania	5.8	5.4	5.7	3.2	4.9	5.0	4.1	4.9
Slovakia	6.4	4.0	3.8	4.1	4.9	6.3	7.1	5.2
Spain	3.2	4.4	4.1	4.5	7.6	6.4	8.0	5.4
Croatia	6.8	6.4	8.1	4.5	4.4	4.9	4.6	5.7
Poland	6.7	7.7	6.1	6.6	4.8	5.7	5.4	6.1
Luxembourg	9.5	7.8	8.3	5.2	5.2	3.8	5.3	6.5
Slovenia	5.2	6.8	5.4	7.2	7.4	7.5	8.5	6.9
Sweden	8.1	5.3	7.4	6.5	8.7	6.3	8.6	7.3
Austria	6.5	7.7	6.9	6.3	6.2	8.6	10.1	7.5
Ireland	4.0	9.3	8.1	10.5	8.5	9.8	9.0	8.5
Serbia	7.9	9.2	9.1	6.8	7.0	7.5	11.9	8.5
Germany	7.3	7.9	8.1	9.7	9.4	9.7	9.8	8.8
United Kingdom	9.4	9.2	9.4	10.7	8.5	9.9	-	9.5
Switzerland	7.6	8.1	10.6	11.8	12.4	11.1	8.5	10.0
Denmark	12.8	9.7	11.2	8.9	10.0	11.7	7.8	10.3
Malta	6.7	11.0	11.0	22.2	8.7	9.1	6.4	10.7
Iceland	15.5	12.5	12.6	9.2	8.4	6.9	-	10.8
Czech Republic	9.4	11.4	11.0	10.0	11.7	10.9	12.2	10.9
Belgium	13.5	15.1	12.1	11.8	13.2	12.0	14.9	13.3
Netherlands	21.9	18.0	23.3	21.8	23.7	25.2	23.1	22.4
Norway	24.7	22.4	30.0	22.2	21.9	13.9	23.7	22.7
Averages	7.4	7.5	7.7	7.6	7.2	7.4	7.5	

Table I.4: Reduction in difference between nonSAL and SAL households total disposable income as a result of social transfers (excluding old age and survivor benefits), by country averages

	2013 (%)	2014 (%)	2015 (%)	2016 (%)	2017 (%)	2018 (%)	2019 (%)	averages (%)
France	2.7	2.8	1.8	0.8	1.8	2.5	1.8	2.0
Latvia	3.1	2.3	3.0	3.5	3.1	3.3	2.0	2.9
Portugal	3.2	2.7	3.1	4.4	3.1	3.5	3.6	3.4
Italy	2.5	2.6	3.0	3.9	4.2	4.1	3.8	3.5
Estonia	5.5	3.4	3.9	3.2	2.7	3.5	4.2	3.8
Greece	3.9	4.6	4.8	4.5	4.1	3.4	3.8	4.2
Hungary	5.9	4.7	3.9	6.2	4.4	5.6	-0.3	4.4
Lithuania	7.4	6.1	3.9	5.4	2.7	4.6	5.2	5.0
Finland	5.0	3.7	5.1	6.3	5.0	5.3	6.1	5.2
Cyprus	5.8	4.9	4.7	5.5	3.8	7.5	5.3	5.4
Slovakia	6.9	4.5	4.9	4.8	4.7	6.1	6.6	5.5
Bulgaria	4.1	10.0	3.1	4.3	5.5	7.0	5.2	5.6
Poland	5.7	6.4	5.6	5.6	5.2	5.8	5.4	5.7
Luxembourg	8.1	6.6	6.8	4.4	4.8	3.6	5.9	5.7
Romania	7.2	6.4	6.5	4.3	6.5	5.7	5.2	6.0
Croatia	9.6	7.5	8.6	4.2	4.5	4.2	4.0	6.1
Slovenia	5.9	6.2	5.4	6.9	6.6	7.2	6.3	6.4
Germany	6.0	5.9	7.4	7.8	6.7	7.5	7.1	6.9
Austria	8.4	7.6	7.2	6.2	5.3	7.0	9.0	7.2
Spain	6.2	7.5	6.8	6.7	9.0	7.3	8.9	7.5
Malta	5.5	8.0	7.6	13.9	7.2	7.0	7.8	8.1
United Kingdom	9.3	8.0	7.8	10.0	7.5	8.1	-	8.4
Sweden	9.3	7.7	10.2	7.4	8.2	9.5	9.1	8.8
Serbia	7.5	10.6	10.3	8.2	8.3	7.4	11.0	9.1
Czech Republic	9.5	11.2	10.2	8.8	9.8	9.0	9.8	9.8
Iceland	14.1	11.7	12.1	9.1	7.5	6.8	-	10.2
Ireland	8.5	11.9	10.1	10.8	9.8	11.7	11.2	10.6
Switzerland	7.7	8.4	11.0	12.9	13.1	11.5	9.7	10.6
Denmark	14.2	12.5	11.6	10.4	8.6	10.7	9.0	11.0
Belgium	10.9	12.5	11.2	10.3	12.4	11.4	14.1	11.8
Netherlands	14.3	13.2	16.0	14.4	14.9	14.8	14.5	14.6
Norway	20.2	18.8	24.5	18.6	19.4	15.6	19.7	19.5
Averages	7.6%	7.5%	7.6%	7.3%	6.9%	7.1%	6.7%	

Table I.5: Gap between SAL and nonSAL households total household disposal income, pre and post social transfers, and average contribution of social transfers to reduce that gap, averages for 2013-2019 (2012-2018 for Iceland and UK)

	pre social transfers gap between SAL and nonSAL TDHI, 2013-2019 average (%)	social transfers contribution to gap reduction between SAL and nonSAL TDHI, 2013-2019 average (%)	post social transfers gap between SAL and nonSAL TDHI, 2013-2019 average (%)
Luxembourg	9.5	5.7	3.8
Italy	10.1	3.5	6.7
Austria	12.5	7.2	5.2
Slovakia	13.2	5.5	7.7
France	14.5	2.0	12.5
Greece	15.0	4.2	10.8
Portugal	15.2	3.4	11.8
Spain	15.7	7.5	8.2
Romania	16.2	6.0	10.2
Poland	17.6	5.7	12.0
Hungary	18.0	4.4	13.6
Serbia	18.0	9.1	8.9
Bulgaria	20.2	5.6	14.6
Germany	20.2	6.9	13.2
Switzerland	22.8	10.6	12.2
Malta	24.2	8.1	16.0
Iceland	24.5	10.2	14.3
Cyprus	24.8	5.4	19.5
Ireland	25.9	10.6	15.3
Latvia	26.1	2.9	23.3
Estonia	27.2	3.8	23.4
Croatia	27.4	6.1	21.3
Lithuania	28.5	5.0	23.5
Denmark	29.0	11.0	18.0
United Kingdom	29.0	8.4	20.6
Belgium	30.2	11.8	18.4
Slovenia	30.2	6.4	23.8
Finland	30.8	5.2	25.5
Czech Republic	33.0	9.8	23.3
Sweden	34.3	8.8	25.5
Netherlands	44.1	14.6	29.5
Norway	44.3	19.5	24.8

Percentages worked out as follows $[(\text{nonSAL TDHI} - \text{SAL TDHI})/\text{nonSAL TDHI}] \times 100$

I.2 Sample of households with HEDI <= MHEDI

Table I.6: Social transfers (excluding old age and survivor benefits) component of SAL households total disposable income, by country averages

	2013 (%)	2014 (%)	2015 (%)	2016 (%)	2017 (%)	2018 (%)	2019 (%)	averages (%)
Greece	8.4	7.8	7.9	7.6	8.0	7.9	11.7	8.5
Italy	8.4	8.7	8.7	9.2	9.5	10.2	8.8	9.1
Latvia	9.6	8.9	9.5	9.9	9.7	11.0	9.1	9.7
Portugal	11.0	10.7	10.9	11.8	10.7	10.3	9.6	10.7
Romania	12.3	11.5	12.1	10.3	11.3	10.5	9.1	11.0
Lithuania	12.5	15.4	9.1	11.8	10.3	12.2	13.3	12.1
Estonia	14.5	13.3	12.1	10.6	10.1	12.5	13.8	12.4
Slovakia	15.8	12.5	10.1	10.6	11.6	13.2	14.6	12.6
Cyprus	12.5	12.1	12.5	13.7	11.8	15.2	13.4	13.0
Croatia	14.9	15.4	17.1	11.8	10.9	11.3	10.4	13.1
Bulgaria	11.8	16.5	12.1	10.8	14.2	14.3	13.6	13.3
Serbia	14.4	14.5	14.7	12.2	13.0	13.7	17.0	14.2
Poland	16.4	16.8	15.0	15.1	14.7	16.2	14.0	15.4
France	17.2	16.1	16.9	14.9	15.4	16.6	16.2	16.2
Czech Republic	14.3	16.6	17.3	15.8	17.4	16.3	16.7	16.3
Spain	15.9	18.7	16.4	15.5	18.2	16.8	17.3	17.0
Hungary	19.8	19.2	17.6	20.6	17.3	20.6	6.7	17.4
Switzerland	15.0	16.5	18.9	20.0	21.2	18.7	15.5	18.0
Slovenia	19.1	20.3	18.7	19.7	20.6	18.6	20.8	19.7
Finland	19.0	15.8	18.6	22.0	21.2	22.2	23.2	20.3
United Kingdom	21.4	20.8	20.3	21.4	20.7	21.0	-	20.9
Germany	20.2	21.2	21.4	23.3	23.0	21.8	21.3	21.7
Luxembourg	28.3	26.1	24.7	19.5	19.3	17.7	16.8	21.8
Sweden	24.2	20.2	22.5	21.8	23.1	21.3	23.9	22.4
Austria	20.7	24.3	22.7	22.2	22.3	24.2	27.4	23.4
Iceland	31.1	28.8	25.3	22.6	17.6	15.1	-	23.4
Malta	25.3	29.5	28.8	39.8	21.8	24.9	18.6	27.0
Denmark	30.9	27.0	28.1	26.5	28.1	29.4	24.2	27.7
Ireland	26.6	32.3	29.9	31.5	28.9	26.2	25.1	28.7
Belgium	31.7	32.7	29.6	28.7	29.5	26.6	30.1	29.8
Norway	45.2	40.0	50.1	42.3	41.9	28.1	42.2	41.4
Netherlands	42.1	38.2	43.6	40.7	42.5	43.3	40.2	41.5
Averages	19.7	19.6	19.5	19.2	18.6	18.4	17.9	

Table I.7: Social transfers (excluding old age and survivor benefits) component of nonSAL households total disposable income, by country averages

	2013 (%)	2014 (%)	2015 (%)	2016 (%)	2017 (%)	2018 (%)	2019 (%)	averages (%)
Greece	5.7	5.2	5.5	6.3	6.6	7.3	8.7	6.5
Italy	7.5	7.4	7.8	7.6	7.4	7.7	8.5	7.7
Serbia	9.1	8.5	8.2	8.8	7.4	6.3	6.4	7.8
Portugal	8.7	9.1	8.7	7.8	7.7	7.0	6.5	7.9
Romania	8.1	7.6	8.1	8.6	8.8	7.4	7.0	7.9
Czech Republic	8.3	8.6	8.9	9.0	7.4	7.3	7.3	8.1
Slovakia	10.2	9.7	8.1	8.2	6.6	7.5	8.2	8.4
Poland	8.0	8.1	8.2	7.7	10.8	10.9	10.1	9.1
Croatia	11.6	11.6	10.2	9.4	8.1	7.4	6.2	9.2
Bulgaria	8.7	9.6	9.8	8.2	9.7	10.8	9.4	9.4
Switzerland	8.3	10.3	9.5	9.9	10.6	9.9	9.7	9.7
Latvia	11.1	10.7	9.3	9.5	9.3	9.4	9.4	9.8
Estonia	10.4	10.9	9.2	10.2	11.4	10.4	10.8	10.5
Cyprus	10.0	10.9	10.4	11.0	11.0	10.8	10.9	10.7
Lithuania	14.3	11.9	11.8	11.0	10.9	10.8	12.7	11.9
Iceland	15.7	14.0	12.4	12.2	8.5	9.7	-	12.1
Germany	14.1	13.8	14.6	14.0	13.0	12.0	11.4	13.3
Hungary	16.8	15.7	13.8	14.7	13.3	12.7	7.9	13.6
United Kingdom	14.7	14.0	13.3	12.6	14.4	13.1	-	13.7
Spain	16.2	16.7	15.3	13.9	12.4	11.2	11.3	13.9
Luxembourg	17.4	16.2	14.8	13.4	12.2	12.8	12.1	14.1
Slovenia	16.5	15.7	15.2	14.9	14.3	14.6	13.2	14.9
Austria	16.5	16.6	16.3	15.7	15.5	15.7	16.2	16.1
Malta	19.3	19.0	18.2	15.2	15.7	13.9	13.5	16.4
France	17.6	17.5	17.6	17.9	18.1	18.2	17.5	17.8
Belgium	20.0	20.4	21.9	20.8	19.8	17.7	17.8	19.8
Netherlands	21.2	22.3	21.6	20.7	20.2	18.8	18.1	20.4
Norway	22.4	20.1	22.6	22.5	22.5	19.1	21.2	21.5
Sweden	21.7	22.4	22.4	21.9	20.6	21.0	21.0	21.6
Denmark	22.4	24.4	23.1	21.8	22.8	20.7	19.8	22.2
Finland	23.0	21.6	22.8	24.1	24.7	24.0	22.8	23.3
Ireland	31.4	27.6	26.6	23.9	23.4	22.1	22.3	25.3
Averages	14.6	14.3	13.9	13.5	13.3	12.8	12.6	

Table I.8: Difference in social transfers (excluding old age and survivor benefits) component between SAL and nonSAL households total disposable income, by country averages

	2013 (%)	2014 (%)	2015 (%)	2016 (%)	2017 (%)	2018 (%)	2019 (%)	averages (%)
Finland	-4.0	-5.8	-4.2	-2.1	-3.5	-1.8	0.4	-3.0
France	-0.5	-1.5	-0.7	-2.9	-2.7	-1.6	-1.4	-1.6
Latvia	-1.5	-1.8	0.2	0.4	0.4	1.6	-0.3	-0.2
Lithuania	-1.9	3.4	-2.6	0.8	-0.6	1.4	0.6	0.1
Sweden	2.6	-2.2	0.2	-0.1	2.5	0.3	2.9	0.9
Italy	1.0	1.4	0.8	1.7	2.1	2.5	0.3	1.4
Estonia	4.0	2.5	2.8	0.4	-1.2	2.1	2.9	1.9
Greece	2.7	2.7	2.4	1.3	1.4	0.6	3.0	2.0
Cyprus	2.6	1.1	2.2	2.7	0.8	4.4	2.6	2.3
Portugal	2.3	1.6	2.2	4.0	3.0	3.4	3.1	2.8
Romania	4.2	3.8	4.0	1.8	2.6	3.0	2.2	3.1
Spain	-0.3	2.0	1.1	1.6	5.7	5.6	6.1	3.1
Ireland	-4.8	4.8	3.3	7.5	5.5	4.1	2.8	3.3
Hungary	3.0	3.5	3.8	5.9	4.0	7.9	-1.3	3.8
Bulgaria	3.1	7.0	2.4	2.6	4.5	3.5	4.2	3.9
Croatia	3.4	3.7	6.8	2.4	2.8	3.9	4.2	3.9
Slovakia	5.6	2.8	2.0	2.4	4.9	5.7	6.4	4.3
Slovenia	2.6	4.5	3.5	4.8	6.4	4.0	7.6	4.8
Denmark	8.5	2.7	5.0	4.6	5.2	8.7	4.3	5.6
Poland	8.4	8.8	6.8	7.4	3.9	5.3	3.9	6.4
Serbia	5.2	6.0	6.5	3.4	5.6	7.4	10.6	6.4
United Kingdom	6.7	6.8	7.0	8.9	6.3	7.9	-	7.3
Austria	4.1	7.7	6.4	6.5	6.8	8.4	11.3	7.3
Luxembourg	10.9	10.0	9.9	6.2	7.2	5.0	4.7	7.7
Czech Republic	6.0	8.0	8.4	6.8	10.0	9.0	9.3	8.2
Switzerland	6.7	6.2	9.4	10.1	10.6	8.8	5.9	8.2
Germany	6.1	7.4	6.7	9.3	10.0	9.8	9.8	8.5
Belgium	11.7	12.3	7.7	7.9	9.8	8.9	12.3	10.1
Malta	5.9	10.5	10.5	24.6	6.1	11.0	5.1	10.5
Iceland	15.4	14.8	12.9	10.4	9.1	5.5	-	11.3
Norway	22.8	19.9	27.5	19.8	19.4	9.1	20.9	19.9
Netherlands	20.9	15.9	21.9	20.0	22.3	24.4	22.1	21.1
Averages	5.1	5.3	5.5	5.7	5.3	5.6	5.5	

Table I.9: Reduction in difference between nonSAL and SAL households total disposable income as a result of social transfers (excluding old age and survivor benefits), by country averages

	2013 (%)	2014 (%)	2015 (%)	2016 (%)	2017 (%)	2018 (%)	2019 (%)	averages (%)
Finland	-2.4%	-5.4%	-2.6%	-0.6%	-3.5%	1.0%	2.5%	-1.6%
France	0.9%	0.6%	-0.5%	-1.9%	-1.1%	-1.0%	-1.0%	-0.6%
Latvia	0.0%	-1.0%	1.5%	1.6%	-0.1%	3.5%	-1.1%	0.6%
Lithuania	0.5%	4.1%	-1.5%	2.8%	1.6%	3.9%	1.4%	1.8%
Italy	2.5%	2.0%	1.8%	2.3%	3.2%	3.5%	2.0%	2.5%
Estonia	5.8%	3.7%	3.4%	0.4%	0.1%	2.6%	4.4%	2.9%
Greece	3.6%	4.6%	4.0%	3.1%	2.4%	1.5%	3.8%	3.3%
Sweden	4.0%	0.3%	5.7%	1.2%	2.8%	5.8%	4.9%	3.5%
Portugal	3.2%	2.8%	3.3%	5.4%	4.0%	4.8%	4.4%	4.0%
Hungary	4.6%	4.5%	4.0%	5.4%	5.1%	6.6%	-2.0%	4.0%
Cyprus	3.9%	3.4%	3.1%	6.2%	1.8%	7.4%	3.3%	4.1%
Croatia	6.0%	5.9%	10.2%	2.1%	3.9%	4.0%	3.7%	5.1%
Slovakia	7.5%	4.2%	3.2%	3.8%	5.8%	6.3%	6.8%	5.4%
Slovenia	4.0%	4.9%	5.3%	6.1%	7.1%	5.3%	6.8%	5.6%
Spain	3.5%	6.8%	4.6%	4.5%	9.3%	7.6%	7.5%	6.3%
Bulgaria	4.5%	10.0%	4.1%	6.8%	7.5%	5.5%	5.9%	6.3%
Romania	7.9%	7.2%	8.2%	4.8%	6.9%	6.1%	5.7%	6.7%
Poland	10.1%	9.2%	8.1%	8.0%	5.8%	7.1%	4.3%	7.5%
Ireland	-2.1%	7.2%	7.1%	12.6%	11.7%	9.0%	7.5%	7.6%
Serbia	5.0%	7.6%	9.0%	6.1%	7.6%	8.3%	11.0%	7.8%
Austria	6.3%	8.9%	7.6%	7.6%	6.0%	7.0%	13.3%	8.1%
Germany	6.9%	7.5%	7.6%	9.7%	9.2%	9.6%	8.1%	8.4%
Luxembourg	12.1%	10.5%	10.1%	6.5%	7.5%	7.3%	6.0%	8.6%
Czech Republic	7.4%	9.4%	10.1%	6.9%	10.4%	8.9%	8.5%	8.8%
United Kingdom	10.6%	8.7%	8.0%	12.4%	9.0%	9.6%	0.0%	9.7%
Denmark	15.8%	10.2%	9.1%	10.1%	4.1%	11.5%	8.3%	9.9%
Switzerland	9.5%	6.4%	13.2%	14.8%	14.0%	12.2%	9.1%	11.3%
Malta	5.9%	10.7%	10.7%	23.8%	7.2%	12.3%	9.5%	11.4%
Belgium	13.7%	15.1%	11.0%	10.7%	14.3%	13.8%	16.3%	13.5%
Iceland	17.0%	17.5%	16.6%	12.3%	11.1%	7.7%	0.0%	13.7%
Netherlands	19.6%	18.0%	23.9%	21.1%	22.2%	22.6%	20.8%	21.1%
Norway	26.7%	23.8%	32.7%	24.8%	24.6%	14.0%	25.2%	24.6%
Averages	7.0%	7.2%	7.6%	7.5%	6.9%	7.4%	6.9%	

I.3 Correlations - impact of social transfers in reducing the gap between SAL and nonSAL households TDHI (trimmed sample)

I.3.1 SAL and nonSAL TDHI difference prior to and after social transfers

Table I.10: Correlation between the average difference in SAL and nonSAL TDHI prior to and after social transfers, average difference calculated as a percentage of nonSAL households for each country over the 7 year period (6 years for Iceland and UK)

trimmed sample: $-2.0 \leq \text{standardised TDHI} \leq 2.0$				country percentage difference in SAL and nonSAL TDHI prior, to social transfers	country percentage difference in SAL and nonSAL TDHI, after social transfers	
country percentage difference in SAL and nonSAL TDHI prior, to social transfers	Kendall's tau-b			1	0.799**	
	Sig. (2-tailed)				0.000	
	N			32	32	
	Bootstrap*	Bias			0	0.000
		Std. Error			0	0.048
		BCa 99% Confidence Interval	Lower		.	0.641
			Upper		.	0.909
** Correlation is significant at the 0.01 level (2-tailed).						
* Bootstrap results are based on 10,000 bootstrap samples.						

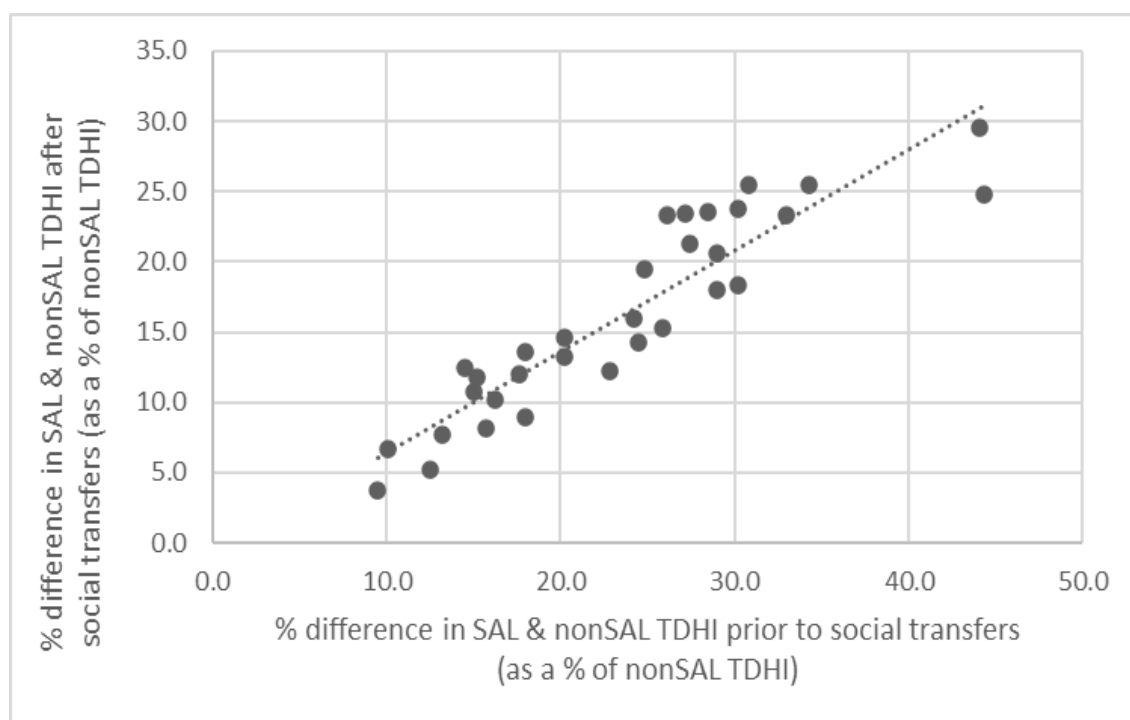


Figure I.1: Scatter plot displaying correlation in Table I.10 above, R^2 linear = 0.845

I.3.2 The difference in SAL and nonSAL TDHI prior to social transfers and the impact of social transfers

Table I.11: Correlation between the difference in SAL and nonSAL TDHI prior to social transfers and the average reduction in that difference following social transfers, average differences calculated as a percentage of nonSAL households for each country over the 7 year period (6 years for Iceland and UK)

trimmed sample: $-2.0 \leq \text{standardised TDHI} \leq 2.0$				country percentage difference in SAL and nonSAL TDHI prior, to social transfers	average reduction in SAL and nonSAL TDHI difference as a result of social transfers	
country percentage difference in SAL and nonSAL TDHI prior, to social transfers	Kendall's tau-b			1	0.372**	
	Sig. (2-tailed)				0.003	
	N			32	32	
	Bootstrap*	Bias			0	0.000
		Std. Error			0	0.115
		BCa 99% Confidence Interval	Lower		.	0.034
			Upper		.	0.662
** Correlation is significant at the 0.01 level (2-tailed).						
* Bootstrap results are based on 10,000 bootstrap samples.						

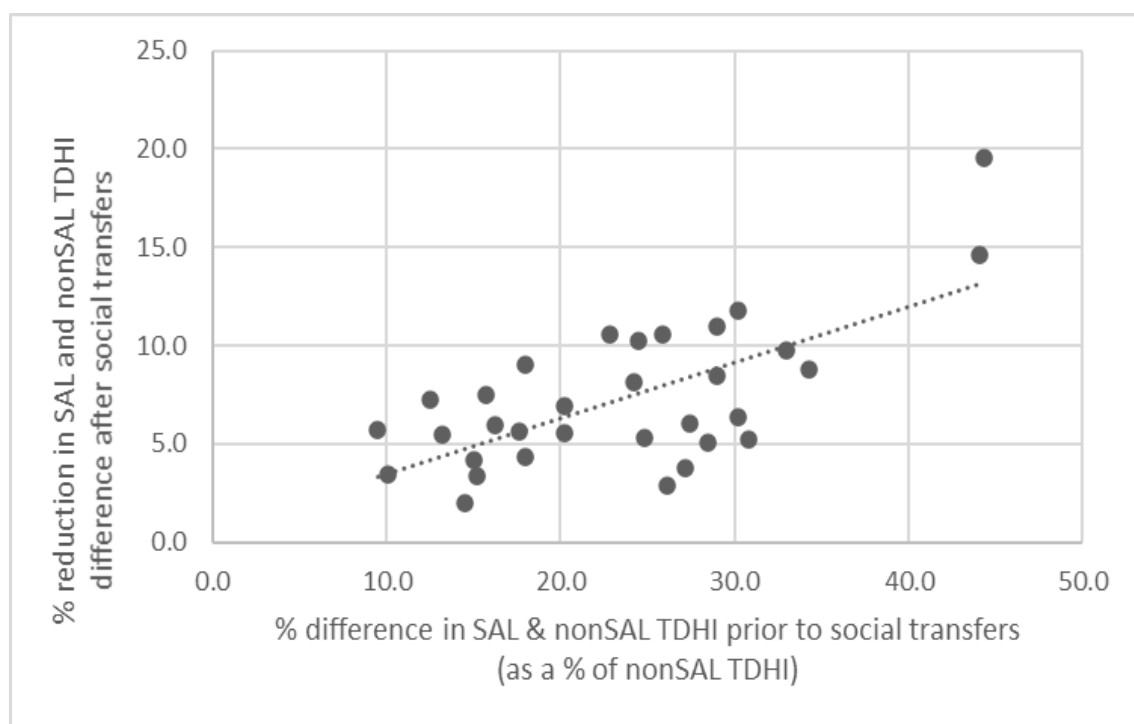


Figure I.2: Scatter plot displaying correlation in Table I.11 above, R^2 linear = 0.457

I.3.3 Social transfers and the changes in MDI scores for SAL households

Table I.12: Correlation between the average reduction in SAL and nonSAL TDHI difference following social transfers in relation to changes in the MDI score of SAL households over the 2013-2019 period (2013-2018 for Iceland and UK), average differences in TDHI calculated as a percentage of nonSAL households TDHI

trimmed sample: $-2.0 \leq \text{standardised TDHI} \leq 2.0$				average reduction in SAL and nonSAL TDHI difference as a result of social transfers	average changes in MDI scores for SAL households 2013-2019 (Iceland & UK till 2018)	
average reduction in SAL and nonSAL TDHI difference as a result of social transfers	Kendall's tau-b			1	-0.381**	
	Sig. (2-tailed)				0.002	
	N			32	32	
	Bootstrap*	Bias			0	0.000
		Std. Error			0	0.113
		BCa 99% Confidence Interval	Lower		.	-0.610
			Upper		.	-0.112

** Correlation is significant at the 0.01 level (2-tailed).

* Bootstrap results are based on 10,000 bootstrap samples.

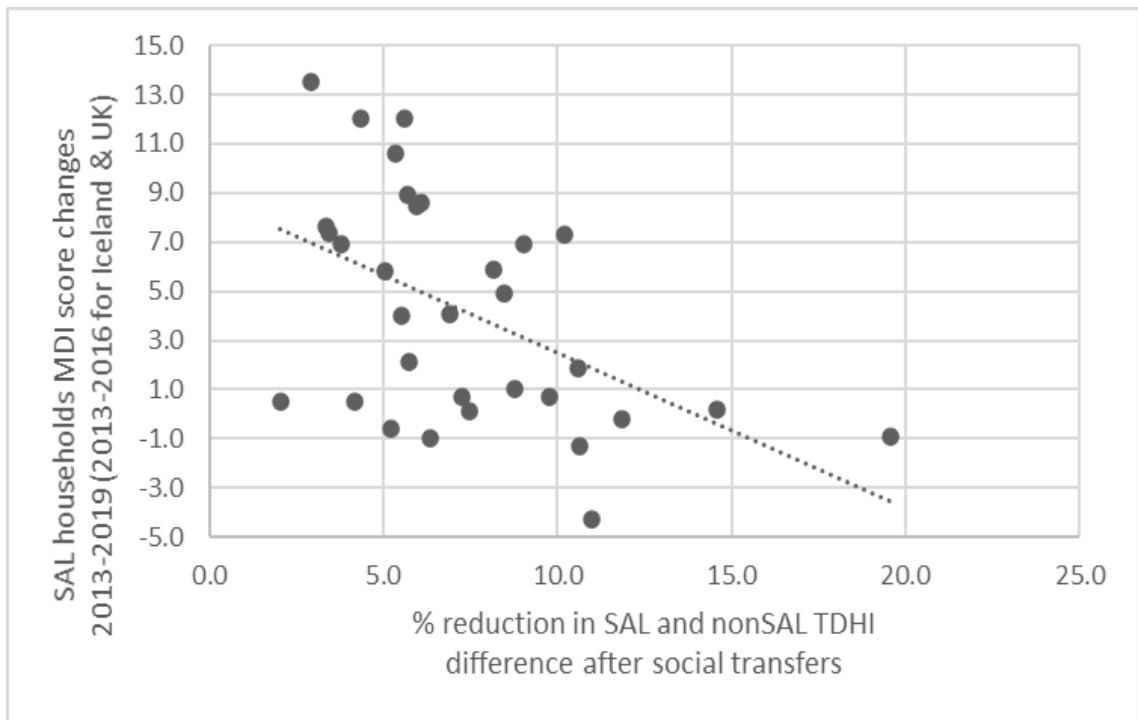


Figure I.3: Scatter plot displaying correlation in Table I.12 above, R^2 linear = 0.252

I.3.4 Social transfers and the changes in MDI scores for nonSAL households

Table I.13: Correlation between the average reduction in SAL and nonSAL TDHI difference following social transfers in relation to changes in the MDI score of nonSAL households over the 2013-2019 period (2013-2018 for Iceland and UK), average differences in TDHI calculated as a percentage of nonSAL households TDHI

trimmed sample: $-2.0 \leq \text{standardised TDHI} \leq 2.0$				average reduction in SAL and nonSAL TDHI difference as a result of social transfers	average changes in MDI scores for nonSAL households 2013-2019 (Iceland & UK till 2018)	
average reduction in SAL and nonSAL TDHI difference as a result of social transfers	Kendall's tau-b			1	-0.372**	
	Sig. (2-tailed)				0.009	
	N			32	32	
	Bootstrap*	Bias			0	-0.001
		Std. Error			0	0.128
		BCa 99% Confidence Interval	Lower		.	-0.591
			Upper		.	-0.002

** Correlation is significant at the 0.01 level (2-tailed).
 * Bootstrap results are based on 10,000 bootstrap samples.

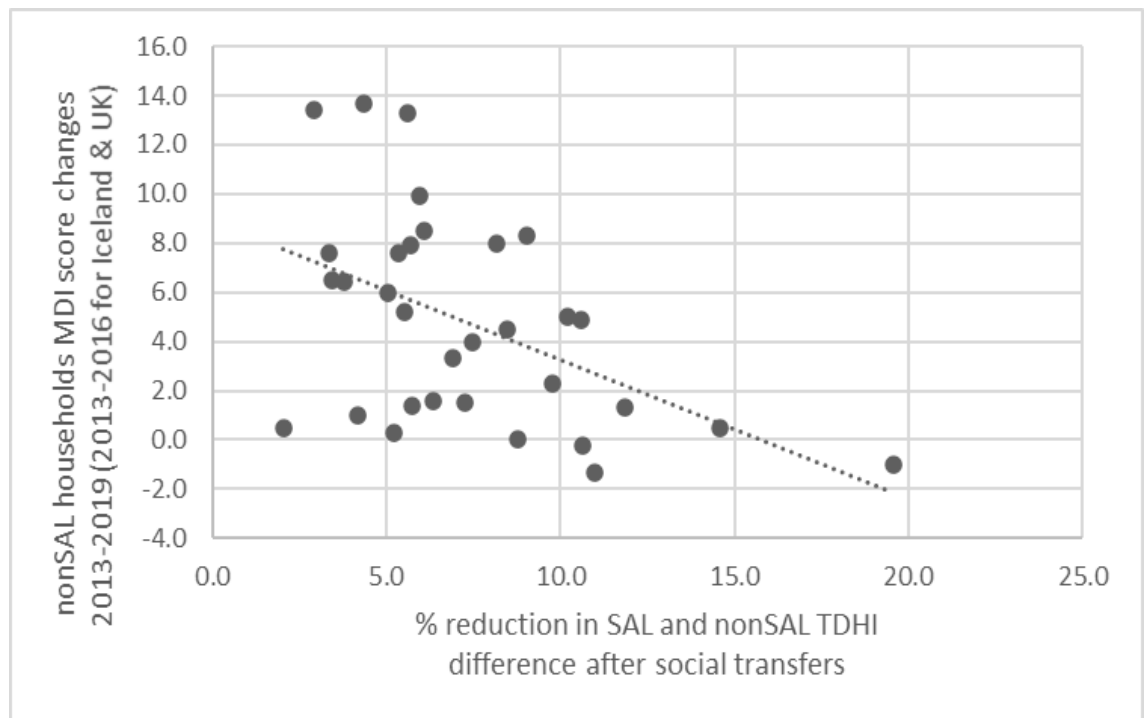


Figure I.4: Scatter plot displaying correlation in Table I.13 above, R^2 linear = 0.234

I.3.5 Social transfers and the difference in SAL and nonSAL deprivation

Table I.14: Correlation between the change in SAL and nonSAL TDHI after social transfers with the change in the MDI difference between SAL and nonSAL households over 2013-2019 (2013-2018 Iceland and UK)

trimmed sample: $-2.0 \leq \text{standardised TDHI} \leq 2.0$				average reduction in SAL and nonSAL TDHI difference as a result of social transfers	country changes in the difference between SAL and nonSAL MDI scores between 2013-2019 (Iceland & UK till 2018)	
average reduction in SAL and nonSAL TDHI difference as a result of social transfers	Kendall's tau-b			1	-0.206**	
	Sig. (2-tailed)				0.101	
	N			32	32	
	Bootstrap*	Bias			0	0.001
		Std. Error			0	0.113
		BCa 99% Confidence Interval	Lower		.	-0.486***
			Upper		.	0.089***
*** Confidence interval crosses zero.						
** Correlation not significant at the 0.01 level (2-tailed).						
* Bootstrap results are based on 10,000 bootstrap samples.						

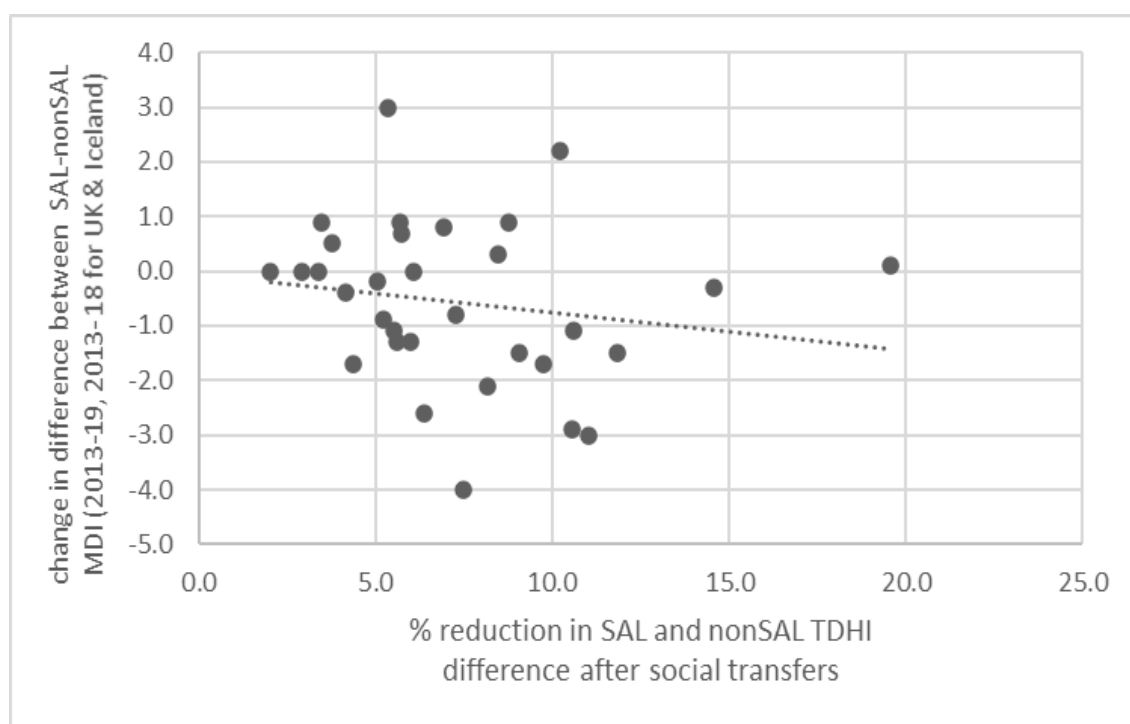


Figure I.5: Scatter plot displaying non-correlation in Table I.14 above, R^2 linear = 0.030

Table I.15: Correlation between the change in SAL and nonSAL TDHI after social transfers in proportion to the pre social transfers gap with the change in the MDI difference between SAL and nonSAL households over 2013-2019 (2013-2018 Iceland and UK)

trimmed sample: $-2.0 \leq \text{standardised TDHI} \leq 2.0$		change in SAL and nonSAL TDHI gap after social transfers in proportion to the pre social transfers gap	country changes in the difference between SAL and nonSAL MDI scores between 2013-2019 (Iceland & UK till 2018)		
change in SAL and nonSAL TDHI gap after social transfers in proportion to the pre social transfers gap	Kendall's tau-b		1	-0.145**	
	Sig. (2-tailed)			0.249	
	N		32	32	
	Bootstrap*	Bias		0	0.002
		Std. Error		0	0.119
		BCa 99% Confidence Interval	Lower	.	-0.446***
			Upper	.	0.161***
*** Confidence interval crosses zero.					
** Correlation not significant at the 0.01 level (2-tailed).					
* Bootstrap results are based on 10,000 bootstrap samples.					

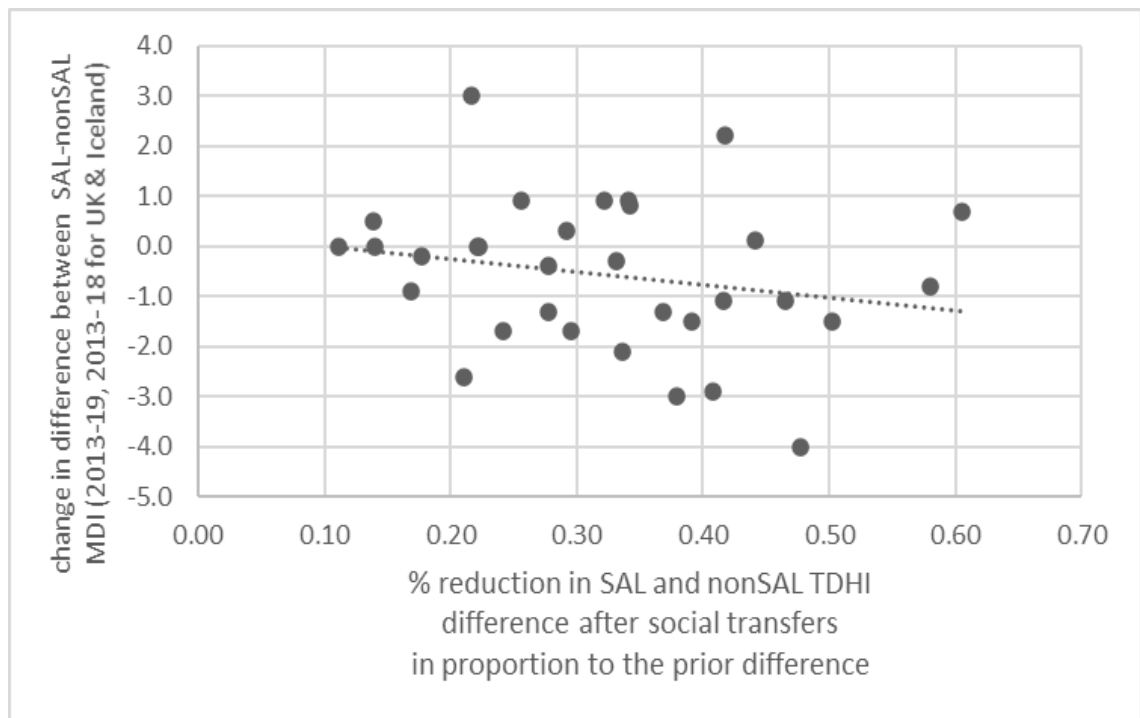


Figure I.6: Scatter plot displaying non-correlation in Table I.15 above

I.4 Correlations - impact of social transfers in reducing the gap between SAL and nonSAL households TDHI (HEDI <= MHEDI sample)

I.4.1 SAL and nonSAL TDHI difference prior to and after social transfers

Table I.16: Correlation between the average difference in SAL and nonSAL TDHI prior to and after social transfers, average difference calculated as a percentage of nonSAL households for each country over the 7 year period (six years for Iceland and UK)

sub-sample: HEDI <= MHEDI				country percentage difference in SAL and nonSAL TDHI prior, to social transfers	country percentage difference in SAL and nonSAL TDHI, after social transfers	
country percentage difference in SAL and nonSAL TDHI prior, to social transfers	Kendall's tau-b			1	0.516**	
	Sig. (2-tailed)				0.000	
	N			32	32	
	Bootstrap*	Bias			0	0.000
		Std. Error			0	0.097
		BCa 99% Confidence Interval	Lower		.	0.141
			Upper		.	0.755

** Correlation is significant at the 0.01 level (2-tailed).

* Bootstrap results are based on 10,000 bootstrap samples.

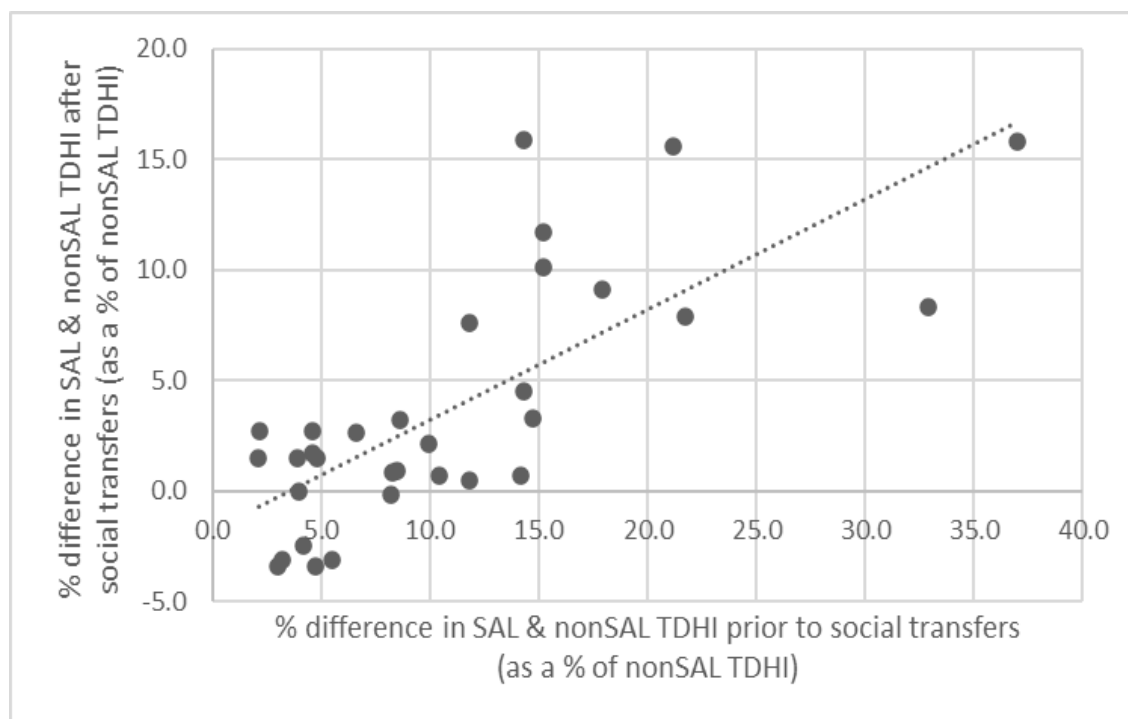


Figure I.7: Scatter plot displaying correlation in Table I.16 above, R^2 linear = 0.567

I.4.2 The difference in SAL and nonSAL TDHI prior to social transfers and the impact of social transfers

Table I.17: Correlation between the difference in SAL and nonSAL TDHI prior to social transfers and the average reduction in that difference following social transfers, average differences calculated as a percentage of nonSAL households for each country over the 7 year period (6 years for Iceland and UK)

sub-sample: HEDI <= MHEDI			country percentage difference in SAL and nonSAL TDHI prior, to social transfers	average reduction in SAL and nonSAL TDHI difference as a result of social transfers	
country percentage difference in SAL and nonSAL TDHI prior, to social transfers	Kendall's tau-b		1	0.457**	
	Sig. (2-tailed)			0.000	
	N		32	32	
	Bootstrap*	Bias		0	-0.001
		Std. Error		0	0.121
		BCa 99% Confidence Interval	Lower	.	0.076
			Upper	.	0.759

** Correlation is significant at the 0.01 level (2-tailed).

* Bootstrap results are based on 10,000 bootstrap samples.

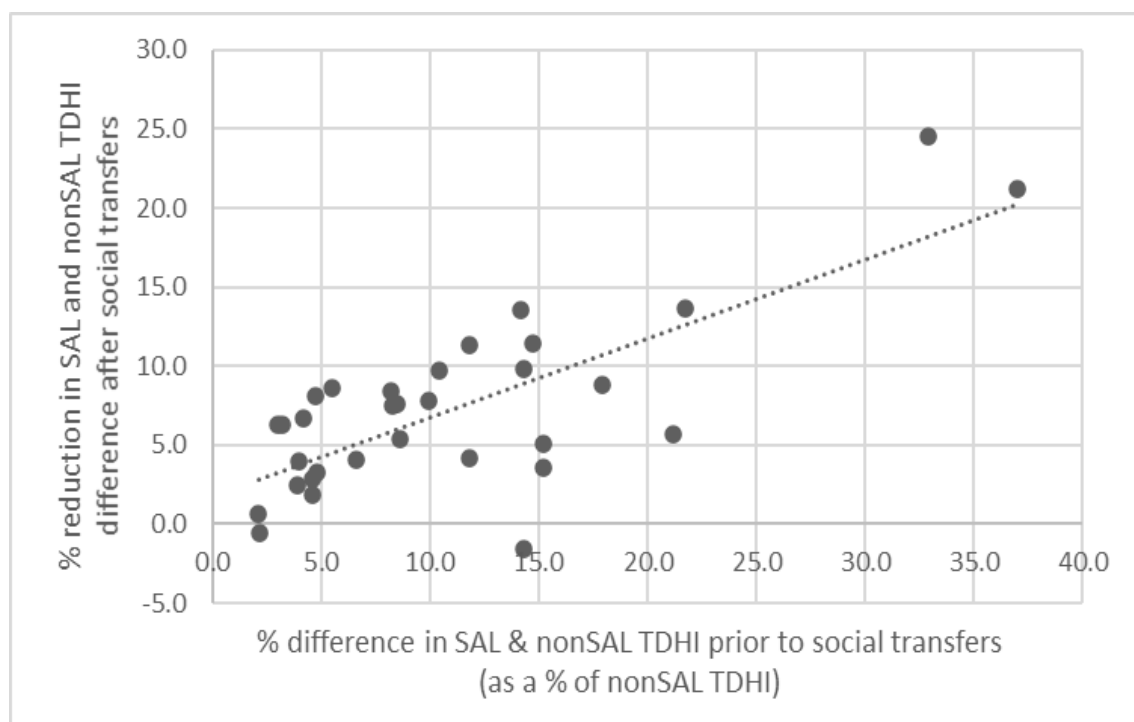


Figure I.8: Scatter plot displaying correlation in Table I.17 above, R^2 linear = 0.569

I.4.3 Social transfers and the changes in MDI scores for SAL households

Table I.18: Correlation between the average reduction in SAL and nonSAL TDHI difference following social transfers in relation to changes in the MDI score of SAL households over the 2013-2019 period (2013-2018 for Iceland and UK), average differences in TDHI calculated as a percentage of nonSAL households TDHI

sub-sample: HEDI <= MHEDI				country percentage difference in SAL and nonSAL TDHI prior, to social transfers	country percentage difference in SAL and nonSAL TDHI, after social transfers	
country percentage difference in SAL and nonSAL TDHI prior, to social transfers	Kendall's tau-b			1	0.516**	
	Sig. (2-tailed)				0.000	
	N			32	32	
	Bootstrap*	Bias			0	0.000
		Std. Error			0	0.097
		BCa 99% Confidence Interval	Lower		.	0.141
			Upper		.	0.755
** Correlation is significant at the 0.01 level (2-tailed).						
* Bootstrap results are based on 10,000 bootstrap samples.						

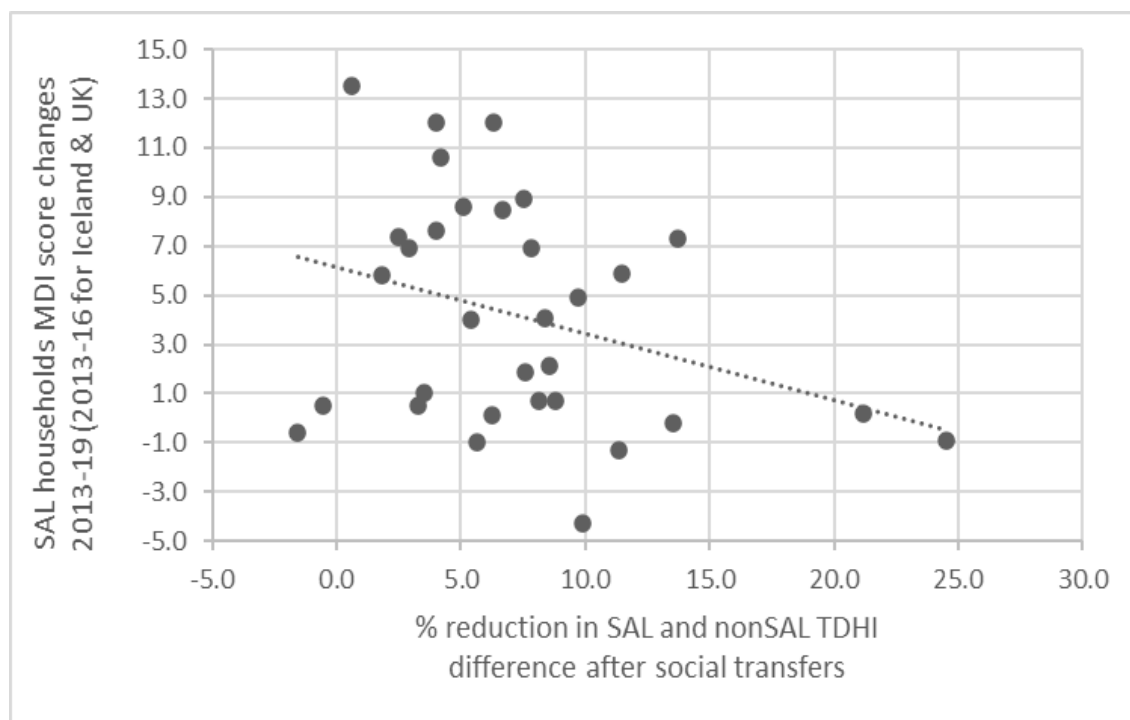


Figure I.9: Scatter plot displaying non-correlation in Table I.18 above, R^2 linear = 0.105

I.4.4 Social transfers and the changes in MDI scores for nonSAL households

Table I.19: Correlation between average reduction in SAL and nonSAL TDHI difference following social transfers with changes in MDI score of nonSAL households over 2013-2019 (2013-2018 for Iceland and UK), average differences in TDHI calculated as a percentage of nonSAL households TDHI

sub-sample: HEDI <= MHEDI				average reduction in SAL and nonSAL TDHI difference as a result of social transfers	average changes in MDI scores for nonSAL households 2013-2019 (Iceland & UK till 2018)	
average reduction in SAL and nonSAL TDHI difference as a result of social transfers	Kendall's tau-b			1	-0.210**	
	Sig. (2-tailed)				0.092	
	N			32	32	
	Bootstrap*	Bias			0	-0.001
		Std. Error			0	0.143
		BCa 99% Confidence Interval	Lower		.	-0.527***
			Upper		.	0.126***
*** Confidence interval crosses zero.						
** Correlation not significant at the 0.01 level (2-tailed).						
* Bootstrap results are based on 10,000 bootstrap samples.						

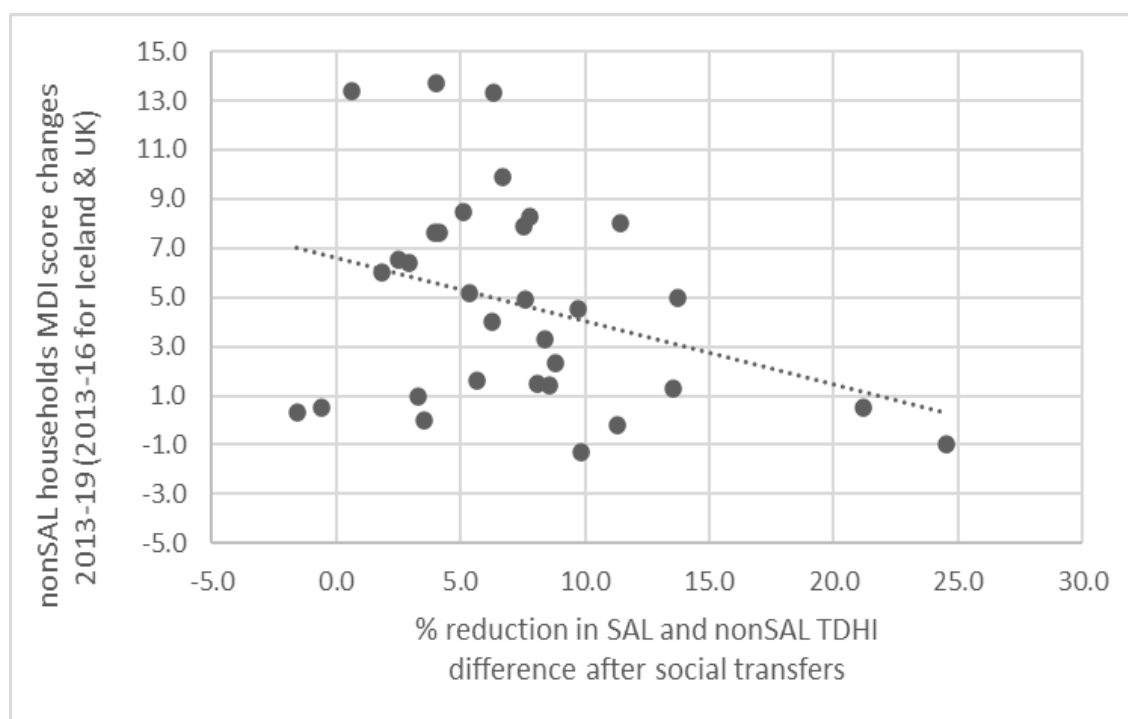


Figure I.10: Scatter plot displaying non-correlation in Table I.19 above, R^2 linear = 0.113

I.4.5 Social transfers and the difference in SAL and nonSAL deprivation

Table I.20: Correlation between the change in SAL and nonSAL TDHI after social transfers with the change in the MDI difference between SAL and nonSAL households over 2013-2019 (2013-2018 Iceland and UK)

sub-sample: HEDI <= MHEDI		average reduction in SAL and nonSAL TDHI difference as a result of social transfers	country changes in the difference between SAL and nonSAL MDI scores between 2013-2019 (Iceland & UK till 2018)		
average reduction in SAL and nonSAL TDHI difference as a result of social transfers	Kendall's tau-b	1	-0.125**		
	Sig. (2-tailed)		0.322		
	N	32	32		
	Bootstrap*	Bias	0	0.001	
		Std. Error	0	0.112	
		BCa 99% Confidence Interval	Lower	.	-0.440***
			Upper	.	0.186***
*** Confidence interval crosses zero.					
** Correlation not significant at the 0.01 level (2-tailed).					
* Bootstrap results are based on 10,000 bootstrap samples.					

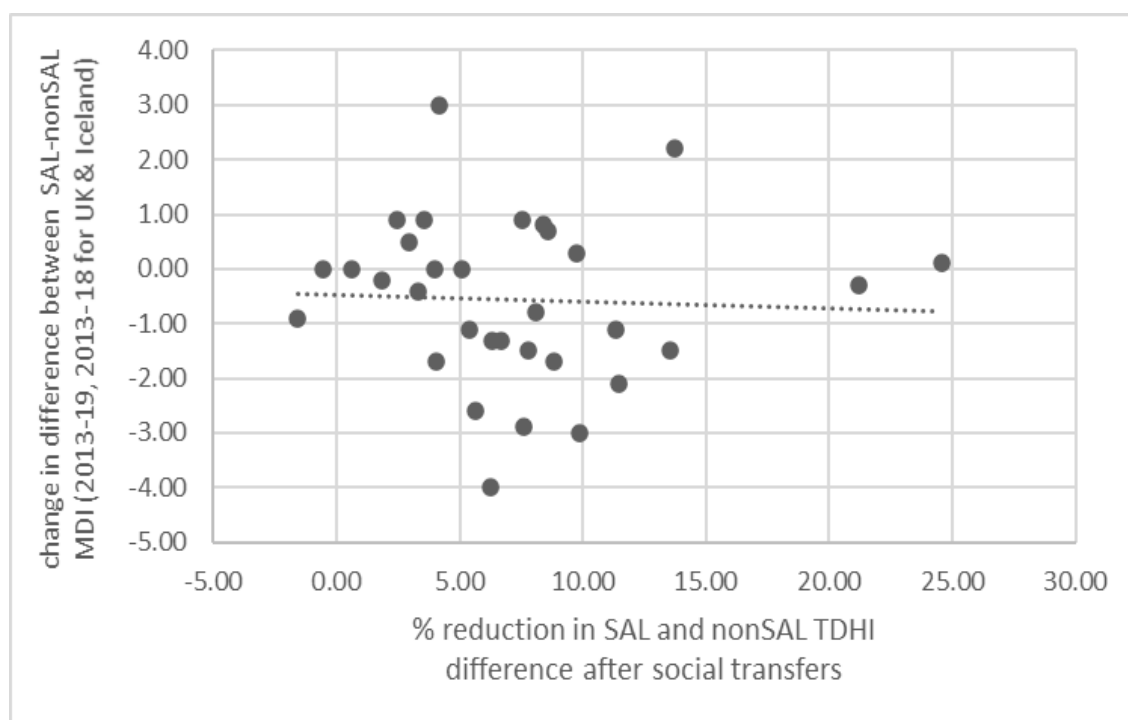


Figure I.11: Scatter plot displaying non-correlation in Table I.20 above, R2 linear = 0.002

Table I.21: Correlation between the change in SAL and nonSAL TDHI after social transfers in proportion to the pre social transfers gap with the change in the MDI difference between SAL and nonSAL households over 2013-2019 (2013-2018 Iceland and UK)

sub-sample: HEDI <= MHEDI			change in SAL and nonSAL TDHI gap after social transfers in proportion to the pre social transfers gap	country changes in the difference between SAL and nonSAL MDI scores between 2013-2019 (Iceland & UK till 2018)	
change in SAL and nonSAL TDHI gap after social transfers in proportion to the pre social transfers gap	Kendall's tau-b		1	-0.121**	
	Sig. (2-tailed)			0.338	
	N		32	32	
	Bootstrap*	Bias		0	0.001
		Std. Error		0	0.118
		BCa 99% Confidence Interval	Lower	.	-0.420***
Upper			.	0.202***	
*** Confidence interval crosses zero.					
** Correlation not significant at the 0.01 level (2-tailed).					
* Bootstrap results are based on 10,000 bootstrap samples.					

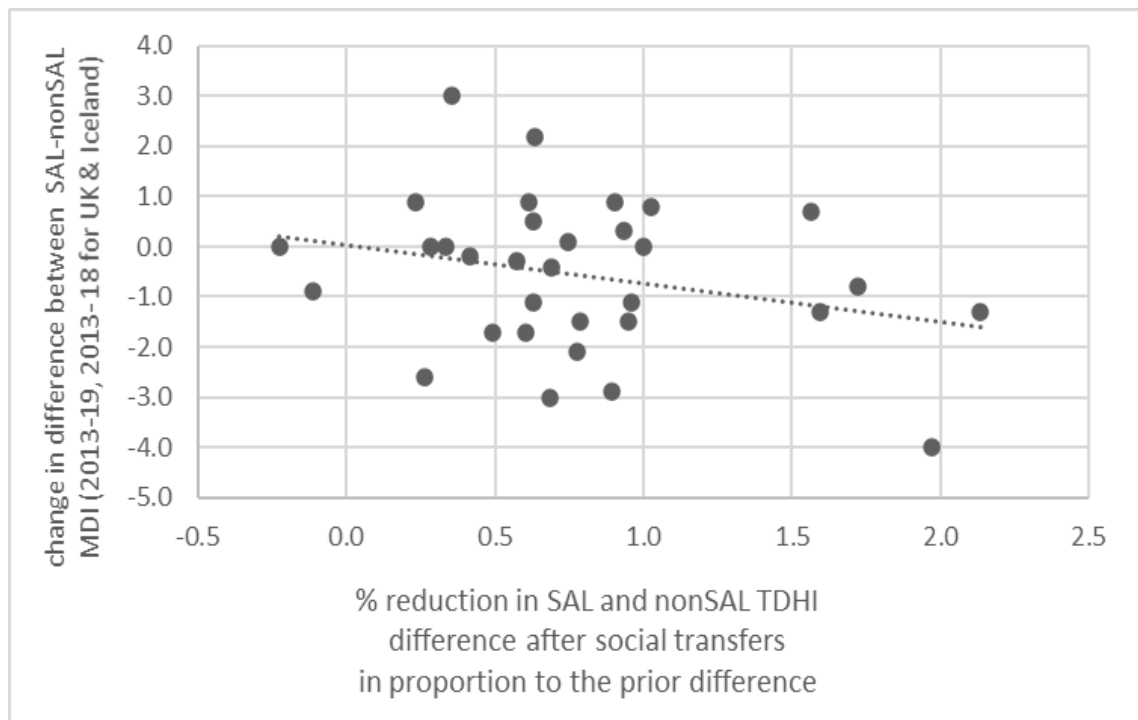


Figure I.12: Scatter plot displaying non-correlation in Table I.21 above, R^2 linear = 0.076

I.5 Total disposable household income after social transfers and the difference in MDI scores for SAL and nonSAL households

Table I.22: SAL and nonSAL households compared on average proportionate difference in TDHI after social transfers and average MDI scores differences, listed by TDHI difference (smallest to largest) and MDI difference (smallest to largest)

	SAL vs nonSAL households			SAL vs nonSAL households	
	TDHI diff AST (%)	MDI diff		MDI diff	TDHI diff AST (%)
Austria	-3.40	6.6	Luxembourg	5.5	-3.08
Bulgaria	-3.37	10.4	Finland	5.9	15.88
Spain	-3.10	7.2	France	6.3	2.71
Luxembourg	-3.08	5.5	Austria	6.6	-3.40
Romania	-2.49	13.3	Greece	6.6	1.50
Germany	-0.20	9.2	Sweden	7.0	11.71
Portugal	0.05	9.4	Cyprus	7.2	7.62
Switzerland	0.51	7.6	Spain	7.2	-3.10
United Kingdom	0.67	8.2	Norway	7.3	8.34
Belgium	0.71	8.7	Italy	7.5	1.45
Poland	0.81	8.1	Switzerland	7.6	0.51
Ireland	0.94	9.0	Czech Republic	7.7	9.06
Italy	1.45	7.5	Slovakia	7.8	3.25
Greece	1.50	6.6	Poland	8.1	0.81
Latvia	1.50	11.6	United Kingdom	8.2	0.67
Estonia	1.65	9.2	Malta	8.2	3.28
Serbia	2.11	10.5	Belgium	8.7	0.71
Hungary	2.62	9.7	Ireland	9.0	0.94
France	2.71	6.3	Croatia	9.1	10.07
Lithuania	2.74	10.1	Iceland	9.1	7.94
Slovakia	3.25	7.8	Germany	9.2	-0.20
Malta	3.28	8.2	Estonia	9.2	1.65
Denmark	4.45	9.6	Portugal	9.4	0.05
Cyprus	7.62	7.2	Denmark	9.6	4.45
Iceland	7.94	9.1	Hungary	9.7	2.62
Norway	8.34	7.3	Lithuania	10.1	2.74
Czech Republic	9.06	7.7	Netherlands	10.4	15.85
Croatia	10.07	9.1	Bulgaria	10.4	-3.37
Sweden	11.71	7.0	Slovenia	10.4	15.57
Slovenia	15.57	10.4	Serbia	10.5	2.11
Netherlands	15.85	10.4	Latvia	11.6	1.50
Finland	15.88	5.9	Romania	13.3	-2.49

1. TDHI difference is calculated as follows: $(\text{nonSAL TDHI} - \text{SAL TDHI}) / \text{nonSAL TDHI}$, as a percentage. A negative % difference indicates that the average SAL TDHI after social transfers is more than the average nonSAL TDHI.

2. MDI difference is calculated as follows: $(\text{SAL MDI} - \text{nonSAL MDI})$.

Appendix J. Detailed analyses for 2018

J.1 Households with or without severe activity limitation x main deprivation measures crosstabulations

J.1.1 Capacity to face an unexpected required expense

Household with one or more adults with severe activity limitation x Capacity to face unexpected expense Crosstabulation								
	Capacity to face unexpected required expense						Total	
	yes			no				
Household with one or more SAL adult	N	%	Standardised Residual	N	%	Standardised Residual	N	%
nonSAL	138,602,614	69.2	379.1	61,717,777	30.8	-540.2	200,320,391	100.0
SAL ₁	13,012,025	51.6	-947.7	12,225,780	48.8	1350.2	25,237,805	100.0
SAL ₊	1,254,250	48.0	-374.4	1,357,041	52.0	533.5	2,611,291	100.0
Total	152,868,889	67.0		75,300,598	33.0		228,169,487	100.0

Household with one or more adults with severe activity limitation x Capacity to face unexpected expense Chi-Square Tests						
	Value	df	Asymptotic Significance (2-sided)	Monte Carlo Sig. (2-sided)		
				Significance	99% Confidence Interval	
					Lower Bound	Upper Bound
Pearson Chi-Square	3581539.860	2	.000	.000 ^b	.000	.000
Likelihood Ratio	3405527.662	2	.000	.000 ^b	.000	.000
Fisher-Freeman-Halton Exact Test	3405527.869			.000 ^b	.000	.000
Linear-by-Linear Association	3416829.074 ^a	1	.000	.000 ^b	.000	.000
N of Valid Cases: 228,169,487						
a. The standardized statistic is 1848.467.						
b. Based on 10,000 sampled tables with starting seed 2000000.						

J.1.2 Afford a week-long holiday away from home

Household with one or more adults with severe activity limitation x Afford a week-long holiday away from home Crosstabulation								
	Afford a week-long holiday away from home							
	yes			no			Total	
Household with one or more SAL adult	N	%	Standardised Residual	N	%	Standardised Residual	N	%
nonSAL	149,367,397	74.6	465.4	50,952,995	25.4	-742.3	200,320,392	100.0
SAL ₁	13,175,745	52.2	-1160.5	12,062,059	47.8	1850.8	25,237,804	100.0
SAL ₊	1,232,785	47.2	-468.6	1,378,506	52.8	747.3	2,611,291	100.0
Total	163,775,927	71.8		64,393,560	28.2		228,169,487	100.0

Household with one or more adults with severe activity limitation x Afford a week-long holiday away from home Chi-Square Tests						
	Value	df	Asymptotic Significance (2-sided)	Monte Carlo Sig. (2-sided)		
				Significance	99% Confidence Interval	
					Lower Bound	Upper Bound
Pearson Chi-Square	6318072.49	2	.000	.000 ^b	.000	.000
Likelihood Ratio	5796257.438	2	.000	.000 ^b	.000	.000
Fisher-Freeman-Halton Exact Test	5796257.788			.000 ^b	.000	.000
Linear-by-Linear Association	6045773.648 ^a	1	.000	.000 ^b	.000	.000
N of Valid Cases: 228,169,487						
a. The standardized statistic is 2458.815.						
b. Based on 10,000 sampled tables with starting seed 957002199.						

J.2 Most frequent deprivation experiences of SAL and nonSAL households in the 32 countries

Table J.1: Frequencies of top ten deprivation items in 32 countries (calculated by working the top ten items for each country and then calculating the frequencies of these items for SAL and nonSAL households (32 x 10))

SAL	MDI deprivation item	nonSAL
32	Does not afford a week-long annual holiday away from home	32
32	Does not have the capacity to face unexpected required expenses	32
32	Does not afford to replace worn-out furniture	31
31	Not able to make both ends meet	30
26	*Does not afford to spend a small amount of money each week on oneself	24
25	*Does not afford to regularly participate in a leisure activity	24
25	*Does not afford to replace worn out clothes with new ones	10
21	Household dwelling too much noise from neighbours or outside	25
19	Household dwelling has leaking roof, damp walls or similar problems	24
14	*Does not afford to get together with friends/family once a month	7
13	Household dwelling has problems related to pollution	21
9	Does not afford meal with meat, chicken, fish or vegetarian meal every 2nd day	5
9	Does not afford a car for household use	11
7	Household dwelling has problems related to crime	19
7	Does not afford to keep household dwelling warm	6
6	Had arrears on rent, mortgage, utility bills or other repayments	6
5	Had unmet health or dental needs as unaffordable	4
3	*Does not afford two pairs of properly fitting shoes	3
2	Household dwelling too dark	4
1	*Does not afford internet connection for personal use at home	0
1	Does not have a shower/bathtub and toilet for sole household use	2
0	Does not afford a computer	0
0	Does not afford a washing machine	0
0	Does not afford a mobile or fixed phone line	0
0	Does not afford a colour TV	0
*At least one adult in household.		

J.3 SAL and nonSAL households deprivation experiences compared

Table J.2: MDI deprivation 25 items, numbered as reference for Table J.3(p. 520)

	MDI deprivation item
1.	Does not afford a week-long annual holiday away from home
2.	Does not have the capacity to face unexpected required expenses
3.	Does not afford to replace worn-out furniture
4.	Not able to make both ends meet
5.	*Does not afford to spend a small amount of money each week on oneself
6.	*Does not afford to regularly participate in a leisure activity
7.	*Does not afford to replace worn out clothes with new ones
8.	Household dwelling too much noise from neighbours or outside
9.	Household dwelling has leaking roof, damp walls or similar problems
10.	*Does not afford to get together with friends/family once a month
11.	Household dwelling has problems related to pollution
12.	Household dwelling has problems related to crime
13.	Does not afford to keep household dwelling warm
14.	Does not afford meal with meat, chicken, fish or vegetarian meal every 2nd day
15.	*Does not afford two pairs of properly fitting shoes
16.	Had unmet health or dental needs as unaffordable
17.	*Does not afford internet connection for personal use at home
18.	Had arrears on rent, mortgage, utility bills or other repayments
19.	Does not afford a car for household use
20.	Household dwelling too dark
21.	Does not afford a computer
22.	Does not have a shower/bathtub and toilet for sole household use
23.	Does not afford a washing machine
24.	Does not afford a mobile or fixed phone line
25.	Does not afford a colour TV
*At least one adult in household.	

Table J.3: SAL and nonSAL households' ten most frequent deprivation items compared for the countries with the highest and the lowest MDI score differences in 2018 (item numbers refer to Table 103 above)

	2018 MDI scores		household	Ten most frequent deprivation items									
	highest SAL-nonSAL difference	country average		1st	2nd	3rd	4th	5th	6th	7th	8th	9th	10th
Romania	13.9	27.5	SAL	1	3	5	6	2	7	4	15	10	<u>17</u>
			nonSAL	1	3	6	5	2	7	4	15	10	22
Latvia	13.3	19.7	SAL	2	1	4	3	6	7	16	9	<u>5</u>	14
			nonSAL	2	3	4	1	6	7	9	19	11	16
Slovenia	12.5	10.9	SAL	2	1	4	3	6	9	8	<u>5</u>	11	14
			nonSAL	2	1	9	4	3	6	11	8	18	12
Lithuania	12.4	19	SAL	2	1	6	4	3	13	5	7	10	14
			nonSAL	2	1	6	13	3	4	5	7	10	14
Serbia	11.7	25.1	SAL	1	4	3	2	7	6	10	15	5	19
			nonSAL	4	3	1	2	6	7	5	19	10	15
Denmark	11.7	7.8	SAL	2	1	4	3	8	5	9	<u>7</u>	<u>6</u>	19
			nonSAL	2	8	9	1	5	3	19	4	11	12
Netherlands	11.0	8.3	SAL	3	2	1	8	4	12	11	<u>7</u>	9	19
			nonSAL	8	2	3	12	11	9	1	5	4	19
Hungary	10.2	15.8	SAL	1	4	2	3	10	9	7	6	5	19
			nonSAL	1	4	3	2	10	9	6	19	7	5
	2018 MDI scores		household	Ten most frequent deprivation items									
	lowest SAL-nonSAL difference	country average		1st	2nd	3rd	4th	5th	6th	7th	8th	9th	10th
Finland	7.1	6.5	SAL	2	19	1	3	4	8	<u>7</u>	5	18	11
			nonSAL	2	8	1	19	3	11	12	18	4	5
Austria	7.0	7.2	SAL	2	5	1	6	4	8	9	3	<u>7</u>	11
			nonSAL	2	8	5	6	1	4	11	12	9	3
France	6.9	10.9	SAL	1	2	3	4	5	6	8	<u>7</u>	11	12
			nonSAL	2	1	3	8	5	4	6	12	11	9
Malta	6.8	9.3	SAL	1	11	8	2	3	4	6	5	<u>10</u>	20
			nonSAL	11	1	8	6	3	2	5	4	12	20
Greece	6.5	24.7	SAL	4	1	2	3	5	6	10	<u>16</u>	13	18
			nonSAL	4	5	3	2	1	6	18	7	13	11
Sweden	6.5	5.1	SAL	2	1	4	12	8	5	<u>3</u>	6	9	20
			nonSAL	2	8	12	1	4	9	20	11	6	5
Italy	6.1	12.3	SAL	1	2	4	3	9	13	6	11	<u>7</u>	14
			nonSAL	1	2	4	3	13	6	9	11	12	8
Luxembourg	5.8	6.5	SAL	2	3	4	8	9	1	11	12	<u>7</u>	5
			nonSAL	8	2	9	11	3	12	4	1	20	5
<u>Underlined</u> items are deprivation items in the top 10 most frequent items for SAL households but not for nonSAL households.													
<i>Italicised</i> items are deprivation items in the top 10 most frequent items for nonSAL households but not for SAL households.													

J.4 Correlations – SAL households and country deprivation

J.4.1 SAL households MDI and country MDI

Table J.4: Correlation between SAL households MDI country average with the country MDI average for all households (2018)

		SAL households MDI country average (2018)	country MDI average (2018)		
SAL households MDI country average (2018)	Kendall's tau-b	1	0.810**		
	Sig. (2-tailed)		0.000		
	N	32	32		
	Bootstrap*	Bias	0	0.062	
		Std. Error	0	0.012	
		BCa 99% Confidence Interval	Lower	.	0.598
			Upper	.	0.933

** Correlation is significant at the 0.01 level (2-tailed).

* Bootstrap results are based on 10,000 bootstrap samples.

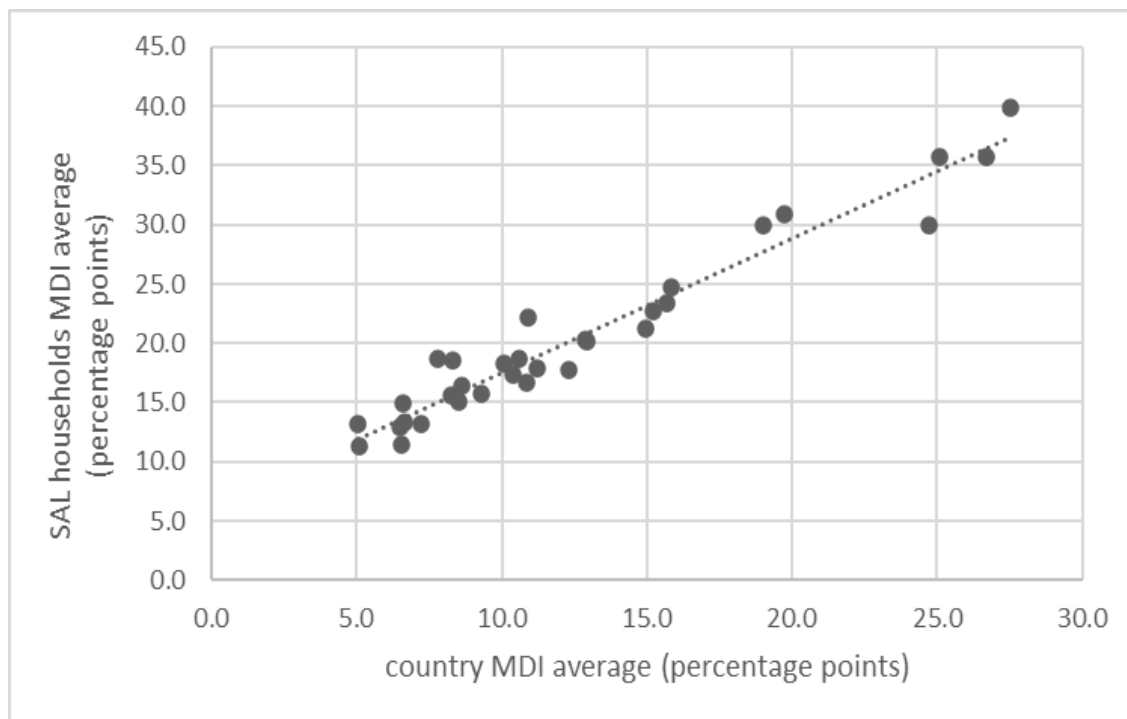


Figure J.1: Scatter plot displaying correlation in Table J.4 above, R^2 linear = 0.942

J.4.2 SAL-nonSAL MDI difference and country MDI

Table J.5: Correlation between the country average difference in SAL and nonSAL households MDI score with country MDI average score (2018)

		difference in SAL and nonSAL households MDI country average (2018)	country MDI average (2018)		
difference in SAL and nonSAL households MDI country average (2018)	Kendall's tau-b	1	0.323**		
	Sig. (2-tailed)		0.009		
	N	32	32		
	Bootstrap*	Bias	0	0.000	
		Std. Error	0	0.133	
		BCa 99% Confidence Interval	Lower	.	-0.042***
			Upper	.	0.627***
*** Confidence interval crosses zero.					
** Correlation is significant at the 0.01 level (2-tailed).					
* Bootstrap results are based on 10,000 bootstrap samples.					

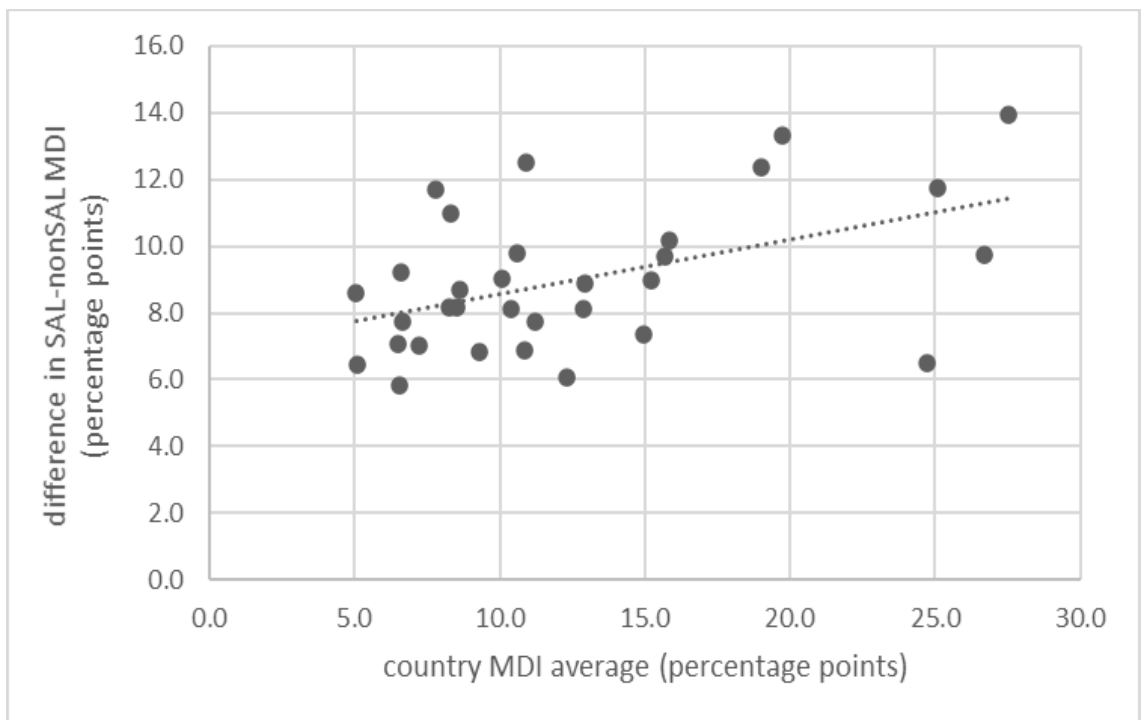


Figure J.2: Scatter plot displaying non-correlation in Table J.5 above, R² linear = 0.230

J.4.3 Country MDI and country GDPPC-PPS

Table J.6: Correlation between country MDI average (2018) with country GDP per capita in Purchasing Power Standards (average 2016-2018)

		country MDI average (2018)	GDPPC-PPS (2016-2018 average)		
country MDI average (2018)	Kendall's tau-b	1	-0.714**		
	Sig. (2-tailed)		< 0.001		
	N	32	32		
	Bootstrap*	Bias	0	0.000	
		Std. Error	0	0.061	
		BCa 99% Confidence Interval	Lower	.	-0.849
			Upper	.	-0.532

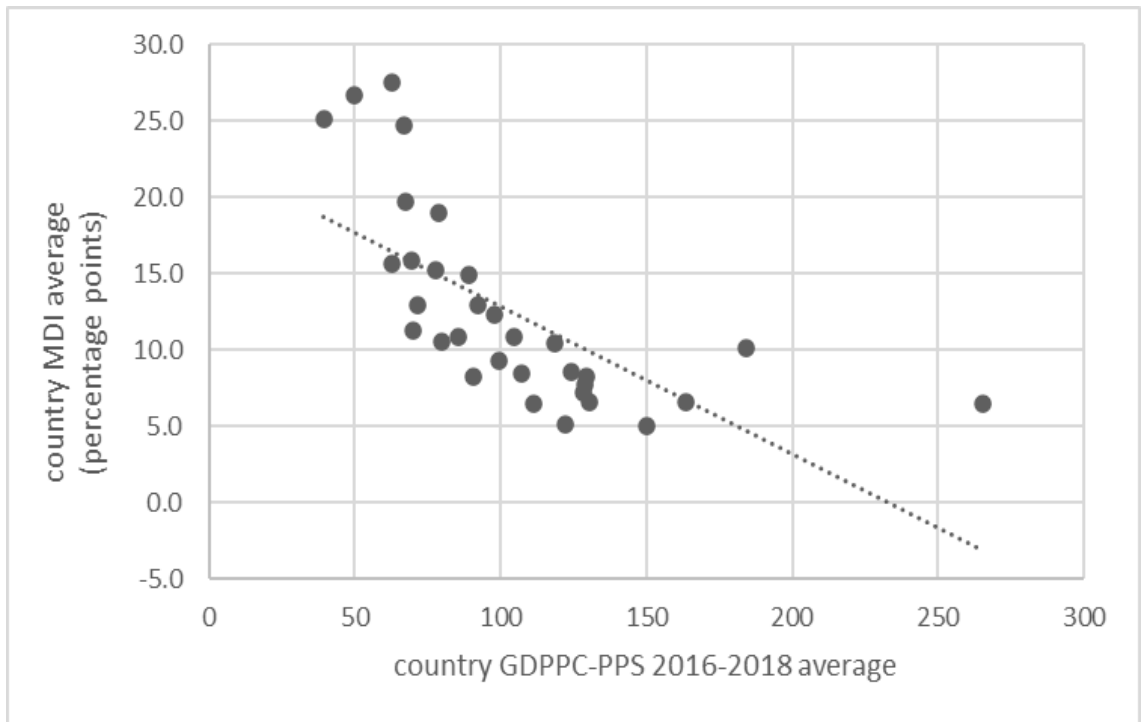


Figure J.3: Scatter plot displaying correlation in Table J.6 above, R2 linear = 0.454

J.4.4 SAL households MDI and country GDPPC-PPS

Table J.7: Correlation between SAL households MDI country average (2018) with country GDP per capita in Purchasing Power Standards (average 2016-2018)

		SAL households MDI country average (2018)	GDPPC-PPS (2016-2018 average)		
SAL households MDI country average (2018)	Kendall's tau-b	1	-0.629**		
	Sig. (2-tailed)		< 0.001		
	N	32	32		
	Bootstrap*	Bias	0	0.000	
		Std. Error	0	0.082	
		BCa 99% Confidence Interval	Lower	.	-0.800
			Upper	.	-0.395

** Correlation is significant at the 0.01 level (2-tailed).

* Bootstrap results are based on 10,000 bootstrap samples.

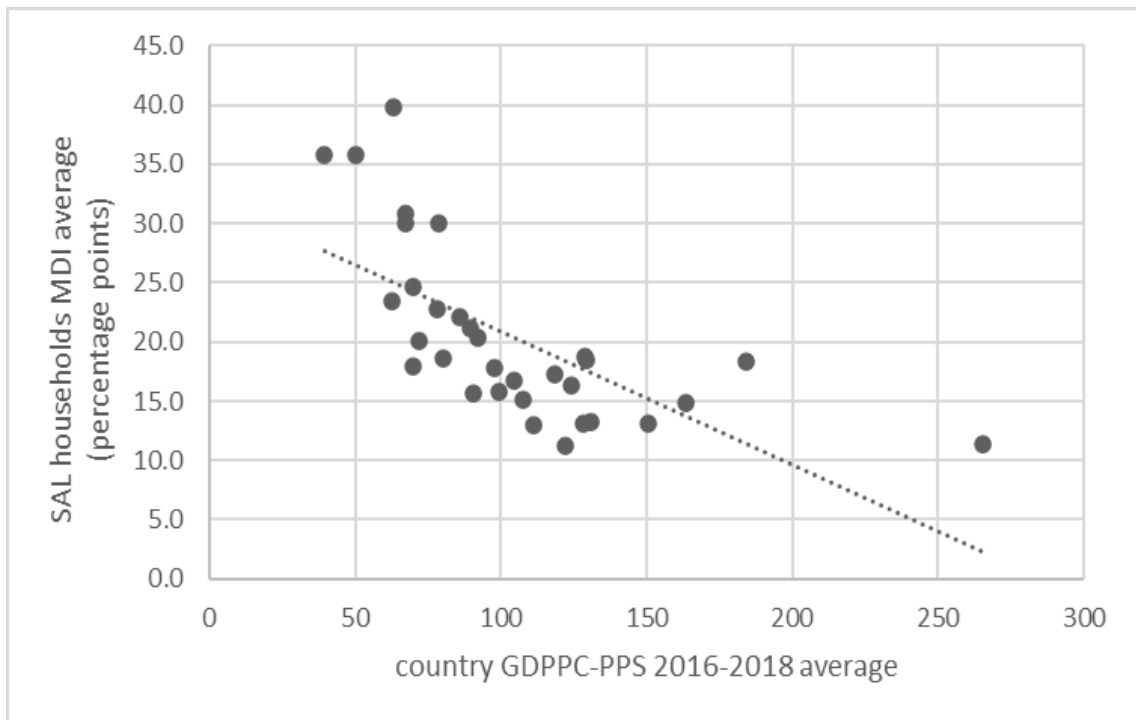


Figure J.4: Scatter plot displaying correlation in Table J.7 above, R2 linear = 0.445

J.4.5 SAL-nonSAL MDI difference and country GDPPC-PPS

Table J.8: Correlation between the country average difference in SAL and nonSAL households MDI score with country (2018) with country GDP per capita in Purchasing Power Standards (average 2016-2018)

		difference in SAL and nonSAL households MDI country average (2018)	GDPPC-PPS (2016-2018 average)		
difference in SAL and nonSAL households MDI country average (2018)	Kendall's tau-b	1	-0.246**		
	Sig. (2-tailed)		0.048		
	N	32	32		
	Bootstrap*	Bias	0	0.011	
		Std. Error	0	0.132	
		BCa 99% Confidence Interval	Lower	.	-0.555***
			Upper	.	0.111***
*** Confidence interval crosses zero.					
** Correlation is not significant at the 0.01 level (2-tailed).					
* Bootstrap results are based on 10,000 bootstrap samples.					

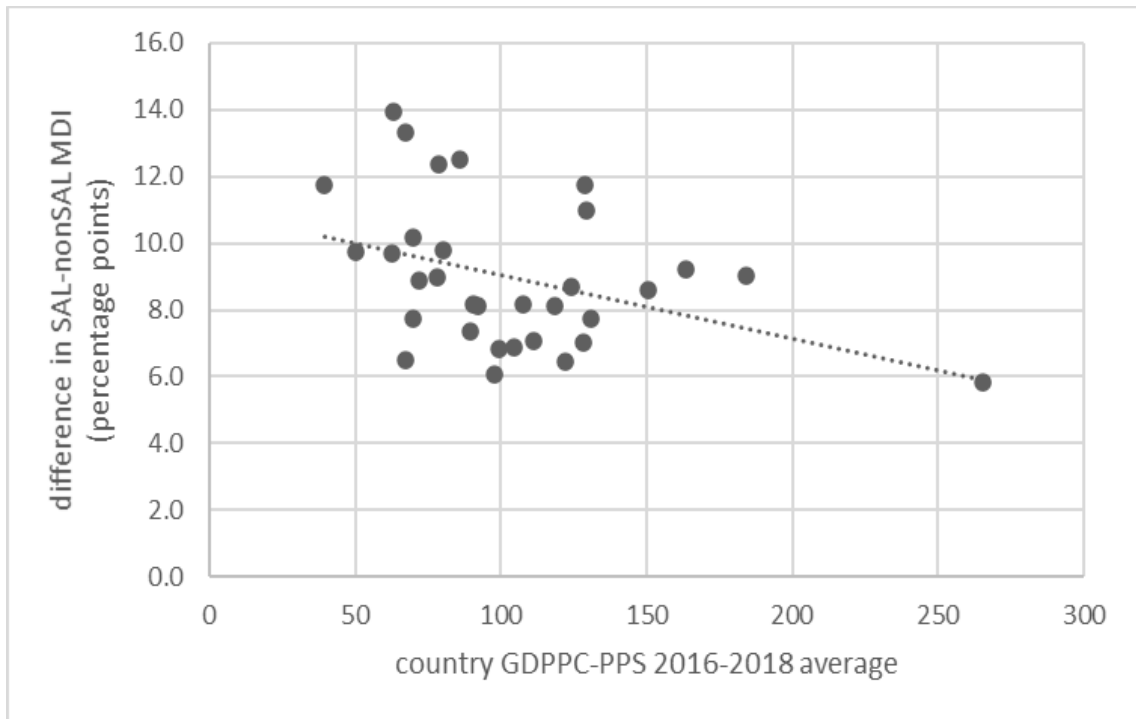


Figure J.5: Scatter plot displaying non-correlation in Table J.8 above, R2 linear = 0.151

J.5 Crosstabulations for SAL and nonSAL households x ten most frequent deprivation items, sub-sample HEDI greater than 70% of MHEDI and less than or equal to the MHEDI

J.5.1 Afford a week-long holiday away from home

Household with one or more adults with severe activity limitation x Afford a week-long holiday away from home Crosstabulation								
Afford a week-long holiday away from home								
	yes			no			Total	
Household with one or more SAL adult	N	%	Standardised Residual	N	%	Standardised Residual	N	%
nonSAL	34,090,353	70.2	221.6	14,455,107	29.8	-320.1	48,545,460	100.0
SAL ₁	3,960,634	52.8	-494	3,543,235	47.2	713.7	7,503,869	100.0
SAL ₊	448,052	50.1	-201.4	446,362	49.9	291	894,414	100.0
Total	38,499,039	67.6		18,444,704	32.4		56,943,743	100.0

Household with one or more adults with severe activity limitation x Afford a week-long holiday away from home Chi-Square Tests						
	Value	df	Asymptotic Significance (2-sided)	Monte Carlo Sig. (2-sided)		
				Significance	99% Confidence Interval	
					Lower Bound	Upper Bound
Pearson Chi-Square	1030192.574	2	.000	.000 ^b	.000	< .001
Likelihood Ratio	980768.319	2	.000	.000 ^b	.000	< .001
Fisher-Freeman-Halton Exact Test	980768.534			.000 ^b	.000	< .001
Linear-by-Linear Association	970719.099 ^a	1	.000	.000 ^b	.000	< .001
N of Valid Cases: 56,943,743						
a. The standardised statistic is 985.251.						
b. Based on 10,000 sampled tables with starting seed 846668601.						

J.5.2 Capacity to face unexpected required expenses

Household with one or more adults with severe activity limitation x Capacity to face unexpected expense Crosstabulation								
	Capacity to face unexpected required expense							
	yes			no			Total	
Household with one or more SAL adult	N	%	Standardised Residual	N	%	Standardised Residual	N	%
nonSAL	30,296,714	62.4	147.6	18,248,746	37.6	-183.7	48,545,460	100.0
SAL ₁	3,852,442	51.3	-331	3,651,427	48.7	411.8	7,503,869	100.0
SAL ₊	448,537	50.1	-128.7	445,877	49.9	160.2	894,414	100.0
Total	34,597,693	60.8		22,346,050	39.2		56,943,743	100.0

Household with one or more adults with severe activity limitation x Capacity to face unexpected expense Chi-Square Tests						
	Value	df	Asymptotic Significance (2-sided)	Monte Carlo Sig. (2-sided)		
				Significance	99% Confidence Interval	
					Lower Bound	Upper Bound
Pearson Chi-Square	376910.717	2	.000	.000 ^b	.000	<.001
Likelihood Ratio	370217.042	2	.000	.000 ^b	.000	<.001
Fisher-Freeman-Halton Exact Test	370217.120			.000 ^b	.000	<.001
Linear-by-Linear Association	352425.981 ^a	1	.000	.000 ^b	.000	<.001
N of Valid Cases: 56,943,743						
a. The standardised statistic is 593.655.						
b. Based on 10,000 sampled tables with starting seed 846668601.						

J.5.3 Afford to replace worn-out furniture

Household with one or more adults with severe activity limitation x Afford to replace worn out furniture Crosstabulation								
	Afford to replace worn out furniture						Total	
	yes			no				
Household with one or more SAL adult	N	%	Standardised Residual	N	%	Standardised Residual	N	%
nonSAL	37,151,202	76.5	130.3	11,394,258	23.5	-225.1	48,545,460	100.0
SAL ₁	4,937,168	65.8	-288.5	2,566,701	34.2	498.5	7,503,869	100.0
SAL ₊	568,524	63.6	-124	325,891	36.4	214.2	894,415	100.0
Total	42,656,894	74.9		14,286,850	25.1		56,943,744	100.0

Household with one or more adults with severe activity limitation x Afford to replace worn out furniture Chi-Square Tests							
	Value	df	Asymptotic Significance (2-sided)	Monte Carlo Sig. (2-sided)			
				Significance	99% Confidence Interval		
					Lower Bound	Upper Bound	
Pearson Chi-Square	460658.434	2	.000	.000 ^b	.000	< .001	
Likelihood Ratio	434827.193	2	.000	.000 ^b	.000	< .001	
Fisher-Freeman-Halton Exact Test	434827.537			.000 ^b	.000	< .001	
Linear-by-Linear Association	437649.139 ^a	1	.000	.000 ^b	.000	< .001	
N of Valid Cases: 56,943,744							
a. The standardised statistic is 661.551.							
b. Based on 10,000 sampled tables with starting seed 846668601.							

J.5.4 Ability to make both ends meet

Household with one or more adults with severe activity limitation x Ability to make both ends meet								
Crosstabulation								
	Ability to make both ends meet							
	yes			no			Total	
Household with one or more SAL adult	N	%	Standardised Residual	N	%	Standardised Residual	N	%
nonSAL	39,136,887	80.6	121.1	9,408,573	19.4	-235.4	48,545,460	100.0
SAL ₁	5,299,044	70.6	-260.5	2,204,826	29.4	506.3	7,503,870	100.0
SAL ₊	591,385	66.1	-137.8	303,029	33.9	267.8	894,414	100.0
Total	45,027,316	79.1		11,916,428	20.9		56,943,744	100.0

Household with one or more adults with severe activity limitation x Ability to make both ends meet							
Chi-Square Tests							
	Value	df	Asymptotic Significance (2-sided)	Monte Carlo Sig. (2-sided)			
				Significance	99% Confidence Interval		
					Lower Bound	Upper Bound	
Pearson Chi-Square	485030.708	2	.000	.000 ^b	.000	< .001	
Likelihood Ratio	449718.555	2	.000	.000 ^b	.000	< .001	
Fisher-Freeman-Halton Exact Test	449719.027			.000 ^b	.000	< .001	
Linear-by-Linear Association	474079.734 ^a	1	.000	.000 ^b	.000	< .001	
N of Valid Cases: 56,943,744							
a. The standardised statistic is 688.534.							
b. Based on 10,000 sampled tables with starting seed 846668601.							

J.5.5 Afford to spend a small amount of money each week on oneself

Household with one or more adults with severe activity limitation x Afford a small amount of money on oneself Crosstabulation								
	Afford to spend a small amount of money each week on oneself							
	yes			no			Total	
Household with one or more SAL adult	N	%	Standardised Residual	N	%	Standardised Residual	N	%
nonSAL	40,846,549	84.1	113.8	7,698,911	15.9	-248.4	48,545,460	100.0
SAL ₁	5,647,781	75.3	-222.7	1,856,088	24.7	486.1	7,503,869	100.0
SAL ₊	573,033	64.1	-193.4	321,381	35.9	422.1	894,414	100.0
Total	47,067,363	82.7		9,876,380	17.3		56,943,743	100.0

Household with one or more adults with severe activity limitation x Afford a small amount of money on oneself Chi-Square Tests							
	Value	df	Asymptotic Significance (2-sided)	Monte Carlo Sig. (2-sided)			
				Significance	99% Confidence Interval		
					Lower Bound	Upper Bound	
Pearson Chi-Square	576162.957	2	.000	.000 ^b	.000	< .001	
Likelihood Ratio	512286.305	2	.000	.000 ^b	.000	< .001	
Fisher-Freeman-Halton Exact Test	512286.968			.000 ^b	.000	< .001	
Linear-by-Linear Association	573915.042 ^a	1	.000	.000 ^b	.000	< .001	
N of Valid Cases: 56,943,743							
a. The standardised statistic is 757.572.							
b. Based on 10,000 sampled tables with starting seed 846668601.							

J.5.6 Afford to regularly participate in a leisure activity

Household with one or more adults with severe activity limitation x Afford to participate in leisure activities								
Crosstabulation								
	Afford to regularly participate in leisure activities						Total	
	yes			no				
Household with one or more SAL adult	N	%	Standardised Residual	N	%	Standardised Residual	N	%
nonSAL	40,875,111	84.2	82	7,670,349	15.8	-182.1	48,545,460	100.0
SAL ₁	5,821,302	77.6	-166.7	1,682,567	22.4	370	7,503,869	100.0
SAL ₊	638,725	71.4	-121.5	255,689	28.6	269.7	894,414	100.0
Total	47,335,138	83.1		9,608,605	16.9		56,943,743	100.0

Household with one or more adults with severe activity limitation x Afford to participate in leisure activities							
Chi-Square Tests							
	Value	df	Asymptotic Significance (2-sided)	Monte Carlo Sig. (2-sided)			
				Significance	99% Confidence Interval		
					Lower Bound	Upper Bound	
Pearson Chi-Square	292089.529	2	.000	.000 ^b	.000	< .001	
Likelihood Ratio	268569.655	2	.000	.000 ^b	.000	< .001	
Fisher-Freeman-Halton Exact Test	268570.193			.000 ^b	.000	< .001	
Linear-by-Linear Association	292000.201 ^a	1	.000	.000 ^b	.000	< .001	
N of Valid Cases: 56,943,743							
a. The standardised statistic is 540.370.							
b. Based on 10,000 sampled tables with starting seed 846668601.							

J.5.7 Afford to replace worn out clothes by new ones

Household with one or more adults with severe activity limitation x Afford to replace worn out clothes Crosstabulation								
Afford to replace worn out clothes with new ones								
	yes			no			Total	
Household with one or more SAL adult	N	%	Standardised Residual	N	%	Standardised Residual	N	%
nonSAL	44,043,671	90.7	104	4,501,789	9.3	-300.6	48,545,460	100.0
SAL ₁	6,104,271	81.3	-231	1,399,598	18.7	667.8	7,503,870	100.0
SAL ₊	712,274	79.6	-96.9	182,141	20.4	280.1	894,414	100.0
Total	50,860,216	89.3		6,083,528	10.7		56,943,744	100.0

Household with one or more adults with severe activity limitation x Afford to replace worn out clothes Chi-Square Tests							
	Value	df	Asymptotic Significance (2-sided)	Monte Carlo Sig. (2-sided)			
				Significance	99% Confidence Interval		
					Lower Bound	Upper Bound	
Pearson Chi-Square	688312.900	2	.000	.000 ^b	.000	< .001	
Likelihood Ratio	595905.045	2	.000	.000 ^b	.000	< .001	
Fisher-Freeman-Halton Exact Test	595905.913			.000 ^b	.000	< .001	
Linear-by-Linear Association	651473.798 ^a	1	.000	.000 ^b	.000	< .001	
N of Valid Cases: 56,943,744							
a. The standardised statistic is 807.139.							
b. Based on 10,000 sampled tables with starting seed 846668601.							

J.5.8 Household dwelling with too much noise from neighbours or outside

Household with one or more adults with severe activity limitation x Dwelling with too much noise from outside Crosstabulation								
	Household dwelling with too much noise from neighbours or outside							
	no			yes			Total	
Household with one or more SAL adult	N	%	Standardised Residual	N	%	Standardised Residual	N	%
nonSAL	39,561,184	81.5	17.4	8,984,276	18.5	-36.3	48,545,460	100.0
SAL ₁	6,030,912	80.4	-27.2	1,472,957	19.6	56.8	7,503,870	100.0
SAL ₊	684,576	76.5	-49.6	209,839	23.5	103.3	894,414	100.0
Total	46,276,672	81.3		10,667,072	18.7		56,943,744	100.0

Household with one or more adults with severe activity limitation x Dwelling with too much noise from outside Chi-Square Tests							
	Value	df	Asymptotic Significance (2-sided)	Monte Carlo Sig. (2-sided)			
				Significance	99% Confidence Interval		
					Lower Bound	Upper Bound	
Pearson Chi-Square	18723.155	2	.000	.000 ^b	.000	< .001	
Likelihood Ratio	17930.397	2	.000	.000 ^b	.000	< .001	
Fisher-Freeman-Halton Exact Test	17930.588			.000 ^b	.000	< .001	
Linear-by-Linear Association	15838.727 ^a	1	.000	.000 ^b	.000	< .001	
N of Valid Cases: 56,943,744							
a. The standardised statistic is 125.852.							
b. Based on 10,000 sampled tables with starting seed 846668601.							

J.5.9 Household dwelling with leaking roof, dampness or similar problems

Household with one or more adults with severe activity limitation x Dwelling with leaking roof or similar problems Crosstabulation								
	Household dwelling with leaking roof, damp walls or similar problems						Total	
	no			yes			Total	
Household with one or more SAL adult	N	%	Standardised Residual	N	%	Standardised Residual	N	%
nonSAL	42,279,937	87.1	45.9	6,265,522	12.9	-116.1	48,545,459	100.0
SAL ₁	6,262,951	83.5	-88.9	1,240,918	16.5	224.9	7,503,869	100.0
SAL ₊	702,664	78.6	-80.5	191,750	21.4	203.7	894,414	100.0
Total	49,245,552	86.5		7,698,190	13.5		56,943,742	100.0

Household with one or more adults with severe activity limitation x Dwelling with leaking roof or similar problems Chi-Square Tests							
	Value	df	Asymptotic Significance (2-sided)	Monte Carlo Sig. (2-sided)			
				Significance	99% Confidence Interval		
					Lower Bound	Upper Bound	
Pearson Chi-Square	122021.609	2	.000	.000 ^b	.000	< .001	
Likelihood Ratio	112801.224	2	.000	.000 ^b	.000	< .001	
Fisher-Freeman-Halton Exact Test	112801.716			.000 ^b	.000	< .001	
Linear-by-Linear Association	121195.012 ^a	1	.000	.000 ^b	.000	< .001	
N of Valid Cases: 56,943,742							
a. The standardised statistic is 348.131.							
b. Based on 10,000 sampled tables with starting seed 846668601.							

J.5.10 Afford to get together with friends/family once a month

Household with one or more adults with severe activity limitation x Afford to get together with family/friends Crosstabulation								
Afford to get together with friends/family once a month								
	yes			no			Total	
Household with one or more SAL adult	N	%	Standardised Residual	N	%	Standardised Residual	N	%
nonSAL	44,273,982	91.2	95.2	4,271,477	8.8	-284.2	48,545,460	100.0
SAL ₁	6,246,305	83.2	-192.5	1,257,565	16.8	574.6	7,503,870	100.0
SAL ₊	675,060	75.5	-143.9	219,355	24.5	429.5	894,414	100.0
Total	51,195,347	89.9		5,748,397	10.1		56,943,744	100.0

Household with one or more adults with severe activity limitation x Afford to get together with family/friends Chi-Square Tests							
	Value	df	Asymptotic Significance (2-sided)	Monte Carlo Sig. (2-sided)			
				Significance	99% Confidence Interval		
					Lower Bound	Upper Bound	
Pearson Chi-Square	662214.884	2	.000	.000 ^b	.000	< .001	
Likelihood Ratio	559527.94	2	.000	.000 ^b	.000	< .001	
Fisher-Freeman-Halton Exact Test	559528.96			.000 ^b	.000	< .001	
Linear-by-Linear Association	662190.097 ^a	1	.000	.000 ^b	.000	< .001	
N of Valid Cases: 56,943,744							
a. The standardised statistic is 813.751.							
b. Based on 10,000 sampled tables with starting seed 846668601.							

J.6 Crosstabulations for SAL and nonSAL households x ten most frequent deprivation items, sub-sample HEDI greater than MHEDI and less than or equal to the 140% of MHEDI

J.6.1 Afford a week-long holiday away from home

Household with one or more adults with severe activity limitation x Afford a week-long holiday away from home Crosstabulation								
Afford a week-long holiday away from home								
	yes			no			Total	
Household with one or more SAL adult	N	%	Standardised Residual	N	%	Standardised Residual	N	%
nonSAL	42,545,985	83.5	155.8	8,391,454	16.5	-327.7	50,937,439	100.0
SAL ₁	3,563,067	65.2	-423.4	1,902,050	34.8	890.4	5,465,117	100.0
SAL ₊	337,072	61.4	-165.2	211,730	38.6	347.3	548,802	100.0
Total	46,446,124	81.6		10,505,234	18.4		56,951,358	100.0

Household with one or more adults with severe activity limitation x Afford a week-long holiday away from home Chi-Square Tests							
	Value	df	Asymptotic Significance (2-sided)	Monte Carlo Sig. (2-sided)			
				Significance	99% Confidence Interval		
					Lower Bound	Upper Bound	
Pearson Chi-Square	1251602.753	2	.000	.000 ^b	.000	< .001	
Likelihood Ratio	1076704.034	2	.000	.000 ^b	.000	< .001	
Fisher-Freeman-Halton Exact Test	1076704.810			.000 ^b	.000	< .001	
Linear-by-Linear Association	1196904.917 ^a	1	.000	.000 ^b	.000	< .001	
N of Valid Cases: 56,951,358							
a. The standardised statistic is 1094.031.							
b. Based on 10,000 sampled tables with starting seed 2096426169.							

J.6.2 Capacity to face unexpected required expenses

Household with one or more adults with severe activity limitation x Capacity to face unexpected expense Crosstabulation								
	Capacity to face unexpected required expense							
	yes			no			Total	
Household with one or more SAL adult	N	%	Standardised Residual	N	%	Standardised Residual	N	%
nonSAL	40,134,999	78.8	94.6	10,802,440	21.2	-176.2	50,937,439	100.0
SAL ₁	3,722,154	68.1	-252.5	1,742,963	31.9	470.4	5,465,117	100.0
SAL ₊	351,471	64.0	-114.2	197,331	36.0	212.7	548,802	100.0
Total	44,208,624	77.6		12,742,734	22.4		56,951,358	100.0

Household with one or more adults with severe activity limitation x Capacity to face unexpected expense Chi-Square Tests							
	Value	df	Asymptotic Significance (2-sided)	Monte Carlo Sig. (2-sided)			
				Significance	99% Confidence Interval		
					Lower Bound	Upper Bound	
Pearson Chi-Square	383302.657	2	.000	.000 ^b	.000	<.001	
Likelihood Ratio	354293.029	2	.000	.000 ^b	.000	<.001	
Fisher-Freeman-Halton Exact Test	354293.496			.000 ^b	.000	<.001	
Linear-by-Linear Association	373495.631 ^a	1	.000	.000 ^b	.000	<.001	
N of Valid Cases: 56,951,358							
a. The standardised statistic is 611.143.							
b. Based on 10,000 sampled tables with starting seed 2096426169.							

J.6.3 Afford to replace worn-out furniture

Household with one or more adults with severe activity limitation x Afford to replace worn out furniture								
Crosstabulation								
	Afford to replace worn out furniture						Total	
	yes			no				
Household with one or more SAL adult	N	%	Standardised Residual	N	%	Standardised Residual	N	%
nonSAL	44,246,524	86.9	79.6	6,690,915	13.1	-195.8	50,937,439	100.0
SAL ₁	4,238,815	77.6	-208.7	1,226,302	22.4	513.7	5,465,117	100.0
SAL ₊	396,987	72.3	-107.9	151,816	27.7	265.6	548,803	100.0
Total	48,882,326	85.8		8,069,033	14.2		56,951,3589	100.0

Household with one or more adults with severe activity limitation x Afford to replace worn out furniture							
Chi-Square Tests							
	Value	df	Asymptotic Significance (2-sided)	Monte Carlo Sig. (2-sided)			
				Significance	99% Confidence Interval		
					Lower Bound	Upper Bound	
Pearson Chi-Square	434247.354	2	.000	.000 ^b	.000	< .001	
Likelihood Ratio	381668.276	2	.000	.000 ^b	.000	< .001	
Fisher-Freeman-Halton Exact Test	381669.068			.000 ^b	.000	< .001	
Linear-by-Linear Association	428931.967 ^a	1	.000	.000 ^b	.000	< .001	
N of Valid Cases: 56,951,359							
a. The standardised statistic is 654.929.							
b. Based on 10,000 sampled tables with starting seed 2096426169.							

J.6.4 Ability to make both ends meet

Household with one or more adults with severe activity limitation x Ability to make both ends meet Crosstabulation								
	Ability to make both ends meet							
	yes			no			Total	
Household with one or more SAL adult	N	%	Standardised Residual	N	%	Standardised Residual	N	%
nonSAL	45,173,060	88.7	89.4	5,764,379	11.3	-236.7	50,937,439	100.0
SAL ₁	4,279,229	78.3	-230.2	1,185,888	21.7	609.3	5,465,117	100.0
SAL ₊	386,650	70.5	-135.1	162,153	29.5	357.6	548,803	100.0
Total	49,838,939	87.5		7,112,420	12.5		56,951,359	100.0

Household with one or more adults with severe activity limitation x Ability to make both ends meet Chi-Square Tests						
	Value	df	Asymptotic Significance (2-sided)	Monte Carlo Sig. (2-sided)		
				Significance	99% Confidence Interval	
					Lower Bound	Upper Bound
Pearson Chi-Square	634365.752	2	.000	.000 ^b	.000	< .001
Likelihood Ratio	535950.085	2	.000	.000 ^b	.000	< .001
Fisher-Freeman-Halton Exact Test	535951.085			.000 ^b	.000	< .001
Linear-by-Linear Association	632080.732 ^a	1	.000	.000 ^b	.000	< .001
N of Valid Cases: 56,951,359						
a. The standardised statistic is 795.035.						
b. Based on 10,000 sampled tables with starting seed 2096426169.						

J.6.5 Afford to spend a small amount of money each week on oneself

Household with one or more adults with severe activity limitation x Afford a small amount of money on oneself								
Crosstabulation								
	Afford to spend a small amount of money each week on oneself							
	yes			no			Total	
Household with one or more SAL adult	N	%	Standardised Residual	N	%	Standardised Residual	N	%
nonSAL	46,435,391	91.2	74.6	4,502,048	8.8	-225.8	50,937,439	100.0
SAL ₁	4,473,189	81.8	-204.8	991,929	18.2	620.3	5,465,118	100.0
SAL ₊	444,294	81.0	-71.9	104,509	19.0	217.7	548,803	100.0
Total	51,352,874	90.2		5,598,486	9.8		56,951,360	100.0

Household with one or more adults with severe activity limitation x Afford a small amount of money on oneself							
Chi-Square Tests							
	Value	df	Asymptotic Significance (2-sided)	Monte Carlo Sig. (2-sided)			
				Significance	99% Confidence Interval		
					Lower Bound	Upper Bound	
Pearson Chi-Square	535872.815	2	.000	.000 ^b	.000	< .001	
Likelihood Ratio	451216.406	2	.000	.000 ^b	.000	< .001	
Fisher-Freeman-Halton Exact Test	451217.380			.000 ^b	.000	< .001	
Linear-by-Linear Association	504803.845 ^a	1	.000	.000 ^b	.000	< .001	
N of Valid Cases: 56,951,360							
a. The standardised statistic is 710.495.							
b. Based on 10,000 sampled tables with starting seed 2096426169.							

J.6.6 Afford to regularly participate in a leisure activity

Household with one or more adults with severe activity limitation x Afford to participate in leisure activities								
Crosstabulation								
	Afford to regularly participate in leisure activities						Total	
	yes			no				
Household with one or more SAL adult	N	%	Standardised Residual	N	%	Standardised Residual	N	%
nonSAL	46,592,493	91.5	60.7	4,344,946	8.5	-189	50,937,439	100.0
SAL ₁	4,587,161	83.9	-165.1	877,956	16.1	514.5	5,465,117	100.0
SAL ₊	452,763	82.5	-63.5	96,039	17.5	197.8	548,802	100.0
Total	51,632,417	90.7		5,318,941	9.3		56,951,358	100.0

Household with one or more adults with severe activity limitation x Afford to participate in leisure activities							
Chi-Square Tests							
	Value	df	Asymptotic Significance (2-sided)	Monte Carlo Sig. (2-sided)			
				Significance	99% Confidence Interval		
					Lower Bound	Upper Bound	
Pearson Chi-Square	374511.460	2	.000	.000 ^b	.000	< .001	
Likelihood Ratio	320937.556	2	.000	.000 ^b	.000	< .001	
Fisher-Freeman-Halton Exact Test	320938.473			.000 ^b	.000	< .001	
Linear-by-Linear Association	357437.888 ^a	1	.000	.000 ^b	.000	< .001	
N of Valid Cases: 56,951,358							
a. The standardised statistic is 597.861.							
b. Based on 10,000 sampled tables with starting seed 2096426169.							

J.6.7 Afford to replace worn out clothes by new ones

Household with one or more adults with severe activity limitation x Afford to replace worn out clothes Crosstabulation								
Afford to replace worn out clothes with new ones								
	yes			no			Total	
Household with one or more SAL adult	N	%	Standardised Residual	N	%	Standardised Residual	N	%
nonSAL	48,539,737	95.3	62.1	2,397,702	4.7	-256.1	50,937,439	100.0
SAL ₁	4,785,144	87.6	-165.7	679,973	12.4	683.5	5,465,117	100.0
SAL ₊	464,122	84.6	-75.3	84,681	15.4	310.5	548,803	100.0
Total	53,789,003	94.4		3,162,356	5.6		56,951,359	100.0

Household with one or more adults with severe activity limitation x Afford to replace worn out clothes Chi-Square Tests							
	Value	df	Asymptotic Significance (2-sided)	Monte Carlo Sig. (2-sided)			
				Significance	99% Confidence Interval		
					Lower Bound	Upper Bound	
Pearson Chi-Square	666144.980	2	.000	.000 ^b	.000	< .001	
Likelihood Ratio	515932.141	2	.000	.000 ^b	.000	< .001	
Fisher-Freeman-Halton Exact Test	515933.627			.000 ^b	.000	< .001	
Linear-by-Linear Association	649451.151 ^a	1	.000	.000 ^b	.000	< .001	
N of Valid Cases: 56,951,359							
a. The standardised statistic is 805.885.							
b. Based on 10,000 sampled tables with starting seed 2096426169.							

J.6.8 Household dwelling with too much noise from neighbours or outside

Household with one or more adults with severe activity limitation x Dwelling with too much noise from outside Crosstabulation								
	Household dwelling with too much noise from neighbours or outside							
	no			yes			Total	
Household with one or more SAL adult	N	%	Standardised Residual	N	%	Standardised Residual	N	%
nonSAL	41,941,652	82.3	14.1	8,995,787	17.7	-30.3	50,937,439	100.0
SAL ₁	4,420,376	80.9	-32.9	1,044,741	19.1	70.7	5,465,117	100.0
SAL ₊	429,305	78.2	-32.2	119,497	21.8	69.0	548,802	100.0
Total	46,791,333	82.2		10,160,025	17.8		56,951,358	100.0

Household with one or more adults with severe activity limitation x Dwelling with too much noise from outside Chi-Square Tests						
	Value	df	Asymptotic Significance (2-sided)	Monte Carlo Sig. (2-sided)		
				Significance	99% Confidence Interval	
					Lower Bound	Upper Bound
Pearson Chi-Square	12991.314	2	.000	.000 ^b	.000	< .001
Likelihood Ratio	12585.901	2	.000	.000 ^b	.000	< .001
Fisher-Freeman-Halton Exact Test	12586.097			.000 ^b	.000	< .001
Linear-by-Linear Association	12608.601 ^a	1	.000	.000 ^b	.000	< .001
N of Valid Cases: 56,951,358						
a. The standardised statistic is 112.288.						
b. Based on 10,000 sampled tables with starting seed 2096426169.						

J.6.9 Household dwelling with leaking roof, dampness or similar problems

Household with one or more adults with severe activity limitation x Dwelling with leaking roof or similar problems Crosstabulation								
	Household dwelling with leaking roof, damp walls or similar problems						Total	
	no			yes				
Household with one or more SAL adult	N	%	Standardised Residual	N	%	Standardised Residual	N	%
nonSAL	45,611,878	89.5	32.4	5,325,561	10.5	-92.7	50,937,439	100.0
SAL ₁	4,701,817	86.0	-76.3	763,300	14.0	218.5	5,465,117	100.0
SAL ₊	439,249	80.0	-71.2	109,554	20.0	203.9	548,803	100.0
Total	50,752,944	89.1		6,198,415	10.9		56,951,359	100.0

Household with one or more adults with severe activity limitation x Dwelling with leaking roof or similar problems Chi-Square Tests							
	Value	df	Asymptotic Significance (2-sided)	Monte Carlo Sig. (2-sided)			
				Significance	99% Confidence Interval		
					Lower Bound	Upper Bound	
Pearson Chi-Square	109842.553	2	.000	.000 ^b	.000	< .001	
Likelihood Ratio	97944.594	2	.000	.000 ^b	.000	< .001	
Fisher-Freeman-Halton Exact Test	97945.272			.000 ^b	.000	< .001	
Linear-by-Linear Association	107370.899 ^a	1	.000	.000 ^b	.000	< .001	
N of Valid Cases: 56,951,359							
a. The standardised statistic is 327.675.							
b. Based on 10,000 sampled tables with starting seed 2096426169.							

J.6.10 Afford to get together with friends/family once a month

Household with one or more adults with severe activity limitation x Afford to get together with family/friends Crosstabulation								
	Afford to get together with friends/family once a month							
	yes			no			Total	
Household with one or more SAL adult	N	%	Standardised Residual	N	%	Standardised Residual	N	%
nonSAL	48,658,404	95.5	53.5	2,279,035	4.5	-228.4	50,937,439	100.0
SAL ₁	4,855,732	88.8	-142.8	609,385	11.2	609.3	5,465,117	100.0
SAL ₊	473,284	86.2	-65.1	75,518	13.8	277.8	548,802	100.0
Total	53,987,420	94.8		2,963,938	5.2		56,951,358	100.0

Household with one or more adults with severe activity limitation x Afford to get together with family/friends Chi-Square Tests							
	Value	df	Asymptotic Significance (2-sided)	Monte Carlo Sig. (2-sided)			
				Significance	99% Confidence Interval		
					Lower Bound	Upper Bound	
Pearson Chi-Square	528143.572	2	.000	.000 ^b	.000	< .001	
Likelihood Ratio	414563.851	2	.000	.000 ^b	.000	< .001	
Fisher-Freeman-Halton Exact Test	414565.283			.000 ^b	.000	< .001	
Linear-by-Linear Association	515121.951 ^a	1	.000	.000 ^b	.000	< .001	
N of Valid Cases: 56,951,358							
a. The standardised statistic is 717.720.							
b. Based on 10,000 sampled tables with starting seed 2096426169.							

J.7 Odds ratio for SAL vs nonSAL households experiencing the 10 most frequent deprivation items from the MDI, comparing subsamples 70% of MHEDI < HEDI <= MHEDI and MHEDI < HEDI <= 140% of MHEDI

Table J.9: Differences between the lower income (0.7 x MHEDI < HEDI <= MHEDI) and the higher income (MHEDI < HEDI <= 1.4 x MHEDI) SAL vs nonSAL households odds ratios on the likelihood of the 10 most frequent MDI deprivation items,

	item 2	item 9	item 8	item 1	item 3	item 4	item 5	item 6	item 10	item 7	total
Finland	-0.20	-0.05	0.29	0.58	-1.39	-1.24	-2.06	-2.06	-0.92	-2.21	-9.3
Slovenia	-1.20	-0.50	-0.12	-0.74	-0.82	-0.38	-0.15	-0.15	0.76	0.68	-2.6
Netherlands	-0.81	0.52	0.16	-0.16	-0.75	-1.78	0.65	0.65	0.52	-1.54	-2.6
Croatia	-0.38	-0.12	0.42	-1.54	0.13	-0.25	0.40	0.40	-0.79	-0.29	-2.0
Austria	0.41	0.33	0.00	-0.48	0.43	-0.47	-1.18	-1.18	1.45	-0.86	-1.5
Malta	0.40	-1.29	-0.17	-2.75	0.74	-0.97	0.75	0.75	0.14	0.91	-1.5
Slovakia	-0.40	-0.70	-0.06	-0.01	0.05	-0.12	0.10	0.10	-0.46	0.03	-1.5
Poland	-0.43	0.00	-0.07	0.24	0.14	-0.14	-0.77	-0.77	-0.20	1.28	-0.7
Portugal	0.40	0.00	0.20	-0.25	0.47	-0.51	-0.48	-0.48	0.27	-0.31	-0.7
Romania	-0.42	-0.93	0.01	-0.56	-0.06	-0.23	0.59	0.59	0.30	0.80	0.1
Germany	0.10	-0.23	0.03	0.79	0.20	-0.54	0.08	0.08	0.10	-0.16	0.5
Greece	0.06	-0.05	-0.06	0.06	0.00	-0.51	0.04	0.04	0.49	0.64	0.7
Serbia	0.44	-0.40	-0.25	-0.04	0.16	0.17	-0.22	-0.22	0.72	0.79	1.2
Belgium	-0.07	-0.51	0.46	-0.79	-0.51	0.27	0.33	0.33	0.67	0.98	1.2
Hungary	-0.42	-0.45	0.24	-0.53	-0.18	-0.46	1.18	1.18	-0.26	1.49	1.8
Spain	-0.43	-0.07	-0.20	0.60	-0.26	-0.04	0.03	0.03	1.23	1.01	1.9
Estonia	0.55	0.52	1.10	-0.46	-0.10	1.20	-0.34	-0.34	-0.07	-0.15	1.9
Iceland	0.24	1.13	-0.25	2.59	1.39	-1.33	0.62	0.62	-1.47	-1.48	2.1
Latvia	0.10	0.02	0.02	0.52	-0.07	-0.11	1.18	1.18	0.60	-0.23	3.2
Cyprus	0.38	-0.51	0.20	-0.31	-0.09	0.15	-1.58	-1.58	5.10	4.41	6.2
Italy	0.21	0.00	-0.19	1.03	1.27	0.82	1.03	1.03	0.49	0.89	6.6
France	0.14	0.32	0.28	0.60	0.39	1.85	0.87	0.87	1.59	1.15	8.1
United Kingdom	0.90	0.18	-0.17	1.57	0.19	2.02	1.04	1.04	0.35	1.18	8.3
Bulgaria	-0.49	0.94	0.35	-0.73	0.05	0.01	2.49	2.49	1.15	2.38	8.7
Lithuania	0.93	1.46	0.44	0.79	0.84	-0.40	0.87	0.87	2.27	1.18	9.2
Luxembourg	0.50	-0.18	-0.68	2.20	0.36	2.01	0.57	0.57	2.56	1.46	9.4
Ireland	0.08	0.39	0.55	0.45	0.48	-0.11	2.94	2.94	1.72	0.13	9.6
Sweden	1.16	0.53	0.73	-0.68	4.69	4.81	2.42	2.42	-1.45	-1.57	13.1
Czech Republic	0.62	0.01	0.54	1.40	0.82	0.09	2.79	2.79	0.77	3.48	13.3
Norway	-0.48	0.14	-0.60	-0.42	0.96	3.82	0.79	0.79	-0.82	16.93	21.1
Switzerland	0.27	0.93	-0.42	1.01	-0.15	1.34	2.12	2.12	10.13	6.56	23.9
Denmark	0.63	1.49	0.28	2.48	1.25	7.31	2.23	2.23	9.89	10.96	38.8
total	2.82	2.93	3.03	6.43	10.63	16.29	19.34	19.34	36.85	50.52	

Each cell represents the difference between the odds ratio of the lower income and the higher income SAL groups experiencing a deprivation item vs the comparable nonSAL households (higher income group odds ratio – lower income group odds ratio).

J.8 SAL and nonSAL households divided in five equal groups by their household equivalised disposable income

J.8.1 20th percentile

Table J.10: SAL and nonSAL households 20th percentile by their household equivalised disposable income (HEDI), listed by percentage difference

	SAL 20 th percentile (euros)	nonSAL 20 th percentile (euros)	difference in 20 th percentiles (euros)	% difference
Italy	10,141.00	10,080.00	-61.00	-0.6
Malta	8,752.33	8,997.75	245.42	2.7
Greece	4,857.67	5,044.44	186.77	3.7
Spain	8,346.35	8,859.00	512.65	5.8
Hungary	3,338.79	3,590.76	251.97	7.0
Iceland	26,370.67	28,450.24	2,079.57	7.3
Slovakia	5,148.30	5,595.06	446.76	8.0
Denmark	17,918.47	19,488.21	1,569.74	8.1
Lithuania	3,147.48	3,443.10	295.62	8.6
Austria	15,158.87	16,640.00	1,481.13	8.9
Bulgaria	1,789.08	1,969.49	180.41	9.2
Norway	23,160.50	25,559.24	2,398.74	9.4
Romania	1,663.46	1,836.37	172.91	9.4
France	14,290.00	15,790.00	1,500.00	9.5
Ireland	13,900.00	15,470.00	1,570.00	10.1
Netherlands	14,129.00	15,839.00	1,710.00	10.8
Portugal	5,304.00	5,976.00	672.00	11.2
Belgium	13,316.39	15,020.00	1,703.61	11.3
Poland	3,747.47	4,228.33	480.86	11.4
Sweden	13,648.54	15,619.14	1,970.60	12.6
Finland	13,909.00	15,928.67	2,019.67	12.7
Estonia	4,683.83	5,403.86	720.03	13.3
Czech Republic	5,255.07	6,266.66	1,011.59	16.1
Latvia	3,041.31	3,681.89	640.58	17.4
Cyprus	8,219.33	9,966.50	1,747.17	17.5
United Kingdom	11,150.00	13,750.00	2,600.00	18.9
Switzerland	23,344.02	28,885.95	5,541.93	19.2
Luxembourg	18,342.84	23,137.40	4,794.56	20.7
Serbia	1,107.66	1,450.51	342.85	23.6
Slovenia	6,470.00	8,504.76	2,034.76	23.9
Germany	10,632.67	14,237.00	3,604.33	25.3
Croatia	2,880.61	3,911.38	1,030.77	26.4

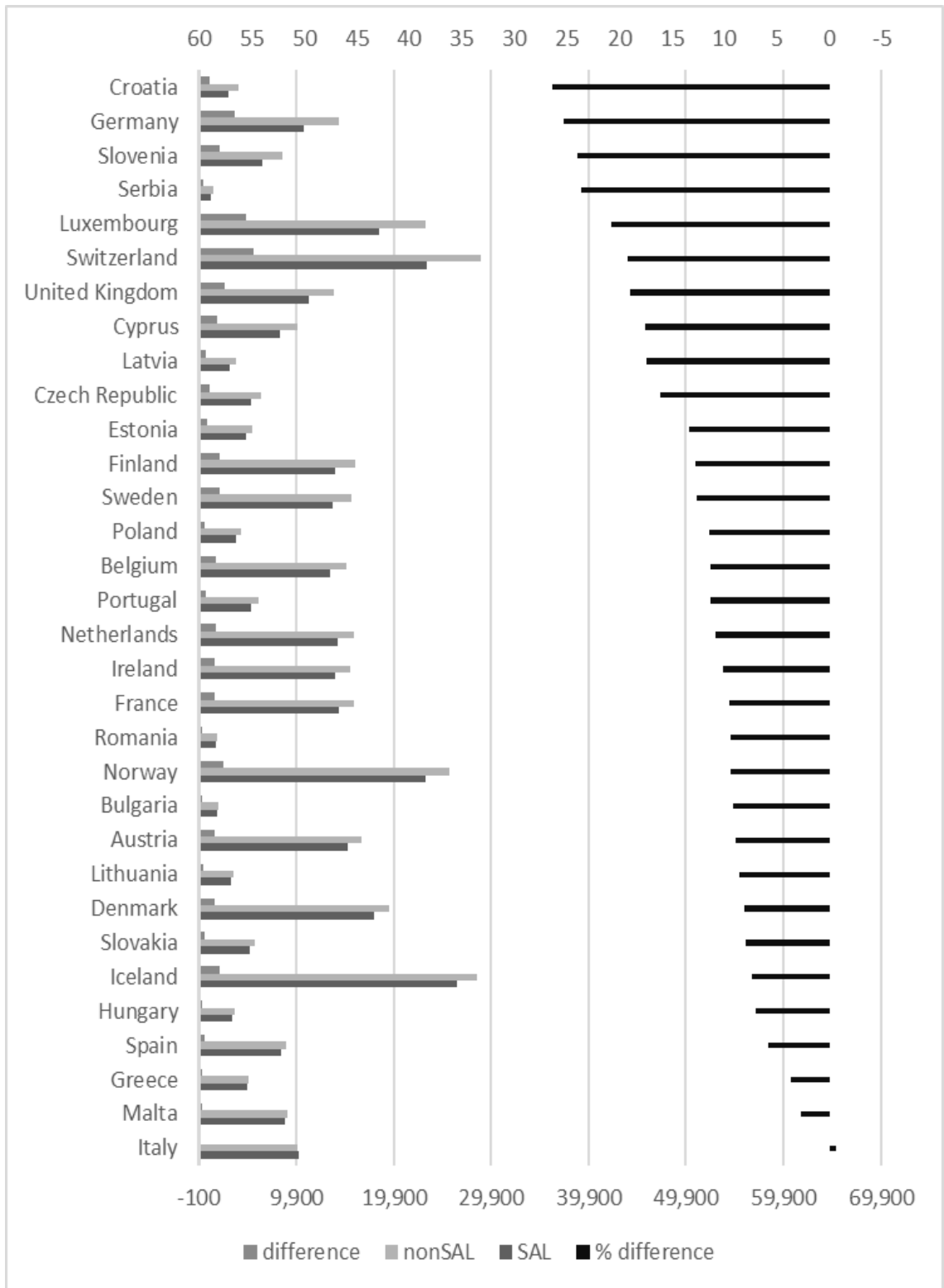


Figure J.6: Graphical representation of Table J.10 above(SAL and nonSAL households 20th percentile by their household equivalised disposable income, listed by percentage difference)

J.8.2 40th percentile

Table J.11: SAL and nonSAL households 40th percentile by their household equivalised disposable income, listed by percentage difference

	SAL 40 th percentile (euros)	nonSAL 40 th percentile (euros)	difference in 40 th percentiles (euros)	% difference
Italy	14,202.80	14,852.00	649.20	4.4
Greece	6,568.00	7,053.45	485.45	6.9
Austria	20,404.31	22,438.06	2,033.75	9.1
Slovakia	6,228.75	6,949.70	720.95	10.4
Spain	11,311.07	12,705.80	1,394.73	11.0
Hungary	4,255.63	4,808.09	552.46	11.5
Bulgaria	2,547.86	2,897.22	349.36	12.1
France	18,010.00	20,500.00	2,490.00	12.1
Poland	5,003.21	5,758.36	755.15	13.1
Denmark	21,704.55	25,375.74	3,671.19	14.5
Iceland	30,749.74	36,025.29	5,275.55	14.6
Malta	10,539.21	12,387.68	1,848.47	14.9
Portugal	6,914.00	8,280.77	1,366.77	16.5
Luxembourg	26,668.15	31,974.24	5,306.09	16.6
Serbia	1,938.41	2,362.57	424.16	18.0
Czech Republic	6,359.61	7,899.19	1,539.58	19.5
Romania	2,309.14	2,873.40	564.26	19.6
Netherlands	16,383.33	20,687.00	4,303.67	20.8
Ireland	16,940.00	21,560.00	4,620.00	21.4
Finland	16,260.00	20,858.00	4,598.00	22.0
Norway	26,497.05	34,287.40	7,790.35	22.7
United Kingdom	15,100.00	19,550.00	4,450.00	22.8
Cyprus	10,467.33	13,784.67	3,317.34	24.1
Belgium	15,600.00	20,556.00	4,956.00	24.1
Germany	14,908.50	19,650.00	4,741.50	24.1
Lithuania	3,971.46	5,250.77	1,279.31	24.4
Switzerland	28,968.25	39,075.58	10,107.33	25.9
Slovenia	8,326.67	11,366.67	3,040.00	26.7
Sweden	15,752.41	21,513.08	5,760.67	26.8
Croatia	4,180.23	5,752.00	1,571.77	27.3
Latvia	3,911.79	5,838.70	1,926.91	33.0
Estonia	5,523.72	8,407.77	2,884.05	34.3

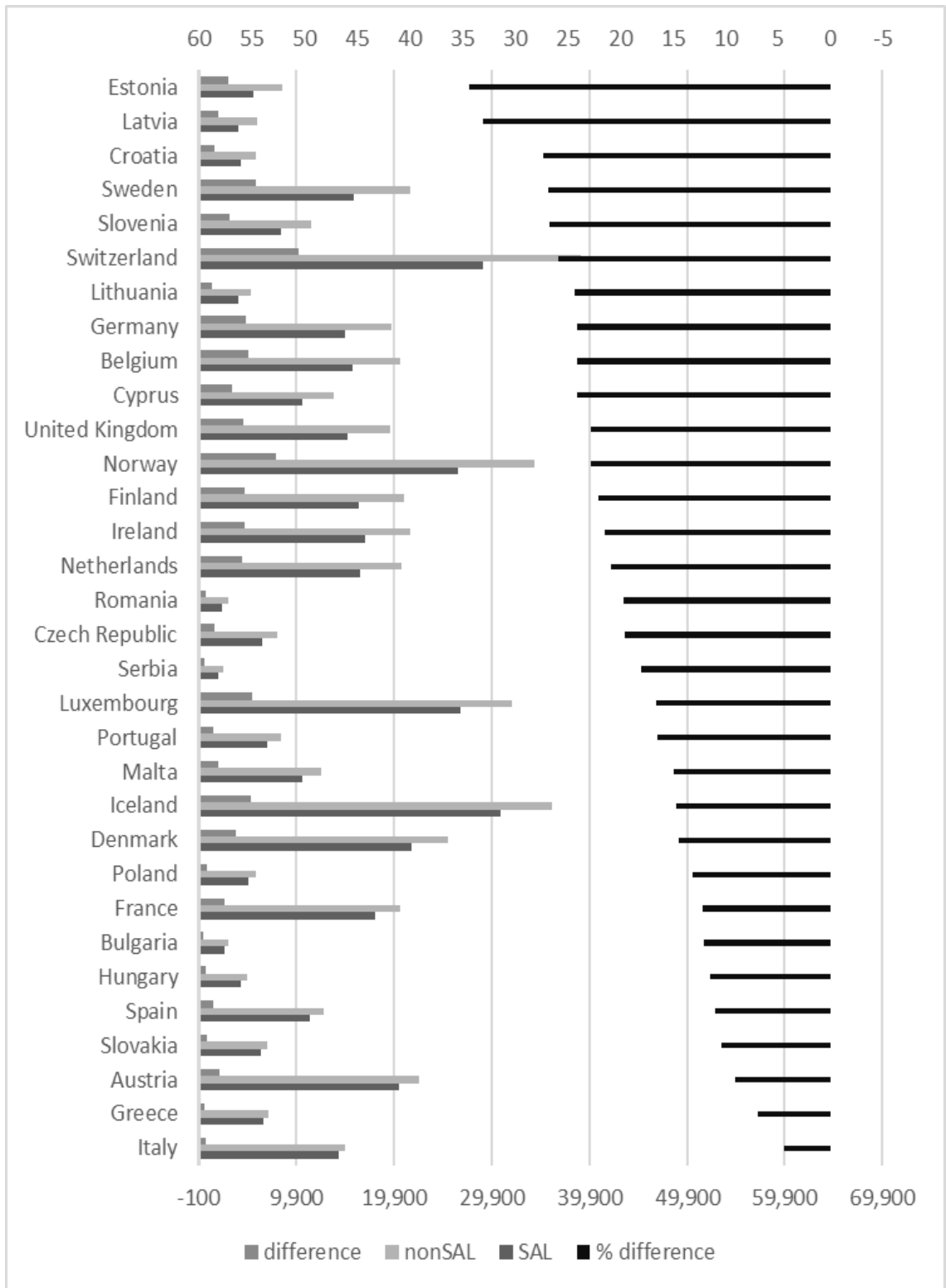


Figure J.7: Graphical representation of Table J.11 above (SAL and nonSAL households 40th percentile by their household equivalised disposable income, listed by percentage difference)

J.8.3 60th percentile

Table J.12: SAL and nonSAL households 60th percentile by their household equivalised disposable income, listed by percentage difference

	SAL 60 th percentile (euros)	nonSAL 60 th percentile (euros)	difference in 60 th percentiles (euros)	% difference
Italy	18,186.00	19,673.60	1,487.60	7.6
Greece	8,266.67	9,309.00	1,042.33	11.2
Austria	24,807.36	28,161.16	3,353.80	11.9
Slovakia	7,405.96	8,430.80	1,024.84	12.2
Spain	14,936.55	17,178.60	2,242.05	13.1
France	21,630.00	25,110.00	3,480.00	13.9
Malta	13,842.56	16,086.43	2,243.87	13.9
Hungary	5,142.45	6,035.90	893.45	14.8
Poland	6,329.11	7,454.39	1,125.28	15.1
Serbia	2,670.26	3,164.75	494.49	15.6
Portugal	9,132.97	10,843.33	1,710.36	15.8
Luxembourg	34,996.35	42,295.28	7,298.93	17.3
Iceland	35,101.65	43,696.14	8,594.49	19.7
Bulgaria	3,269.25	4,073.66	804.41	19.7
Switzerland	39,205.08	49,828.06	10,622.98	21.3
Denmark	25,010.49	32,000.51	6,990.02	21.8
Romania	3,049.77	3,932.21	882.44	22.4
Cyprus	13,813.49	17,844.44	4,030.95	22.6
Germany	19,616.67	25,378.00	5,761.33	22.7
Ireland	21,180.00	27,900.00	6,720.00	24.1
Czech Republic	7,392.96	9,800.30	2,407.34	24.6
Slovenia	10,660.00	14,133.33	3,473.33	24.6
Norway	31,711.82	42,054.05	10,342.23	24.6
Croatia	5,734.42	7,646.34	1,911.92	25.0
Belgium	19,350.00	26,214.50	6,864.50	26.2
Finland	19,273.33	26,248.57	6,975.24	26.6
Sweden	20,073.38	27,678.66	7,605.28	27.5
Netherlands	18,750.00	26,041.00	7,291.00	28.0
United Kingdom	18,750.00	26,250.00	7,500.00	28.6
Lithuania	5,168.16	7,770.31	2,602.15	33.5
Estonia	7,211.18	11,914.72	4,703.54	39.5
Latvia	5,117.64	8,500.69	3,383.05	39.8

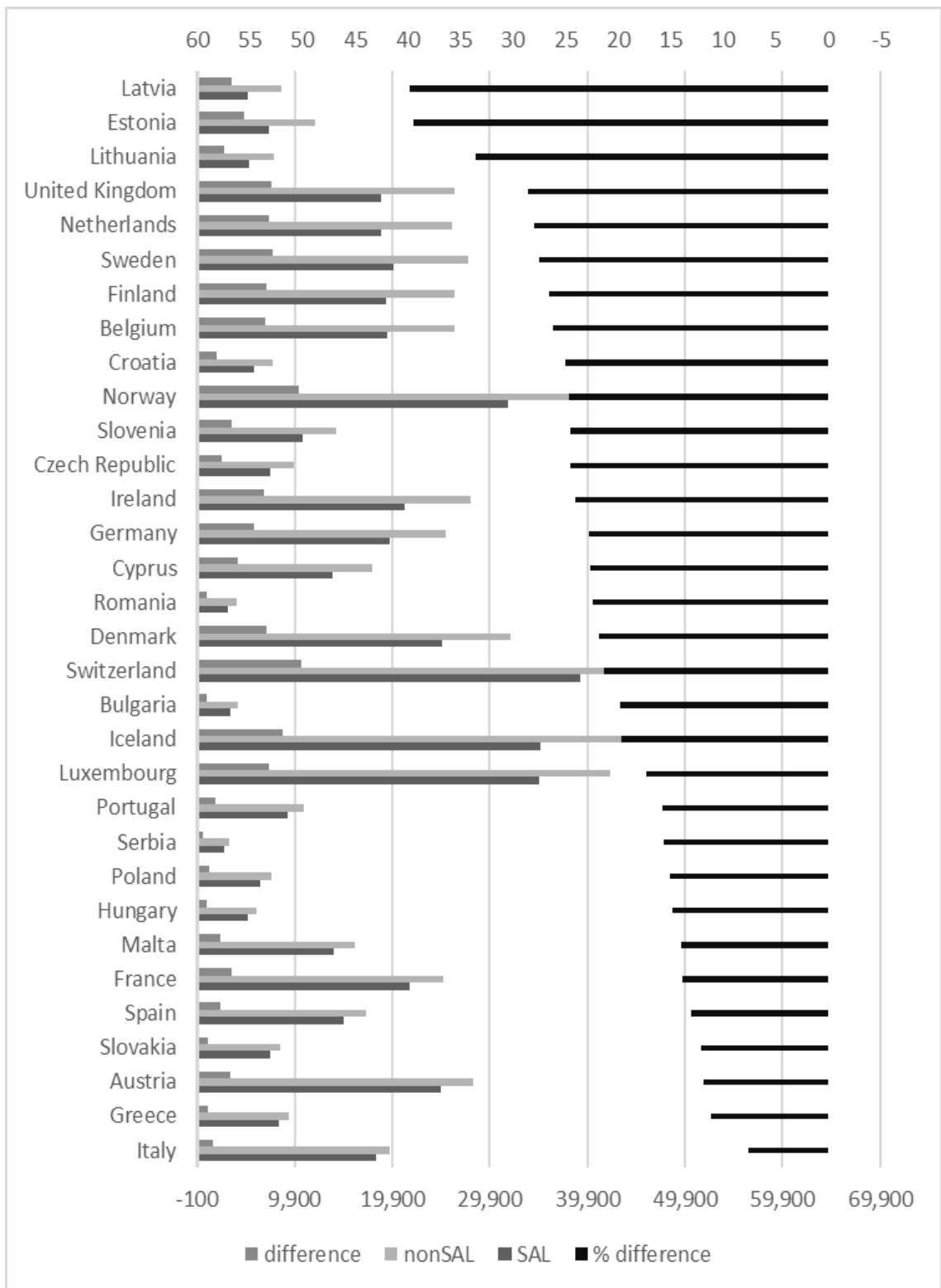


Figure J.8: Graphical representation of Table J.12 above (SAL and nonSAL households 60th percentile by their household equivalised disposable income, listed by percentage difference)

J.8.4 80th percentile

Table J.13: SAL and nonSAL households 80th percentile by their household equivalised disposable income, listed by percentage difference

	SAL 80 th percentile (euros)	nonSAL 80 th percentile (euros)	difference in 80 th percentiles (euros)	% difference
Italy	23,516.00	26,328.00	2,812.00	10.7
Slovakia	9,119.00	10,350.13	1,231.13	11.9
Austria	31,657.42	36,451.85	4,794.43	13.2
Greece	10,857.14	12,573.33	1,716.19	13.6
Spain	20,453.53	23,936.50	3,482.97	14.6
Iceland	45,373.46	53,993.06	8,619.60	16.0
Serbia	3,673.37	4,391.09	717.72	16.3
Portugal	12,577.86	15,160.00	2,582.14	17.0
Luxembourg	46,845.30	56,603.33	9,758.03	17.2
France	27,000.00	32,890.00	5,890.00	17.9
Poland	8,050.43	9,900.16	1,849.73	18.7
Hungary	6,448.36	7,943.34	1,494.98	18.8
Germany	26,576.50	33,435.33	6,858.83	20.5
Denmark	32,650.77	41,191.99	8,541.22	20.7
Malta	17,087.08	21,570.33	4,483.25	20.8
Finland	26,802.67	34,036.00	7,233.33	21.3
Bulgaria	4,580.86	5,938.45	1,357.59	22.9
Slovenia	13,746.67	17,822.22	4,075.55	22.9
Cyprus	18,315.22	23,931.00	5,615.78	23.5
Belgium	24,959.48	32,856.70	7,897.22	24.0
Switzerland	50,207.24	66,755.53	16,548.29	24.8
Romania	4,157.64	5,549.49	1,391.85	25.1
Norway	38,762.09	52,987.99	14,225.90	26.8
Czech Republic	9,310.39	12,788.08	3,477.69	27.2
Croatia	7,574.73	10,404.43	2,829.70	27.2
Sweden	26,186.55	36,023.30	9,836.75	27.3
Netherlands	24,142.00	33,775.00	9,633.00	28.5
Ireland	26,750.00	38,460.00	11,710.00	30.4
United Kingdom	24,900.00	36,250.00	11,350.00	31.3
Estonia	10,876.91	16,589.34	5,712.43	34.4
Lithuania	7,311.09	11,352.49	4,041.40	35.6
Latvia	7,483.17	12,182.75	4,699.58	38.6

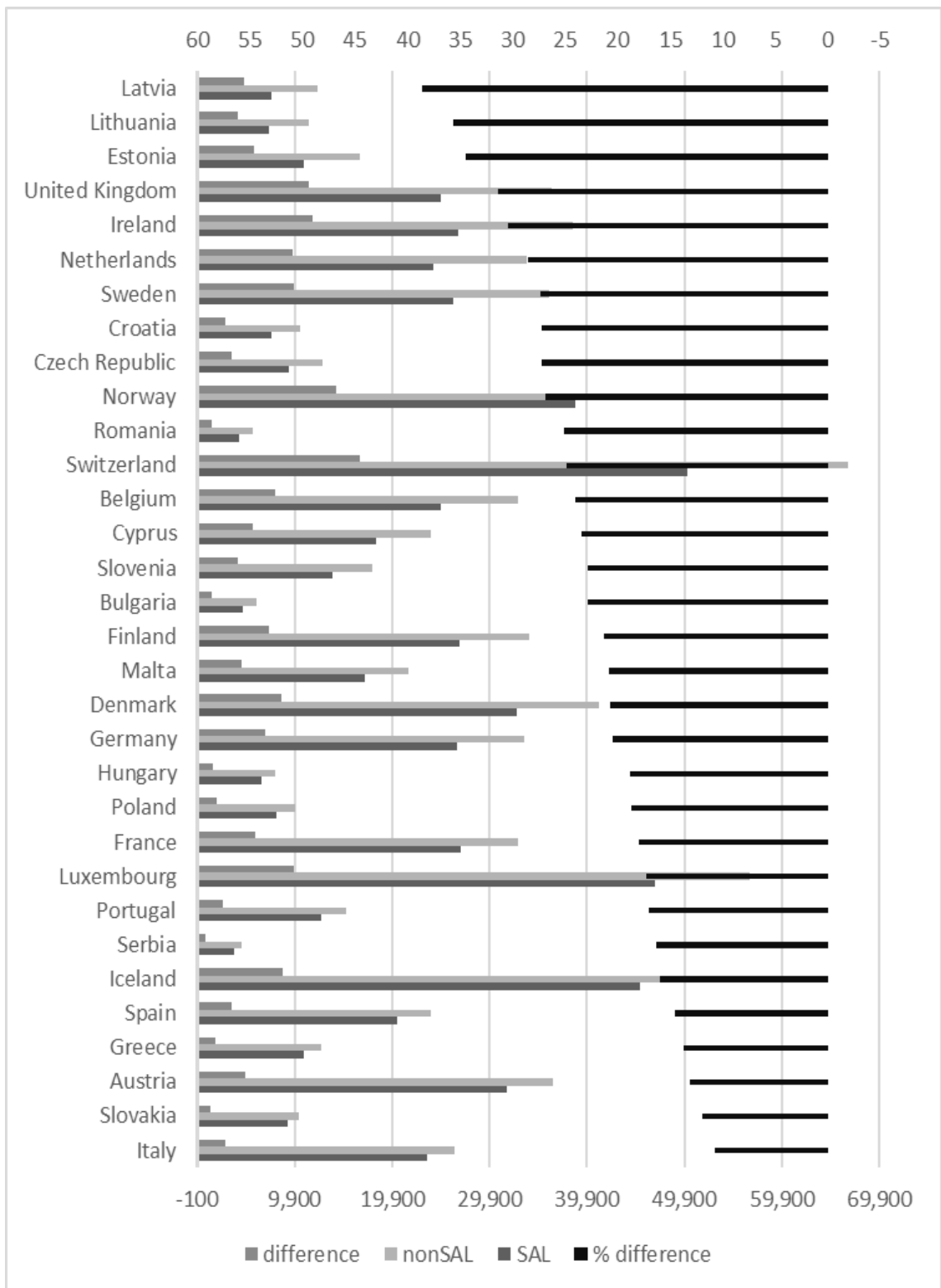


Figure J.9: Graphical representation of Table J.13 above (SAL and nonSAL households 80th percentile by their household equivalised disposable income, listed by percentage difference)

J.9 HEDI as a percentage of MHEDI for SAL and nonSAL households

Table J.14: Differences in deciles for HEDI as a percentage of MHEDI for SAL and nonSAL households (2018)

	difference in deciles of HEDI as a percentage of MHEDI (%)*								
	1 st	2 nd	3 rd	4 th	5 th	6 th	7 th	8 th	9 th
Austria	-3.56	-4.93	-6.55	-8.85	-11.70	-13.32	-16.06	-22.74	-32.28
Belgium	-5.62	-8.50	-14.29	-21.86	-27.98	-31.13	-34.18	-35.94	-38.69
Bulgaria	0.28	-2.30	-3.65	-5.51	-11.41	-18.07	-24.40	-31.40	-44.57
Croatia	-9.02	-13.63	-19.29	-22.43	-25.65	-29.15	-33.21	-39.38	-47.14
Cyprus	-7.42	-10.17	-15.07	-21.86	-27.15	-31.30	-32.90	-39.46	-51.55
Czech Republic	-6.27	-9.64	-11.30	-14.59	-17.48	-23.85	-30.63	-38.59	-50.83
Denmark	-4.93	-7.72	-11.72	-18.61	-23.58	-28.06	-29.45	-30.22	-34.72
Estonia	-5.35	-8.13	-15.49	-23.50	-33.94	-42.91	-47.00	-51.52	-56.82
Finland	-7.73	-14.64	-18.26	-22.94	-24.55	-24.75	-24.79	-31.82	-43.08
France	-2.80	-7.00	-8.49	-10.14	-11.69	-14.37	-18.37	-23.16	-28.84
Germany	-7.43	-15.26	-17.75	-17.74	-19.36	-21.56	-25.36	-27.40	-35.87
Greece	3.05	-0.49	-2.66	-5.02	-7.94	-11.24	-16.36	-21.53	-29.93
Hungary	-2.09	-4.12	-7.57	-9.03	-13.98	-15.21	-19.07	-23.73	-32.31
Iceland	-3.75	-7.97	-10.00	-13.04	-17.22	-18.99	-16.51	-20.21	-22.75
Ireland	-5.19	-5.92	-11.48	-15.83	-21.12	-28.21	-34.74	-43.65	-56.59
Italy	3.11	-1.11	-2.99	-5.41	-7.52	-9.38	-11.11	-15.70	-23.25
Latvia	-1.50	-6.21	-13.65	-21.87	-33.60	-43.86	-49.87	-61.77	-76.32
Lithuania	-0.41	-5.57	-10.51	-16.68	-27.98	-37.42	-44.49	-58.81	-90.27
Luxembourg	-11.15	-9.33	-9.43	-11.47	-11.85	-14.32	-17.39	-21.56	-29.74
Malta	0.38	-1.72	-7.37	-9.70	-13.28	-15.71	-18.13	-27.01	-37.72
Netherlands	-4.64	-10.39	-14.11	-19.53	-25.79	-30.23	-33.44	-35.25	-43.23
Norway	-2.19	-13.17	-18.94	-19.74	-24.67	-28.14	-31.21	-35.98	-45.77
Poland	-2.56	-4.76	-8.16	-9.56	-11.03	-14.33	-17.49	-24.46	-37.11
Portugal	-2.08	-6.69	-10.43	-14.13	-16.92	-19.08	-24.97	-31.25	-38.93
Romania	0.47	-5.81	-11.01	-16.44	-18.37	-25.40	-31.09	-37.21	-48.59
Serbia	-7.09	-10.12	-10.88	-9.82	-12.59	-14.06	-16.88	-23.65	-26.64
Slovakia	-2.41	-5.48	-6.86	-8.13	-9.12	-12.35	-15.51	-16.46	-21.17
Slovenia	-12.01	-16.15	-18.51	-20.13	-23.57	-25.41	-27.63	-31.31	-33.49
Spain	1.83	-2.14	-5.18	-9.99	-13.54	-17.24	-18.74	-22.07	-29.67
Sweden	-11.99	-16.06	-24.24	-27.73	-30.80	-36.21	-38.45	-37.42	-41.08
Switzerland	-9.67	-13.90	-19.50	-21.37	-20.67	-24.17	-28.73	-34.04	-42.95
United Kingdom	-6.60	-10.42	-13.28	-18.25	-23.82	-31.51	-37.97	-48.35	-65.33

* SAL household decile – nonSAL household decile

J.10 Households' level of satisfaction with financial situation

J.10.1 SAL and nonSAL households' level of satisfaction with their financial situation (full sample)

Table J.15: Percentage of SAL and nonSAL households listed by level of satisfaction with their financial situation (full sample)

		household average		household minimum			
		SAL (%)	nonSAL (%)	SAL (%)	nonSAL (%)		
level of satisfaction	not at all	5.4	1.6	7.8	2.3	not at all	level of satisfaction
	1	3.3	1.1	4	1.5	1	
	2	5.9	2.3	7.2	3	2	
	3	7.2	3.8	8.5	4.6	3	
	4	9.3	5.3	9.5	6.1	4	
	5	16.5	11.8	18.6	14	5	
	6	13.9	13.6	11.8	13.8	6	
	7	14.3	19.1	12.7	19.5	7	
	8	13.5	21.8	11.7	19.9	8	
	9	5.7	11.2	3.9	8.2	9	
	completely	5.1	8.3	4.3	7.1	completely	

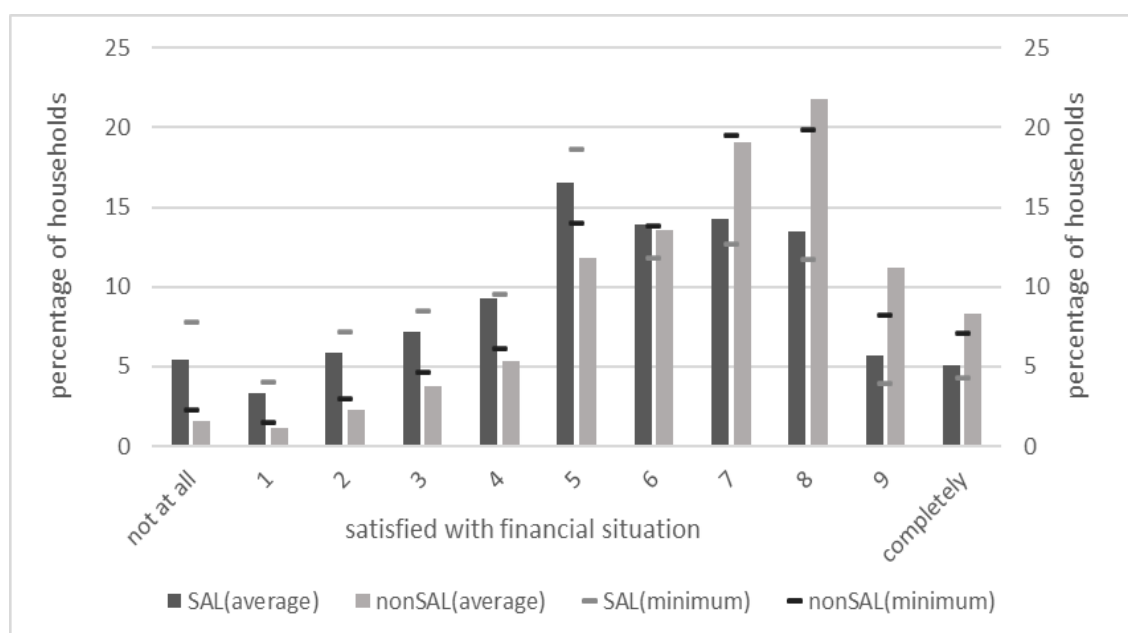


Figure J.10: Graphical representation of percentage of SAL and nonSAL households listed by level of satisfaction with their financial situation, Table J.15 above (full sample)

J.10.2 SAL and nonSAL households' level of satisfaction with their financial situation (AROP sample)

Table J.16: Percentage of SAL and nonSAL households listed by level of satisfaction with their financial situation (AROP sample)

		household average		household minimum			
		SAL (%)	nonSAL (%)	SAL (%)	nonSAL (%)		
level of satisfaction	not at all	13.0	5.6	16.9	7.1	not at all	level of satisfaction
	1	7.3	3.4	7.5	3.8	1	
	2	10.9	6.3	12.0	7.2	2	
	3	11.3	8.6	12.3	9.6	3	
	4	11.5	10.1	10.3	10.0	4	
	5	16.6	17.5	16.5	18.3	5	
	6	10.0	14.1	7.9	13.2	6	
	7	8.6	14.2	7.1	13.0	7	
	8	5.6	10.9	5.2	9.8	8	
	9	2.5	4.6	1.7	3.6	9	
	completely	2.8	4.9	2.6	4.5	completely	

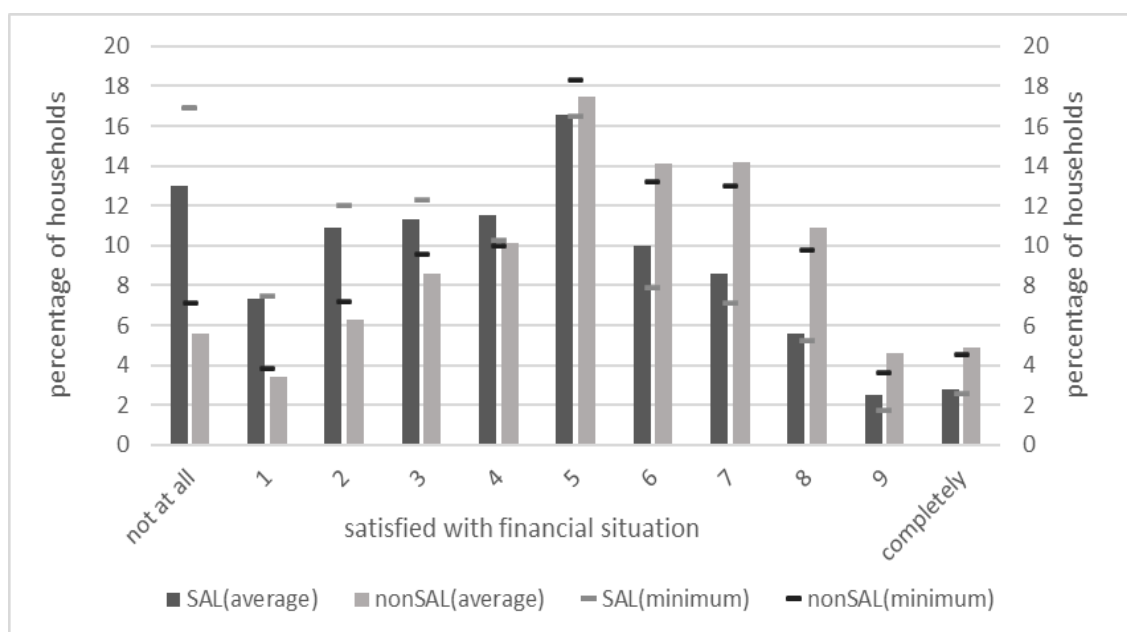


Figure J.11: Graphical representation of percentage of SAL and nonSAL households listed by level of satisfaction with their financial situation, Table J.16 above (AROP sample)

J.10.3 SAL and nonSAL households' level of satisfaction with their financial situation (AROP < HEDI <= MHEDI sample)

Table J.17: Percentage of SAL and nonSAL households listed by level of satisfaction with their financial situation (AROP < HEDI <= MHEDI sample)

		household average		household minimum			
		SAL (%)	nonSAL (%)	SAL (%)	nonSAL (%)		
level of satisfaction	not at all	3.6	1.4	6.0	2.3	not at all	level of satisfaction
	1	2.8	1.1	3.8	1.6	1	
	2	5.9	2.8	7.2	3.5	2	
	3	7.3	4.7	8.4	5.6	3	
	4	10.2	6.6	10.7	7.7	4	
	5	19.4	15.8	21.3	18.1	5	
	6	15.4	16.4	12.9	15.8	6	
	7	14.5	19.6	12.6	18.5	7	
	8	12.2	18.3	10.3	16.3	8	
	9	4.2	7.4	2.6	5.3	9	
	completely	4.5	5.8	4.1	5.3	completely	

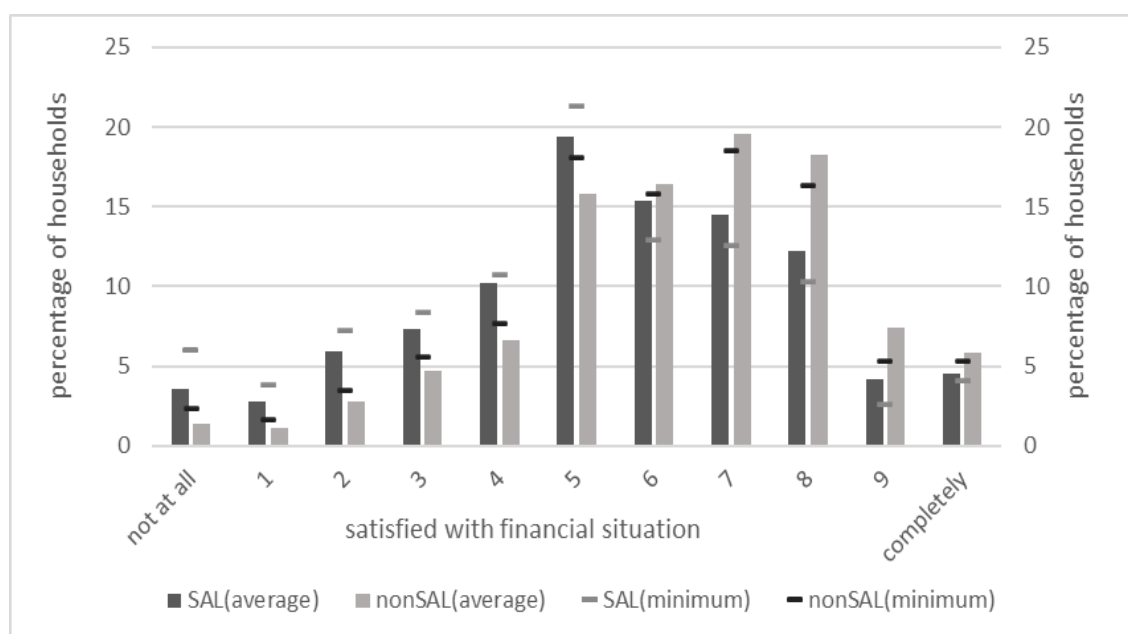


Figure J.12: Graphical representation of percentage of SAL and nonSAL households listed by level of satisfaction with their financial situation, Table J.17 above (AROP < HEDI <= MHEDI sample)

J.10.4 SAL and nonSAL households' level of satisfaction with their financial situation (HEDI > MHEDI sample)

Table J.18: Percentage of SAL and nonSAL households listed by level of satisfaction with their financial situation (HEDI > MHEDI sample)

		household average		household minimum			
		SAL (%)	nonSAL (%)	SAL (%)	nonSAL (%)		
level of satisfaction	not at all	1.6	0.4	2.9	0.7	not at all	level of satisfaction
	1	1.0	0.3	1.6	0.6	1	
	2	2.0	0.7	3.4	1.2	2	
	3	4.0	1.5	5.9	2.3	3	
	4	6.6	3.0	7.6	3.8	4	
	5	13.0	7.5	17.0	10.2	5	
	6	15.2	11.9	13.6	12.7	6	
	7	18.4	20.5	17.0	22.3	7	
	8	20.9	27.6	18.2	25.4	8	
	9	9.8	15.7	6.9	11.5	9	
	completely	7.5	10.9	5.8	9.1	completely	

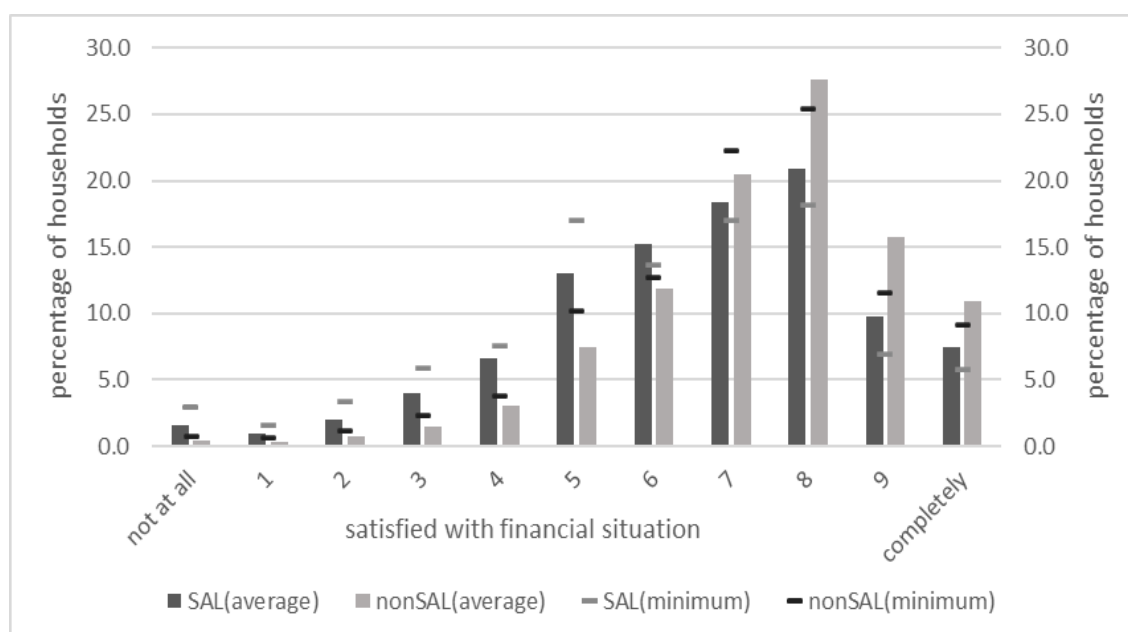


Figure J.13: Graphical representation of percentage of SAL and nonSAL households listed by level of satisfaction with their financial situation, Table J.18 above (HEDI > MHEDI sample)

J.10.5 Country analysis

Table J.19: Mean difference between SAL and nonSAL households' average level of satisfaction with financial situation, and Cohen's d effect size

	mean difference	99% confidence interval		Cohen's d	99% confidence interval	
		lower	upper		lower	upper
Austria	1.11	1.10	1.12	0.548	0.544	0.552
Belgium	1.14	1.13	1.14	0.591	0.588	0.595
Bulgaria	1.31	1.30	1.33	0.550	0.544	0.557
Croatia	1.40	1.38	1.41	0.554	0.548	0.560
Cyprus	1.03	1.00	1.06	0.506	0.492	0.519
Czech Republic	1.24	1.23	1.25	0.564	0.560	0.569
Denmark	2.05	2.03	2.07	0.834	0.828	0.840
Estonia	1.22	1.20	1.24	0.582	0.573	0.591
Finland	1.14	1.13	1.16	0.611	0.605	0.617
France	0.82	0.82	0.82	0.437	0.436	0.439
Germany	1.56	1.56	1.56	0.647	0.645	0.648
Greece	0.99	0.98	1.00	0.440	0.437	0.444
Hungary	1.13	1.12	1.13	0.545	0.541	0.549
Iceland	1.63	1.58	1.69	0.745	0.726	0.765
Ireland	0.94	0.92	0.96	0.431	0.424	0.438
Italy	1.12	1.12	1.12	0.574	0.572	0.576
Latvia	1.27	1.26	1.29	0.599	0.591	0.608
Lithuania	1.62	1.60	1.64	0.649	0.641	0.658
Luxembourg	1.05	1.01	1.09	0.456	0.441	0.472
Malta	1.10	1.04	1.17	0.567	0.538	0.595
Netherlands	1.78	1.77	1.79	0.959	0.955	0.963
Norway	1.87	1.85	1.89	0.859	0.852	0.866
Poland	1.21	1.21	1.22	0.508	0.505	0.510
Portugal	1.26	1.25	1.27	0.521	0.517	0.525
Romania	1.30	1.30	1.31	0.680	0.676	0.683
Serbia	0.82	0.81	0.84	0.384	0.378	0.391
Slovakia	1.27	1.25	1.28	0.564	0.559	0.569
Slovenia	2.12	2.09	2.14	0.920	0.910	0.930
Spain	1.19	1.19	1.19	0.584	0.582	0.586
Sweden	1.47	1.46	1.49	0.646	0.640	0.652
Switzerland	1.27	1.26	1.28	0.610	0.605	0.614
United Kingdom	1.13	1.13	1.14	0.509	0.508	0.511

J.10.6 Households' level of satisfaction with financial situation, country economic performance, and households level of deprivation

Table J.20: Correlation between the difference in country averages for SAL and nonSAL households' level of satisfaction with their financial situation and the country gross domestic product per capital in purchasing power standards, 2016-2018 average

		country difference in SAL and nonSAL households' level of satisfaction with financial situation	GDPPC-PPS (2016-2018 average)		
average reduction in SAL and nonSAL TDHI difference as a result of social transfers	Kendall's tau-b	1	0.043**		
	Sig. (2-tailed)		0.743		
	N	32	32		
	Bootstrap*	Bias	0	0.000	
		Std. Error	0	0.159	
		BCa 99% Confidence Interval	Lower	.	-0.398***
			Upper	.	0.445***
*** Confidence interval crosses zero.					
** Correlation not significant at the 0.01 level (2-tailed).					
* Bootstrap results are based on 10,000 bootstrap samples.					

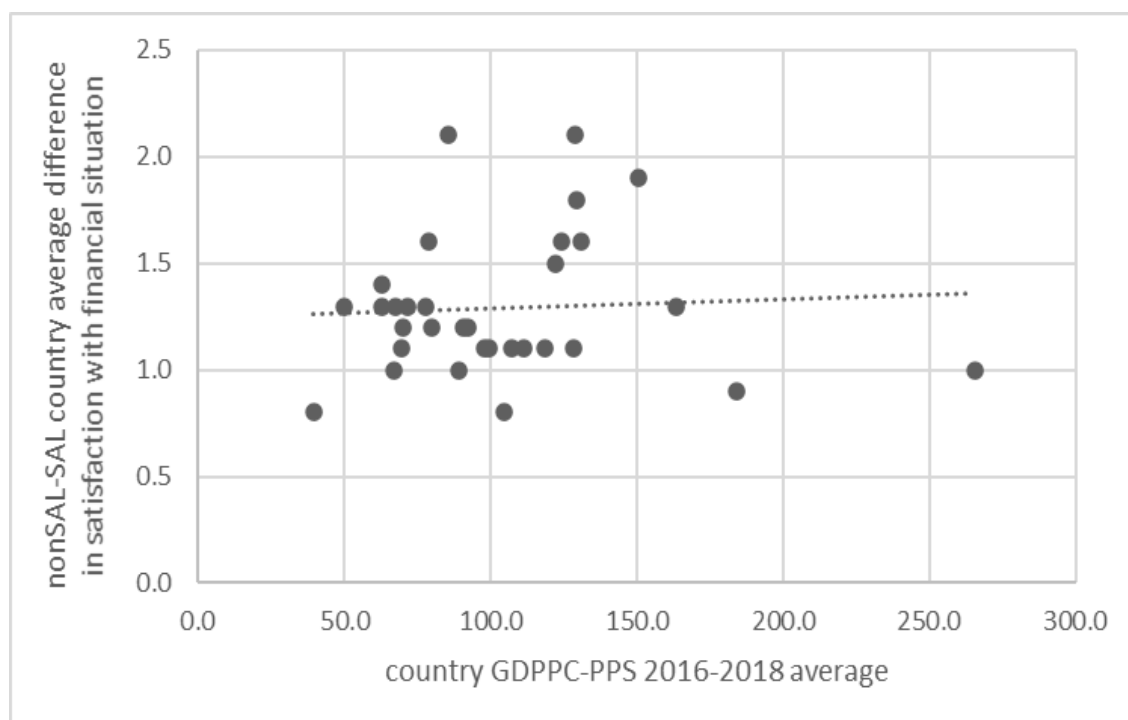


Figure J.14: Scatter plot displaying non-correlation in Table J.20 above, R2 linear = 0.003

Table J.21: Correlation between the difference in country averages for SAL and nonSAL households level of satisfaction with their financial situation and the country 2018 median of the household equivalised disposable income

		country difference in SAL and nonSAL households' level of satisfaction with financial situation	MHEDI 2018		
average reduction in SAL and nonSAL TDHI difference as a result of social transfers	Kendall's tau-b	1	0.017**		
	Sig. (2-tailed)		0.896		
	N	32	32		
	Bootstrap*	Bias	0	0.000	
		Std. Error	0	0.147	
		BCa 99% Confidence Interval	Lower	.	-0.429***
			Upper	.	0.403***
*** Confidence interval crosses zero.					
** Correlation not significant at the 0.01 level (2-tailed).					
* Bootstrap results are based on 10,000 bootstrap samples.					

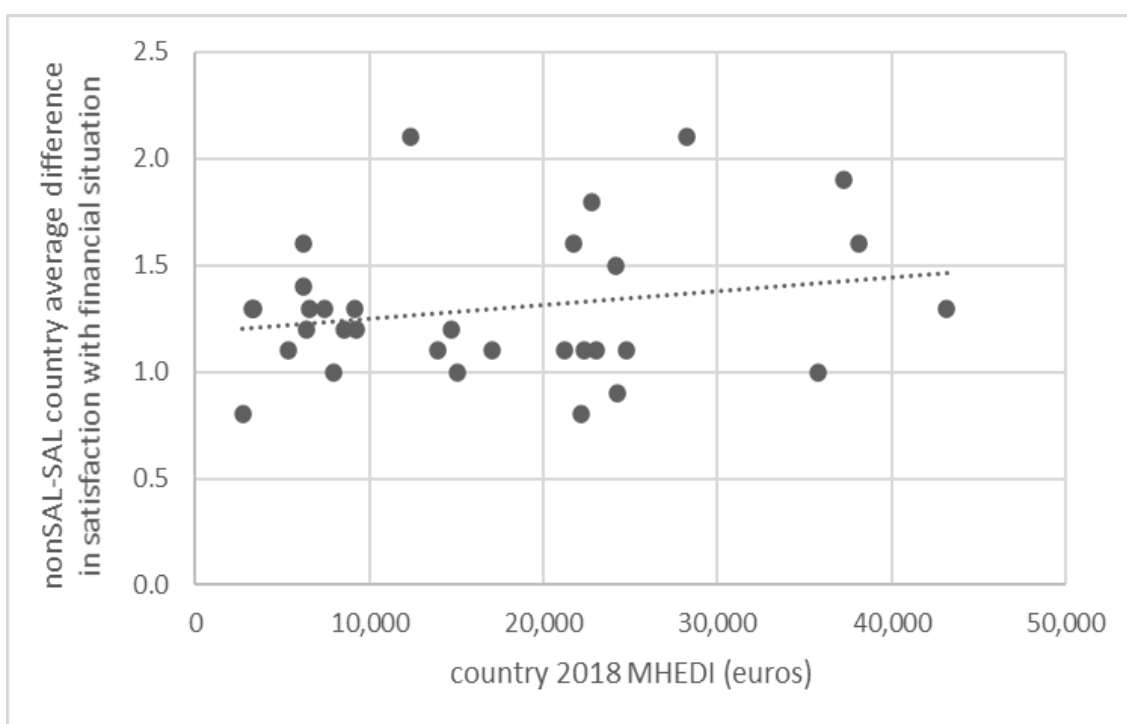


Figure J.15: Scatter plot displaying non-correlation in Table J.21 above, R2 linear = 0.049

Table J.22: Correlation between the difference in country averages for SAL and nonSAL households level of satisfaction with their financial situation and the country 2018 MDI score average

		country difference in SAL and nonSAL households' level of satisfaction with financial situation	country MDI average (2018)		
average reduction in SAL and nonSAL TDHI difference as a result of social transfers	Kendall's tau-b	1	-0.102**		
	Sig. (2-tailed)		0.431		
	N	32	32		
	Bootstrap*	Bias	0	0.000	
		Std. Error	0	0.139	
		BCa 99% Confidence Interval	Lower	.	-0.420***
			Upper	.	0.257***
*** Confidence interval crosses zero.					
** Correlation not significant at the 0.01 level (2-tailed).					
* Bootstrap results are based on 10,000 bootstrap samples.					

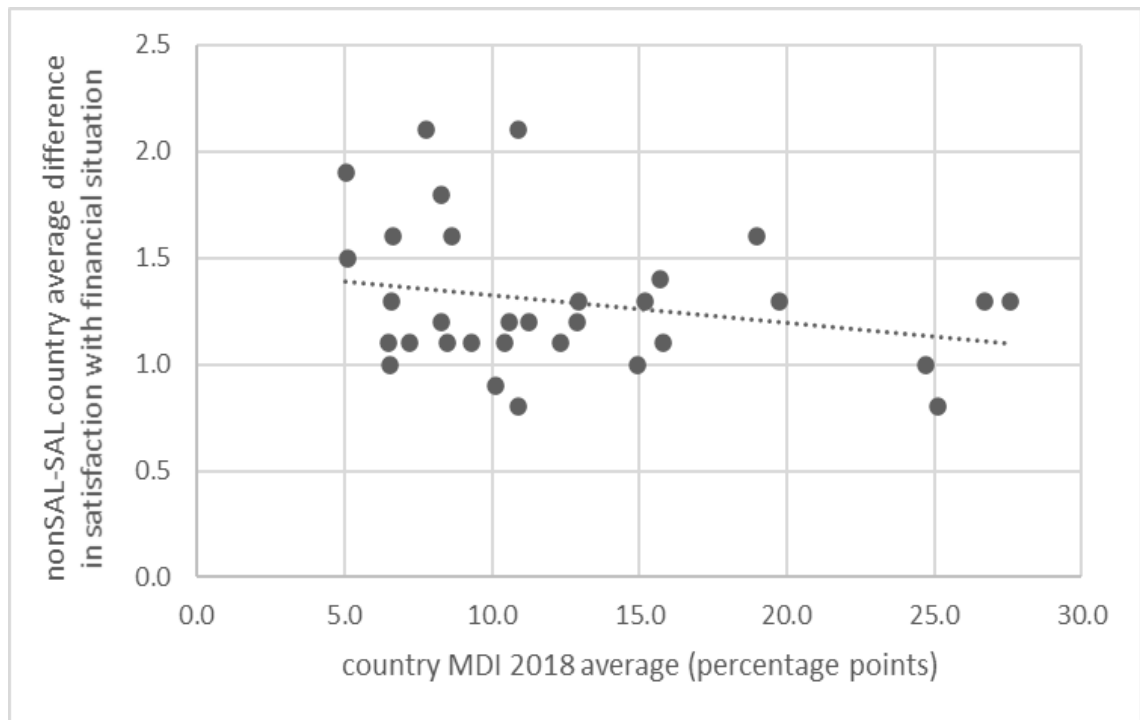


Figure J.16: Scatter plot displaying non-correlation in Table J.22 above, R² linear = 0.064

Table J.23: Correlation between the difference in country averages for SAL and nonSAL households level of satisfaction with their financial situation and the country 2018 SAL households MDI score average

		country difference in SAL and nonSAL households' level of satisfaction with financial situation	SAL households MDI country average (2018)		
average reduction in SAL and nonSAL TDHI difference as a result of social transfers	Kendall's tau-b	1	0.043**		
	Sig. (2-tailed)		0.743		
	N	32	32		
	Bootstrap*	Bias	0	-0.001	
		Std. Error	0	0.140	
		BCa 99% Confidence Interval	Lower	.	-0.281***
			Upper	.	0.375***
*** Confidence interval crosses zero.					
** Correlation not significant at the 0.01 level (2-tailed).					
* Bootstrap results are based on 10,000 bootstrap samples.					

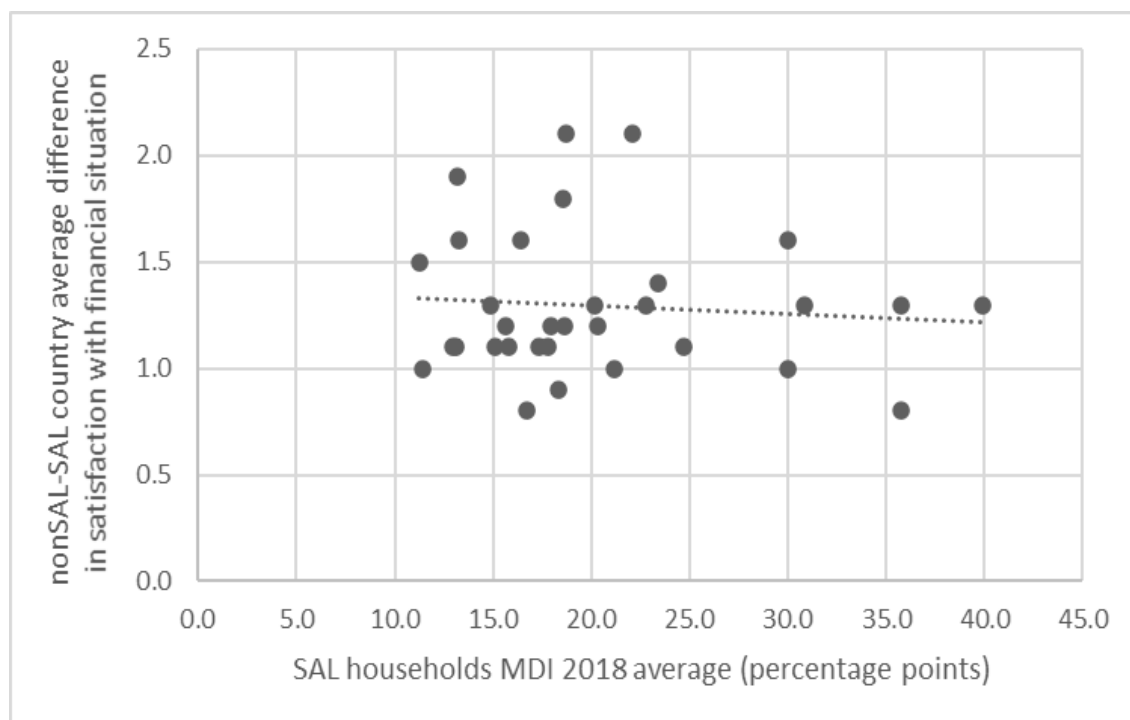


Figure J.17: Scatter plot displaying non-correlation in Table J.23 above, R2 linear = 0.007

Table J.24: Correlation between the difference in country averages for SAL and nonSAL households level of satisfaction with their financial situation and the country 2018 nonSAL-SAL households difference in MDI score average

		country difference in SAL and nonSAL households' level of satisfaction with financial situation	difference in SAL and nonSAL households MDI country average (2018)		
average reduction in SAL and nonSAL TDHI difference as a result of social transfers	Kendall's tau-b	1	0.357**		
	Sig. (2-tailed)		0.006		
	N	32	32		
	Bootstrap*	Bias	0	0.000	
		Std. Error	0	0.133	
		BCa 99% Confidence Interval	Lower	.	-0.013***
			Upper	.	0.686***
*** Confidence interval crosses zero.					
** Correlation significant at the 0.01 level (2-tailed).					
* Bootstrap results are based on 10,000 bootstrap samples.					

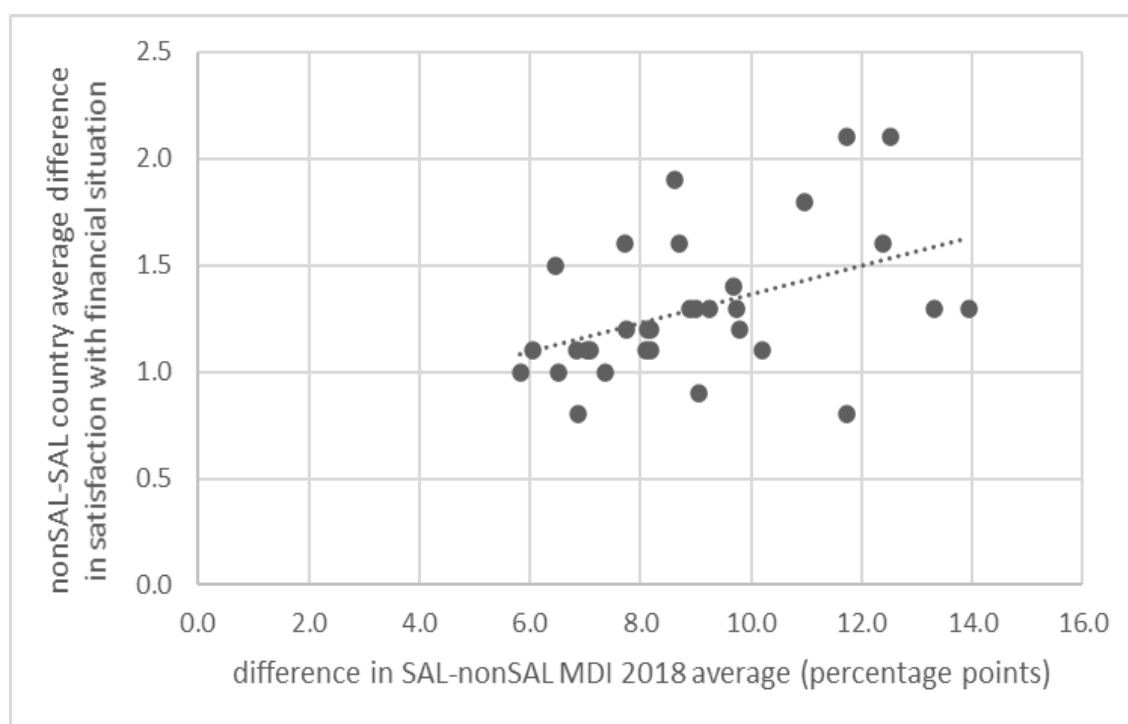


Figure J.18: Scatter plot displaying correlation in Table J.24 above, R2 linear = 0.192

J.11 Deprivation in households because of bad health circumstances compared with deprivation due to severe activity limitation

Table J.25: Difference in deprivation between households with bad health circumstances [SAL(a) and nonSAL(a)] and without bad health circumstances [SAL(b) and nonSAL(b)] compared to difference in deprivation between SAL and nonSAL households

	MDI difference (percentage points)			
	scenario 1 all households with & without bad health circumstances	scenario 2 sal households & nonSAL households	difference between scenarios 1 & 2	practical difference
Ireland	-13.8	-9.1	-4.8	-5
Serbia	-16.4	-11.7	-4.7	-5
Bulgaria	-13.8	-9.7	-4.1	-4
Belgium	-12.0	-8.1	-3.9	-4
Switzerland	-12.8	-9.2	-3.6	-4
Iceland	-10.7	-7.7	-3.0	-3
Spain	-11.0	-8.1	-2.9	-3
France	-9.6	-6.9	-2.7	-3
Austria	-9.7	-7.0	-2.7	-3
Malta	-9.3	-6.8	-2.4	-2
Italy	-8.5	-6.1	-2.4	-2
Portugal	-11.4	-9.0	-2.4	-2
Sweden	-8.8	-6.5	-2.3	-2
Lithuania	-14.5	-12.4	-2.2	-2
Poland	-9.7	-7.7	-2.0	-2
United Kingdom	-10.1	-8.2	-1.9	-2
Netherlands	-12.9	-11.0	-1.9	-2
Estonia	-11.5	-9.8	-1.7	-2
Luxembourg	-7.5	-5.8	-1.7	-2
Slovenia	-14.2	-12.5	-1.6	-2
Hungary	-11.7	-10.2	-1.5	-2
Finland	-8.5	-7.1	-1.4	-1
Croatia	-11.1	-9.7	-1.4	-1
Germany	-10.0	-8.7	-1.3	-1
Latvia	-14.5	-13.3	-1.2	-1
Czech Republic	-8.8	-8.2	-0.6	-1
Cyprus	-7.6	-7.4	-0.3	0
Denmark	-11.8	-11.7	-0.1	0
Greece	-6.4	-6.5	0.1	0
Slovakia	-8.7	-8.9	0.2	0
Norway	-8.3	-8.6	0.3	0
Romania	-12.7	-13.9	1.3	1

J.12 Perceived social exclusion

J.12.1 SAL and nonSAL households' level of perceived social exclusion (full sample)

Table J.26: Percentage of SAL and nonSAL households listed by level of perceived social exclusion (full sample)

		household average		household maximum			
		SAL (%)	nonSAL (%)	SAL (%)	nonSAL (%)		
perceived social exclusion	not at all	23.3	36.1	22.9	35.6	not at all	perceived social exclusion
	1	7.4	11.4	5.3	9.2	1	
	2	9.8	10.1	8.2	10.2	2	
	3	9.6	7.1	7.7	6.9	3	
	4	8.6	5.2	6.5	4.5	4	
	5	13.3	8.3	15.2	9.4	5	
	6	6.7	4.4	6.6	4.6	6	
	7	7.4	5.8	8.3	6.3	7	
	8	7.8	6.6	9.9	7.4	8	
	9	3.1	2.7	4.1	3.1	9	
	completely	3.1	2.1	5.1	2.9	completely	

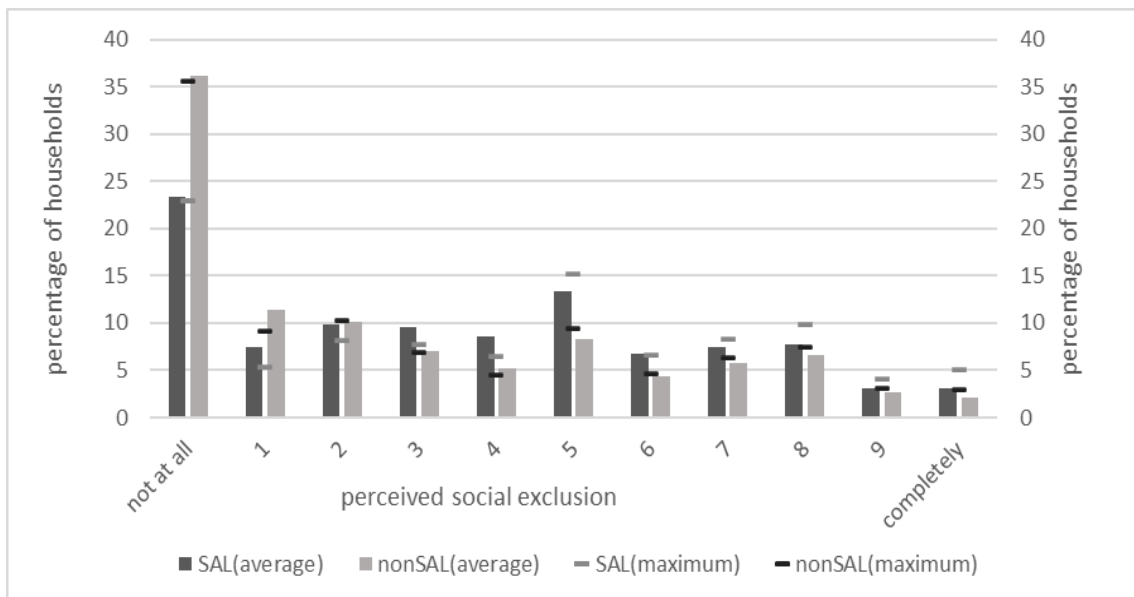


Figure J.19: Graphical representation of percentage of SAL and nonSAL households listed by level of perceived social exclusion, Table J.26 above (full sample)

J.12.2 SAL and nonSAL households' level of perceived social exclusion (AROP sample)

Table J.27: Percentage of SAL and nonSAL households listed by level of perceived social exclusion (AROP sample)

		household average		household maximum			
		SAL (%)	nonSAL (%)	SAL (%)	nonSAL (%)		
perceived social exclusion	not at all	20.4	31.1	20.3	30.8	not at all	perceived social exclusion
	1	5.7	9.0	4.5	7.8	1	
	2	9.8	9.9	8.0	9.4	2	
	3	9.7	8.7	8.0	8.1	3	
	4	9.3	7.5	7.5	6.5	4	
	5	15.3	11.6	16.3	12.6	5	
	6	6.4	5.8	6.6	5.9	6	
	7	7.3	6.1	8.2	6.6	7	
	8	8.2	5.7	10.0	6.6	8	
	9	3.9	2.2	4.6	2.6	9	
	completely	4.0	2.4	5.9	3.1	completely	

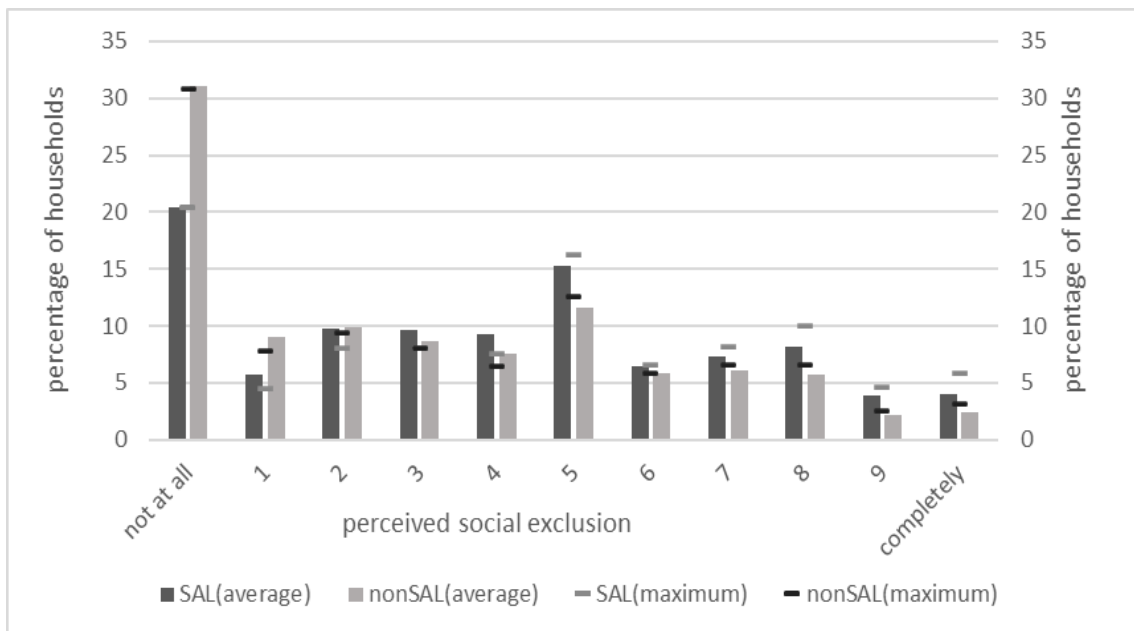


Figure J.20: Graphical representation of percentage of SAL and nonSAL households listed by level of perceived social exclusion, Table J.27 above(AROP sample)

J.12.3 SAL and nonSAL households' level of perceived social exclusion (AROP < HEDI <= MHEDI sample)

Table J.28: Percentage of SAL and nonSAL households listed by level of perceived social exclusion (AROP < HEDI <= MHEDI sample)

		household average		household maximum			
		SAL (%)	nonSAL (%)	SAL (%)	nonSAL (%)		
perceived social exclusion	not at all	21.9	33.6	21.6	33.1	not at all	perceived social exclusion
	1	7.2	10.0	5.4	8.1	1	
	2	9.6	10.1	8.2	10.0	2	
	3	9.5	7.5	7.6	7.0	3	
	4	8.9	5.8	6.9	5.0	4	
	5	13.8	9.7	15.8	10.8	5	
	6	7.4	5.3	7.4	5.3	6	
	7	8.5	6.8	9.0	7.2	7	
	8	7.7	6.8	9.6	8.0	8	
	9	2.9	2.4	3.8	2.8	9	
	completely	2.5	2.1	4.6	2.7	completely	

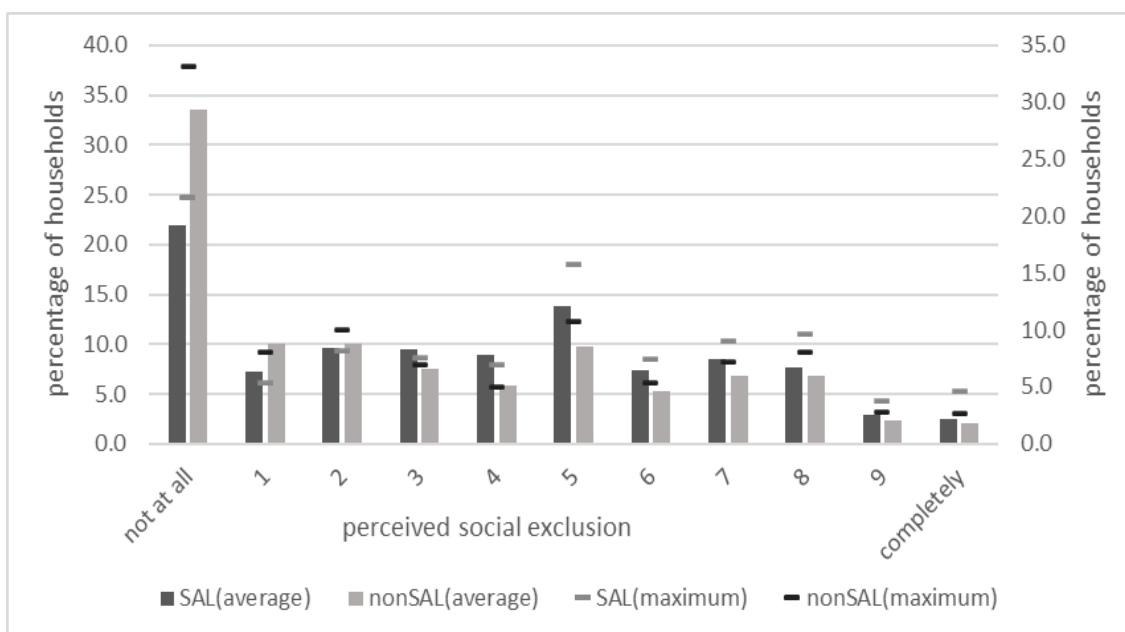


Figure J.21: Graphical representation of percentage of SAL and nonSAL households listed by level of perceived social exclusion, Table J.28 above (AROP < HEDI <= MHEDI sample)

J.12.4 SAL and nonSAL households' level of perceived social exclusion (HEDI > MHEDI sample)

Table J.29: Percentage of SAL and nonSAL households listed by level of perceived social exclusion (HEDI > MHEDI sample)

		household average		household maximum			
		SAL (%)	nonSAL (%)	SAL (%)	nonSAL (%)		
perceived social exclusion	not at all	26.9	39.3	26.3	38.6	not at all	perceived social exclusion
	1	8.9	13.0	5.9	10.3	1	
	2	10.0	10.2	8.4	10.5	2	
	3	9.5	6.4	7.7	6.4	3	
	4	7.8	4.2	5.4	3.6	4	
	5	11.2	6.4	13.7	7.4	5	
	6	6.2	3.4	5.7	3.7	6	
	7	6.2	5.2	7.7	5.7	7	
	8	7.5	6.8	10.2	7.4	8	
	9	2.6	3.1	4	3.4	9	
	completely	3.1	2.1	5.1	2.9	completely	

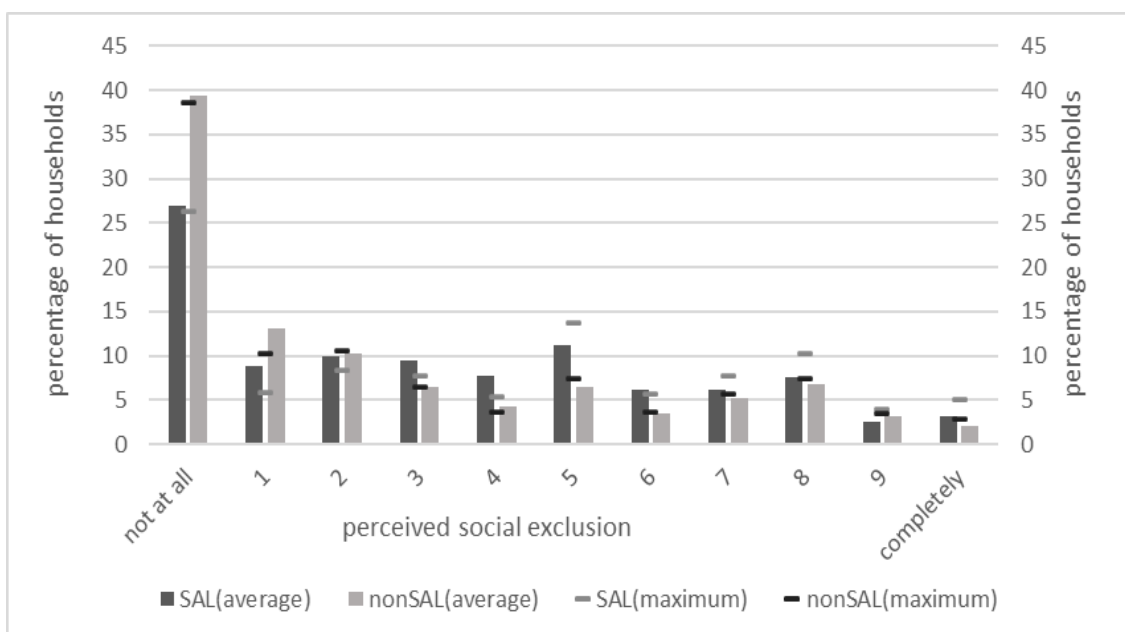


Figure J.22: Graphical representation of percentage of SAL and nonSAL households listed by level of perceived social exclusion, Table J.29 above (HEDI > MHEDI sample)

J.12.5 SAL and nonSAL households' mean differences at country level

Table J.30: SAL and nonSAL households' mean difference of their average perceived level of social exclusion

	t-test equality of means			independent samples effect size		
	mean difference*	99% confidence interval		Cohen's d	99% confidence interval	
		lower	upper		lower	upper
Norway	-2.31	-2.33	-2.29	-0.979	-0.986	-0.972
Denmark	-1.94	-1.96	-1.92	-0.841	-0.847	-0.835
Iceland	-1.80	-1.86	-1.74	-0.694	-0.713	-0.674
Croatia	-1.76	-1.78	-1.74	-0.633	-0.64	-0.627
Bulgaria	-1.69	-1.71	-1.67	-0.634	-0.64	-0.628
Lithuania	-1.67	-1.69	-1.64	-0.601	-0.61	-0.593
Czech Republic	-1.63	-1.65	-1.62	-0.719	-0.724	-0.715
United Kingdom	-1.49	-1.50	-1.49	-0.606	-0.607	-0.604
Netherlands	-1.47	-1.48	-1.45	-0.503	-0.507	-0.499
Germany	-1.37	-1.38	-1.37	-0.676	-0.677	-0.674
Latvia	-1.35	-1.38	-1.33	-0.497	-0.506	-0.489
Slovakia	-1.33	-1.34	-1.32	-0.626	-0.631	-0.621
Belgium	-1.22	-1.23	-1.21	-0.477	-0.48	-0.474
Greece	-1.17	-1.18	-1.17	-0.516	-0.52	-0.513
Serbia	-1.15	-1.17	-1.14	-0.432	-0.438	-0.426
Italy	-1.15	-1.15	-1.14	-0.476	-0.478	-0.474
Malta	-1.11	-1.20	-1.03	-0.401	-0.431	-0.372
Switzerland	-1.08	-1.09	-1.06	-0.511	-0.516	-0.506
Cyprus	-1.05	-1.08	-1.02	-0.575	-0.588	-0.561
Estonia	-0.99	-1.01	-0.97	-0.488	-0.496	-0.479
Romania	-0.93	-0.94	-0.92	-0.361	-0.364	-0.357
Ireland	-0.91	-0.93	-0.89	-0.445	-0.452	-0.438
Spain	-0.86	-0.86	-0.85	-0.497	-0.499	-0.494
Poland	-0.85	-0.86	-0.85	-0.498	-0.501	-0.496
Portugal	-0.72	-0.73	-0.71	-0.329	-0.333	-0.325
Luxembourg	-0.48	-0.52	-0.45	-0.216	-0.23	-0.202
Hungary	-0.36	-0.37	-0.35	-0.141	-0.145	-0.137
Austria	0.38	0.37	0.38	0.509	0.505	0.513
France	0.81	0.81	0.81	0.455	0.454	0.457
Sweden	1.74	1.72	1.75	0.723	0.717	0.729
Slovenia	1.78	1.75	1.80	0.793	0.783	0.803
Finland	1.88	1.86	1.89	0.99	0.984	0.996

* nonSAL - SAL

J.12.6 SAL and nonSAL households' level of perceived social exclusion in Norway and Finland

Table J.31: Mean, median, mode, and 20th, 40th, 60th and 80th percentiles of SAL and nonSAL households' average level of perceived social exclusion in Norway and Finland

all households in Norway and Finland									
		mean	median	mode	percentile				valid
					20 th	40 th	60 th	80 th	
Norway	SAL	3.9	4.0	0.0	0.0	2.0	5.0	8.0	95.9%
	nonSAL	1.6	0.0	0.0	0.0	0.0	1.0	3.0	97.6%
Finland	SAL	5.7	6.0	8.0	3.0	5.0	7.0	8.0	86.6%
	nonSAL	7.6	8.0	8.0	7.0	8.0	8.0	9.0	92.8%
households at risk of poverty in Norway and Finland									
		mean	median	mode	percentile				valid
					20 th	40 th	60 th	80 th	
Norway	SAL	4.2	4.0	0.0	0.0	3.0	5.0	8.0	93.9%
	nonSAL	2.2	1.0	0.0	0.0	0.0	2.0	5.0	96.3%
Finland	SAL	5.5	6.0	8.0	3.0	5.0	7.0	8.0	87.8%
	nonSAL	6.8	7.0	8.0	5.0	7.0	8.0	8.0	91.9%
households not at risk of poverty and HEDI <= MHEDI in Norway and Finland									
		mean	median	mode	percentile				valid
					20 th	40 th	60 th	80 th	
Norway	SAL	4.3	4.0	0.0	0.0	3.0	5.0	8.0	96.6%
	nonSAL	1.8	0.0	0.0	0.0	0.0	1.0	4.0	95.8%
Finland	SAL	5.2	5.0	7.0	3.0	5.0	6.0	7.0	88.3%
	nonSAL	7.3	8.0	8.0	6.0	7.0	8.0	9.0	92.2%
households HEDI > MHEDI in Norway and Finland									
		mean	median	mode	percentile				valid
					20 th	40 th	60 th	80 th	
Norway	SAL	2.7	1.0	0.0	0.0	0.0	2.0	6.0	96.7%
	nonSAL	1.2	0.0	0.0	0.0	0.0	0.0	2.0	99.1%
Finland	SAL	6.8	7.0	8.0	5.0	7.0	8.0	9.0	82.9%
	nonSAL	8.0	8.0	8.0	7.0	8.0	8.0	9.0	93.5%

Appendix K. Linear model of predictors of deprivation

K.1 Predictors of deprivation in each country

K.1.1 Austria

Table K.1: Regression coefficients for SAL and nonSAL households in Austria from linear model of predictors of deprivation (2018 trimmed sample for Austria explained in table below)

	SAL households coefficients	nonSAL households coefficients	coefficients difference SAL - nonSAL
	B SAL	B nonSAL	
(Constant)	7.790	3.839	3.951
HEDI as % of country median HEDI	-0.056	-0.024	-0.032
Total housing costs a heavy burden	15.854	11.573	4.281
Debt repayments a heavy burden	9.832	10.299	-0.467
Overcrowded household	8.510	3.929	4.581
Low work intensity	8.195	7.634	0.561
No non-material support	4.637	3.052	1.585
Single parent household with children	4.258	2.240	2.018
Paying rent for accommodation	3.355	2.510	0.845
General bad health circumstances	2.164	6.042	-3.878
One-person household	2.093	1.234	0.859
No material support	1.756	1.974	-0.218
For all coefficients, $p < 0.000$.			
All coefficients have relative narrow 99% confidence intervals that do not cross the zero threshold.			
$R^2 = 0.623$ for SAL households regression.			
$R^2 = 0.428$ for nonSAL households regression.			

unweighted sample							
	original sample		units removed		trimmed sample		
			HEDI < 0	HEDI > 5 x MHEDI			
	N	(%)	n	n	N	(%)	% removed
nonSAL	5,244	85.9	0	15	5,229	85.9	0.3
SAL	859	14.1	0	0	859	14.1	0.0
total	6,103	100.0	0	15	6,088	100.0	0.2
weighted sample							
	original sample		units removed		trimmed sample		
			HEDI < 0	HEDI > 5 x MHEDI			
	N	(%)	n	n	N	(%)	% removed
nonSAL	3,309,570	84.6	0	10,670	3,298,901	84.6	0.3
SAL	601,877	15.4	0	0	601,877	15.4	0.0
total	3,911,448	100.0	0	10,670	3,900,778	100.0	0.3

K.1.2 Belgium

Table K.2: Regression coefficients for SAL and nonSAL households in Belgium from linear model of predictors of deprivation (2018 trimmed sample for Belgium explained in table below)

	SAL households coefficients	nonSAL households coefficients	coefficients difference SAL - nonSAL
	B SAL	B nonSAL	
(Constant)	6.835	5.385	1.450
HEDI as % of country median HEDI	-0.064	-0.038	-0.026
Total housing costs a heavy burden	12.745	9.619	3.126
Paying rent for accommodation	9.418	6.428	2.990
Debt repayments a heavy burden	8.086	6.122	1.964
No material support	6.752	4.451	2.301
Low work intensity	6.686	13.870	-7.184
Overcrowded household	5.829	5.179	0.650
Single parent household with children	4.024	3.947	0.077
General bad health circumstances	3.364	4.814	-1.450
No non-material support	2.709	1.734	0.975
One-person household	1.762	1.415	0.347
For all coefficients, $p < 0.000$.			
All coefficients have relative narrow 99% confidence intervals that do not cross the zero threshold.			
$R^2 = 0.559$ for SAL households regression.			
$R^2 = 0.542$ for nonSAL households regression.			

unweighted sample							
	original sample		units removed		trimmed sample		
			HEDI < 0	HEDI > 5 x MHEDI			
	N	(%)	n	n	N	(%)	% removed
nonSAL	5,072	85.3	13	11	5,048	85.2	0.5
SAL	874	14.7	0	0	874	14.8	0.0
total	5,946	100.0	13	11	5,922	100.0	0.4
weighted sample							
	original sample		units removed		trimmed sample		
			HEDI < 0	HEDI > 5 x MHEDI			
	N	(%)	n	n	N	(%)	% removed
nonSAL	4,191,376	85.3	10,326	8,197	4,172,853	85.2	0.4
SAL	723,891	14.7	0	0	723,891	14.8	0.0
total	4,915,267	100.0	10,326	8,197	4,896,744	100.0	0.4

K.1.3 Bulgaria

Table K.3: Regression coefficients for SAL and nonSAL households in Bulgaria from linear model of predictors of deprivation (2018 trimmed sample for Bulgaria explained in table below)

	SAL households coefficients	nonSAL households coefficients	coefficients difference SAL - nonSAL
	B SAL	B nonSAL	
(Constant)	32.369	26.102	6.267
HEDI as % of country median HEDI	-0.110	-0.099	-0.011
Total housing costs a heavy burden	14.897	14.316	0.581
Low work intensity	9.281	11.643	-2.362
Debt repayments a heavy burden	7.980	9.110	-1.130
No non-material support	4.560	3.915	0.645
Single parent household with children	3.357	2.537	0.820
Overcrowded household	3.262	3.219	0.043
General bad health circumstances	2.405	5.847	-3.442
No material support	2.244	4.268	-2.024
Paying rent for accommodation	0.206*	-1.155	1.361
One-person household	-1.729	5.110	-6.839
For all coefficients, $p < 0.000$, unless otherwise indicated.			
All coefficients have relative narrow 99% confidence intervals that do not cross the zero threshold, unless otherwise indicated.			
$R^2 = 0.429$ for SAL households regression.			
$R^2 = 0.490$ for nonSAL households regression.			
* $p = 0.316$; 99% confidence interval crosses the zero threshold.			

unweighted sample							
	original sample		units removed		trimmed sample		
			HEDI < 0	HEDI > 5 x MHEDI			
	N	(%)	n	n	N	(%)	% removed
nonSAL	6,589	91.1	0	79	6,510	91.0	1.2
SAL	644	8.9	0	3	641	9.0	0.5
total	7,233	100.0	0	82	7,151	100.0	1.1
weighted sample							
	original sample		units removed		trimmed sample		
			HEDI < 0	HEDI > 5 x MHEDI			
	N	(%)	n	n	N	(%)	% removed
nonSAL	2,713,836	92.9	0	45,006	2,668,830	92.8	1.7
SAL	208,096	7.1	0	1,498	206,598	7.2	0.7
total	2,921,932	100.0	0	46,504	2,875,428	100.0	1.6

K.1.4 Croatia

Table K.4: Regression coefficients for SAL and nonSAL households in Croatia from linear model of predictors of deprivation (2018 trimmed sample for Croatia explained in table below)

	SAL households coefficients	nonSAL households coefficients	coefficients difference SAL - nonSAL
	B SAL	B nonSAL	
(Constant)	17.847	17.847	6.405
HEDI as % of country median HEDI	-0.118	-0.118	-0.057
Total housing costs a heavy burden	9.717	9.717	-0.524
No material support	8.831	8.831	3.700
Paying rent for accommodation	8.080	8.080	5.886
No non-material support	6.083	6.083	-0.595
Low work intensity	4.213	4.213	-0.968
One-person household	3.480	3.480	-0.161
Debt repayments a heavy burden	3.332	3.332	1.053
General bad health circumstances	3.208	3.208	-0.399
Overcrowded household	1.331	1.331	-0.334
Single parent household with children	-1.813	-1.813	-5.874
For all coefficients, p < 0.000			
All coefficients have relative narrow 99% confidence intervals that do not cross the zero threshold.			
R² = 0.480 for SAL households regression			
R² = 0.475 for nonSAL households regression			

unweighted sample							
	original sample		units removed		trimmed sample		
			HEDI < 0	HEDI > 5 x MHEDI			
	N	(%)	n	n	N	(%)	% removed
nonSAL	6,504	77.6	6	13	6,485	77.5	0.3
SAL	1,879	22.4	0	0	1,879	22.5	0.0
total	8,383	100.0	6	13	8,364	100.0	0.2
weighted sample							
	original sample		units removed		trimmed sample		
			HEDI < 0	HEDI > 5 x MHEDI			
	N	(%)	n	n	N	(%)	% removed
nonSAL	1,172,705	79.5	769	3,036	1,168,900	79.5	0.3
SAL	301,944	20.5	0	0	301,944	20.5	0.0
total	1,474,649	100.0	769	3,036	1,470,844	100.0	0.3

K.1.5 Cyprus

Table K.5: Regression coefficients for SAL and nonSAL households in Cyprus from linear model of predictors of deprivation (2018 trimmed sample for Cyprus explained in table below)

	SAL households coefficients	nonSAL households coefficients	coefficients difference SAL - nonSAL
	B SAL	B nonSAL	
(Constant)	21.356	13.918	7.438
HEDI as % of country median HEDI	-0.132	-0.069	-0.063
Single parent household with children	18.520	3.363	15.157
Debt repayments a heavy burden	10.811	6.534	4.277
Total housing costs a heavy burden	8.834	8.039	0.795
Paying rent for accommodation	7.515	2.440	5.075
Overcrowded household	6.313	7.395	-1.082
No material support	3.728	2.803	0.925
Low work intensity	1.974	10.083	-8.109
No non-material support	1.947	1.133	0.814
One-person household	0.996	-0.769	1.765
General bad health circumstances	0.161*	3.689	-3.528

For all coefficients, $p < 0.000$, unless otherwise indicated.

All coefficients have relative narrow 99% confidence intervals that do not cross the zero threshold, unless otherwise indicated.

$R^2 = 0.485$ for SAL households regression.

$R^2 = 0.449$ for nonSAL households regression.

* $p = 0.167$; 99% confidence interval crosses the zero threshold.

unweighted sample							
	original sample		units removed		trimmed sample		
			HEDI < 0	HEDI > 5 x MHEDI			
	N	(%)	n	n	N	(%)	% removed
nonSAL	3,451	82.3	0	25	3,426	82.3	0.7
SAL	741	17.7	0	2	739	17.7	0.3
total	4,192	100.0	0	27	4,165	100.0	0.6

weighted sample							
	original sample		units removed		trimmed sample		
			HEDI < 0	HEDI > 5 x MHEDI			
	N	(%)	n	n	N	(%)	% removed
nonSAL	275,445	85.0	0	1,722	273,724	85.0	0.6
SAL	48,555	15.0	0	160	48,395	15.0	0.3
total	324,000	100.0	0	1,882	322,118	100.0	0.6

K.1.6 Czech Republic

Table K.6: Regression coefficients for SAL and nonSAL households in Czech Republic from linear model of predictors of deprivation (2018 trimmed sample for Czech Republic explained in table below)

	SAL households coefficients	nonSAL households coefficients	coefficients difference SAL - nonSAL
	B SAL	B nonSAL	
(Constant)	12.213	7.561	4.652
HEDI as % of country median HEDI	-0.071	-0.040	-0.031
Total housing costs a heavy burden	12.424	10.945	1.479
Debt repayments a heavy burden	5.659	7.069	-1.410
Overcrowded household	5.628	1.706	3.922
No material support	5.417	5.916	-0.499
Low work intensity	4.031	8.124	-4.093
Paying rent for accommodation	3.916	3.187	0.729
Single parent household with children	3.829	1.663	2.166
One-person household	2.220	1.604	0.616
General bad health circumstances	1.385	3.355	-1.970
No non-material support	-0.032*	2.328	-2.360
For all coefficients, $p < 0.000$, unless otherwise indicated.			
All coefficients have relative narrow 99% confidence intervals that do not cross the zero threshold, unless otherwise indicated.			
$R^2 = 0.425$ for SAL households regression.			
$R^2 = 0.445$ for nonSAL households regression.			
* $p = 0.688$; 99% confidence interval crosses the zero threshold.			

unweighted sample							
	original sample		units removed		trimmed sample		
			HEDI < 0	HEDI > 5 x MHEDI			
	N	(%)	n	n	N	(%)	% removed
nonSAL	7,737	89.6	6	12	7,719	89.6	0.2
SAL	897	10.4	0	0	897	10.4	0.0
total	8,634	100.0	6	12	8,616	100.0	0.2
weighted sample							
	original sample		units removed		trimmed sample		
			HEDI < 0	HEDI > 5 x MHEDI			
	N	(%)	n	n	N	(%)	% removed
nonSAL	3,981,608	90.6	2,987	8,024	3,970,596	90.6	0.3
SAL	413,261	9.4	0	0	413,261	9.4	0.0
total	4,394,869	100.0	2,987	8,024	4,383,857	100.0	0.3

K.1.7 Denmark

Table K.7: Regression coefficients for SAL and nonSAL households in Denmark from linear model of predictors of deprivation (2018 trimmed sample for Denmark explained in table below)

	SAL households coefficients	nonSAL households coefficients	coefficients difference SAL - nonSAL
	B SAL	B nonSAL	
(Constant)	8.227	5.050	3.177
HEDI as % of country median HEDI	-0.062	-0.028	-0.034
Total housing costs a heavy burden	19.716	11.858	7.858
Debt repayments a heavy burden	18.103	17.852	0.251
No material support	6.532	3.218	3.314
Low work intensity	6.353	4.053	2.300
Paying rent for accommodation	3.495	4.242	-0.747
General bad health circumstances	2.675	3.495	-0.820
Single parent household with children	1.855	3.170	-1.315
One-person household	1.219	-0.119	1.338
No non-material support	-1.161	3.316	-4.477
Overcrowded household	-2.727	2.825	-5.552
For all coefficients, $p < 0.000$			
All coefficients have relative narrow 99% confidence intervals that do not cross the zero threshold.			
$R^2 = 0.626$ for SAL households regression			
$R^2 = 0.445$ for nonSAL households regression			

unweighted sample							
	original sample		units removed		trimmed sample		
			HEDI < 0	HEDI > 5 x MHEDI			
	N	(%)	n	n	N	(%)	% removed
nonSAL	5,254	93.8	9	26	5,219	93.7	0.7
SAL	350	6.2	0	0	350	6.3	0.0
total	5,604	100.0	9	26	5,569	100.0	0.6
weighted sample							
	original sample		units removed		trimmed sample		
			HEDI < 0	HEDI > 5 x MHEDI			
	N	(%)	n	n	N	(%)	% removed
nonSAL	2,693,183	93.3	11,963	14,249	2,666,970	93.2	1.0
SAL	193,490	6.7	0	0	193,490	6.8	0.0
total	2,886,673	100.0	11,963	14,249	2,860,461	100.0	0.9

K.1.8 Estonia

Table K.8: Regression coefficients for SAL and nonSAL households in Estonia from linear model of predictors of deprivation (2018 trimmed sample for Estonia explained in table below)

	SAL households coefficients	nonSAL households coefficients	coefficients difference SAL - nonSAL
	B SAL	B nonSAL	
(Constant)	14.373	8.957	5.416
HEDI as % of country median HEDI	-0.062	-0.038	-0.024
Debt repayments a heavy burden	14.190	6.269	7.921
Total housing costs a heavy burden	11.559	12.706	-1.147
Low work intensity	8.599	8.095	0.504
No material support	7.169	4.675	2.494
Overcrowded household	4.443	3.174	1.269
No non-material support	3.168	4.516	-1.348
Paying rent for accommodation	2.988	-0.948	3.936
One-person household	1.681	1.872	-0.191
Single parent household with children	1.606	2.809	-1.203
General bad health circumstances	1.325	4.462	-3.137
For all coefficients, $p < 0.000$			
All coefficients have relative narrow 99% confidence intervals that do not cross the zero threshold.			
$R^2 = 0.400$ for SAL households regression			
$R^2 = 0.408$ for nonSAL households regression			

unweighted sample							
	original sample		units removed		trimmed sample		
			HEDI < 0	HEDI > 5 x MHEDI			
	N	(%)	n	n	N	(%)	% removed
nonSAL	4,861	80.1	11	0	4,850	80.0	0.2
SAL	1,211	19.9	2	0	1,209	20.0	0.2
total	6,072	100.0	13	0	6,059	100.0	0.2
weighted sample							
	original sample		units removed		trimmed sample		
			HEDI < 0	HEDI > 5 x MHEDI			
	N	(%)	n	n	N	(%)	% removed
nonSAL	497,395	82.5	1,023	0	496,372	82.5	0.2
SAL	105,211	17.5	270	0	104,941	17.5	0.3
total	602,606	100.0	1,293	0	601,313	100.0	0.2

K.1.9 Finland

Table K.9: Regression coefficients for SAL and nonSAL households in Finland from linear model of predictors of deprivation (2018 trimmed sample for Finland explained in table below)

	SAL households coefficients	nonSAL households coefficients	coefficients difference SAL - nonSAL
	B SAL	B nonSAL	
(Constant)	2.609	3.436	-0.827
HEDI as % of country median HEDI	-0.026	-0.020	-0.006
Debt repayments a heavy burden	13.519	9.135	4.384
Total housing costs a heavy burden	9.864	6.211	3.653
Low work intensity	8.832	8.721	0.111
Paying rent for accommodation	6.586	3.495	3.091
No material support	3.616	3.279	0.337
General bad health circumstances	3.341	3.567	-0.226
One-person household	3.262	1.630	1.632
No non-material support	1.443	4.373	-2.930
Single parent household with children	0.090*	2.380	-2.290
Overcrowded household	-2.377	0.161	-2.538
For all coefficients, $p < 0.000$, unless otherwise indicated.			
All coefficients have relative narrow 99% confidence intervals that do not cross the zero threshold, unless otherwise indicated.			
$R^2 = 0.497$ for SAL households regression.			
$R^2 = 0.390$ for nonSAL households regression.			
* $p = 0.566$; 99% confidence interval crosses the zero threshold.			

unweighted sample							
	original sample		units removed		trimmed sample		
			HEDI < 0	HEDI > 5 x MHEDI			
	N	(%)	n	n	N	(%)	% removed
nonSAL	9,228	93.9	1	53	9,174	93.9	0.6
SAL	604	6.1	1	2	601	6.1	0.5
total	9,832	100.0	2	55	9,775	100.0	0.6
weighted sample							
	original sample		units removed		trimmed sample		
			HEDI < 0	HEDI > 5 x MHEDI			
	N	(%)	n	n	N	(%)	% removed
nonSAL	2,484,782	91.6	218	10,096	2,474,467	91.6	0.4
SAL	228,519	8.4	67	217	228,234	8.4	0.1
total	2,713,300	100.0	285	10,313	2,702,701	100.0	0.4

K.1.10 France

Table K.10: Regression coefficients for SAL and nonSAL households in France from linear model of predictors of deprivation (2018 trimmed sample for France explained in table below)

	SAL households coefficients	nonSAL households coefficients	coefficients difference SAL - nonSAL
	B SAL	B nonSAL	
(Constant)	12.496	7.092	5.404
HEDI as % of country median HEDI	-0.089	-0.043	-0.046
Total housing costs a heavy burden	12.760	9.555	3.205
Debt repayments a heavy burden	7.863	8.060	-0.197
Low work intensity	7.661	10.878	-3.217
Paying rent for accommodation	7.637	5.400	2.237
Single parent household with children	5.410	3.551	1.859
No non-material support	4.431	3.894	0.537
General bad health circumstances	3.361	4.388	-1.027
No material support	3.150	4.706	-1.556
One-person household	2.871	1.548	1.323
Overcrowded household	1.436	5.018	-3.582
For all coefficients, p < 0.000			
All coefficients have relative narrow 99% confidence intervals that do not cross the zero threshold.			
R² = 0.470 for SAL households regression			
R² = 0.414 for nonSAL households regression			

unweighted sample							
	original sample		units removed		trimmed sample		
			HEDI < 0	HEDI > 5 x MHEDI			
	N	(%)	n	n	N	(%)	% removed
nonSAL	9,164	84.3	13	47	9,104	84.2	0.7
SAL	1,712	15.7	1	4	1,707	15.8	0.3
total	10,876	100.0	14	51	10,811	100.0	0.6
weighted sample							
	original sample		units removed		trimmed sample		
			HEDI < 0	HEDI > 5 x MHEDI			
	N	(%)	n	n	N	(%)	% removed
nonSAL	24,415,498	85.3	26,621	131,753	24,257,124	85.2	0.6
SAL	4,218,283	14.7	1,213	10,424	4,206,647	14.8	0.3
total	28,633,781	100.0	27,834	142,176	28,463,771	100.0	0.6

K.1.11 Germany

Table K.11: Regression coefficients for SAL and nonSAL households in Germany from linear model of predictors of deprivation (2018 trimmed sample for Germany explained in table below)

	SAL households coefficients	nonSAL households coefficients	coefficients difference SAL - nonSAL
	B SAL	B nonSAL	
(Constant)	11.869	5.753	6.116
HEDI as % of country median HEDI	-0.098	-0.037	-0.061
Total housing costs a heavy burden	10.488	8.036	2.452
Low work intensity	6.430	8.779	-2.349
Debt repayments a heavy burden	6.231	8.945	-2.714
No non-material support	4.851	2.865	1.986
One-person household	4.402	2.072	2.330
No material support	4.169	3.361	0.808
Paying rent for accommodation	4.116	3.335	0.781
Single parent household with children	3.541	3.568	-0.027
General bad health circumstances	3.211	3.888	-0.677
Overcrowded household	2.075	3.182	-1.107
For all coefficients, $p < 0.000$			
All coefficients have relative narrow 99% confidence intervals that do not cross the zero threshold.			
$R^2 = 0.483$ for SAL households regression			
$R^2 = 0.372$ for nonSAL households regression			

unweighted sample							
	original sample		units removed		trimmed sample		
			HEDI < 0	HEDI > 5 x MHEDI			
	N	(%)	n	n	N	(%)	% removed
nonSAL	11,372	88.2	54	53	11,265	88.1	0.9
SAL	1,520	11.8	2	2	1,516	11.9	0.3
total	12,892	100.0	56	55	12,781	100.0	0.9
weighted sample							
	original sample		units removed		trimmed sample		
			HEDI < 0	HEDI > 5 x MHEDI			
	N	(%)	n	n	N	(%)	% removed
nonSAL	36,410,252	89.4	190,207	186,279	36,033,766	89.3	1.0
SAL	4,312,345	10.6	7,329	7,789	4,297,227	10.7	0.4
total	40,722,597	100.0	197,536	194,068	40,330,993	100.0	1.0

K.1.12 Greece

Table K.12: Regression coefficients for SAL and nonSAL households in Greece from linear model of predictors of deprivation (2018 trimmed sample for Greece explained in table below)

	SAL households coefficients	nonSAL households coefficients	coefficients difference SAL - nonSAL
	B SAL	B nonSAL	
(Constant)	29.883	24.794	5.089
HEDI as % of country median HEDI	-0.101	-0.087	-0.014
Total housing costs a heavy burden	9.564	10.677	-1.113
Debt repayments a heavy burden	5.636	3.329	2.307
Low work intensity	4.908	5.314	-0.406
Overcrowded household	4.747	3.984	0.763
Paying rent for accommodation	4.481	2.454	2.027
Single parent household with children	2.544	1.922	0.622
General bad health circumstances	2.474	3.358	-0.884
No non-material support	1.742	1.432	0.310
No material support	1.489	2.612	-1.123
One-person household	-1.822	-0.697	-1.125
For all coefficients, p < 0.000			
All coefficients have relative narrow 99% confidence intervals that do not cross the zero threshold.			
R² = 0.623 for SAL households regression			
R² = 0.351 for nonSAL households regression			

unweighted sample							
	original sample		units removed		trimmed sample		
			HEDI < 0	HEDI > 5 x MHEDI			
	N	(%)	n	n	N	(%)	% removed
nonSAL	19,200	79.0	99	103	18,998	78.9	1.1
SAL	5,105	21.0	16	6	5,083	21.1	0.4
total	24,305	100.0	115	109	24,081	100.0	0.9
weighted sample							
	original sample		units removed		trimmed sample		
			HEDI < 0	HEDI > 5 x MHEDI			
	N	(%)	n	n	N	(%)	% removed
nonSAL	3,333,501	80.8	16,224	20,540	3,296,737	80.7	1.1
SAL	791,762	19.2	2,003	844	788,915	19.3	0.4
total	4,125,263	100.0	18,227	21,384	4,085,652	100.0	1.0

K.1.13 Hungary

Table K.13: Regression coefficients for SAL and nonSAL households in Hungary from linear model of predictors of deprivation (2018 trimmed sample for Hungary explained in table below)

	SAL households coefficients	nonSAL households coefficients	coefficients difference SAL - nonSAL
	B SAL	B nonSAL	
(Constant)	22.279	16.479	5.800
HEDI as % of country median HEDI	-0.129	-0.083	-0.046
Total housing costs a heavy burden	18.118	17.688	0.430
Low work intensity	7.818	8.052	-0.234
Paying rent for accommodation	6.777	2.660	4.117
Overcrowded household	6.724	5.392	1.332
No non-material support	5.234	1.378	3.856
Debt repayments a heavy burden	4.675	3.189	1.486
Single parent household with children	4.626	3.879	0.747
General bad health circumstances	3.676	4.208	-0.532
No material support	2.684	5.454	-2.770
One-person household	0.678	1.019	-0.341
For all coefficients, $p < 0.000$			
All coefficients have relative narrow 99% confidence intervals that do not cross the zero threshold.			
$R^2 = 0.572$ for SAL households regression			
$R^2 = 0.513$ for nonSAL households regression			

unweighted sample							
	original sample		units removed		trimmed sample		
			HEDI < 0	HEDI > 5 x MHEDI			
	N	(%)	n	n	N	(%)	% removed
nonSAL	6,245	83.0	4	21	6,220	83.0	0.4
SAL	1,279	17.0	0	2	1,277	17.0	0.2
total	7,524	100.0	4	23	7,497	100.0	0.4
weighted sample							
	original sample		units removed		trimmed sample		
			HEDI < 0	HEDI > 5 x MHEDI			
	N	(%)	n	n	N	(%)	% removed
nonSAL	3,595,295	87.0	4,520	19,344	3,571,431	87.0	0.7
SAL	535,986	13.0	0	798	535,188	13.0	0.1
total	4,131,281	100.0	4,520	20,142	4,106,619	100.0	0.6

K.1.14 Ireland

Table K.14: Regression coefficients for SAL and nonSAL households in Ireland from linear model of predictors of deprivation (2018 trimmed sample for Ireland explained in table below)

	SAL households coefficients	nonSAL households coefficients	coefficients difference SAL - nonSAL
	B SAL	B nonSAL	
(Constant)	5.416	6.845	-1.429
HEDI as % of country median HEDI	-0.033	-0.038	0.005
Total housing costs a heavy burden	14.707	10.836	3.871
Debt repayments a heavy burden	11.814	7.478	4.336
Paying rent for accommodation	9.370	4.574	4.796
No non-material support	5.781	5.625	0.156
No material support	5.496	3.468	2.028
Single parent household with children	5.451	4.753	0.698
One-person household	4.393	0.995	3.398
General bad health circumstances	4.059	7.317	-3.258
Low work intensity	3.401	8.556	-5.155
Overcrowded household	-3.594	0.993	-4.587
For all coefficients, $p < 0.000$			
All coefficients have relative narrow 99% confidence intervals that do not cross the zero threshold.			
$R^2 = 0.621$ for SAL households regression			
$R^2 = 0.525$ for nonSAL households regression			

unweighted sample							
	original sample		units removed		trimmed sample		
			HEDI < 0	HEDI > 5 x MHEDI			
	N	(%)	n	n	N	(%)	% removed
nonSAL	3,887	88.7	0	16	3,871	88.7	0.4
SAL	495	11.3	0	0	495	11.3	0.0
total	4,382	100.0	0	16	4,366	100.0	0.4
weighted sample							
	original sample		units removed		trimmed sample		
			HEDI < 0	HEDI > 5 x MHEDI			
	N	(%)	n	n	N	(%)	% removed
nonSAL	1,676,322	90.6	0	9,358	1,666,963	90.5	0.6
SAL	174,065	9.4	0	0	174,065	9.5	0.0
total	1,850,387	100.0	0	9,358	1,841,029	100.0	0.5

K.1.15 Iceland

Table K.15: Regression coefficients for SAL and nonSAL households in Iceland from linear model of predictors of deprivation (2018 trimmed sample for Iceland explained in table below)

	SAL households coefficients	nonSAL households coefficients	coefficients difference SAL - nonSAL
	B SAL	B nonSAL	
(Constant)	5.966	5.477	0.489
HEDI as % of country median HEDI	-0.040	-0.026	-0.014
Total housing costs a heavy burden	10.181	5.562	4.619
Debt repayments a heavy burden	9.593	8.852	0.741
No material support	8.460	2.911	5.549
Low work intensity	5.972	5.340	0.632
Single parent household with children	5.516	2.937	2.579
Paying rent for accommodation	4.860	2.553	2.307
General bad health circumstances	4.048	2.935	1.113
Overcrowded household	2.909	1.176	1.733
No non-material support	2.027	3.780	-1.753
One-person household	-0.027*	0.451	-0.478
For all coefficients, $p < 0.000$, unless otherwise indicated.			
All coefficients have relative narrow 99% confidence intervals that do not cross the zero threshold, unless otherwise indicated.			
$R^2 = 0.508$ for SAL households regression.			
$R^2 = 0.337$ for nonSAL households regression.			
* $p = 0.868$; 99% confidence interval crosses the zero threshold.			

unweighted sample							
	original sample		units removed		trimmed sample		
			HEDI < 0	HEDI > 5 x MHEDI			
	N	(%)	n	n	N	(%)	% removed
nonSAL	2,577	86.8	3	11	2,563	86.8	0.5
SAL	392	13.2	1	0	391	13.2	0.3
total	2,969	100.0	4	11	2,954	100.0	0.5
weighted sample							
	original sample		units removed		trimmed sample		
			HEDI < 0	HEDI > 5 x MHEDI			
	N	(%)	n	n	N	(%)	% removed
nonSAL	128,420	85.8	194	333	127,893	85.8	0.4
SAL	21,193	14.2	95	0	21,098	14.2	0.4
total	149,613	100.0	289	333	148,991	100.0	0.4

K.1.16 Italy

Table K.16: Regression coefficients for SAL and nonSAL households in Italy from linear model of predictors of deprivation (2018 trimmed sample for Italy explained in table below)

	SAL households coefficients	nonSAL households coefficients	coefficients difference SAL - nonSAL
	B SAL	B nonSAL	
(Constant)	10.734	8.104	2.630
HEDI as % of country median HEDI	-0.070	-0.044	-0.026
Total housing costs a heavy burden	13.821	9.654	4.167
Paying rent for accommodation	5.378	4.725	0.653
General bad health circumstances	3.781	6.538	-2.757
No material support	3.675	2.362	1.313
Single parent household with children	3.166	-0.701	3.867
Debt repayments a heavy burden	3.151	5.647	-2.496
Low work intensity	3.147	8.194	-5.047
No non-material support	1.895	5.218	-3.323
Overcrowded household	1.633	1.362	0.271
One-person household	1.331	0.877	0.454
For all coefficients, $p < 0.000$			
All coefficients have relative narrow 99% confidence intervals that do not cross the zero threshold.			
$R^2 = 0.370$ for SAL households regression			
$R^2 = 0.373$ for nonSAL households regression			

unweighted sample							
	original sample		units removed		trimmed sample		
			HEDI < 0	HEDI > 5 x MHEDI			
	N	(%)	n	n	N	(%)	% removed
nonSAL	19,131	90.4	34	139	18,958	90.3	0.9
SAL	2,042	9.6	2	5	2,035	9.7	0.3
total	21,173	100.0	36	144	20,993	100.0	0.9
weighted sample							
	original sample		units removed		trimmed sample		
			HEDI < 0	HEDI > 5 x MHEDI			
	N	(%)	n	n	N	(%)	% removed
nonSAL	23,373,177	90.3	51,965	165,694	23,155,518	90.2	0.9
SAL	2,519,401	9.7	2,142	8,306	2,508,953	9.8	0.4
total	25,892,578	100.0	54,107	174,000	25,664,471	100.0	0.9

K.1.17 Latvia

Table K.17: Regression coefficients for SAL and nonSAL households in Latvia from linear model of predictors of deprivation (2018 trimmed sample for Latvia explained in table below)

	SAL households coefficients	nonSAL households coefficients	coefficients difference SAL - nonSAL
	B SAL	B nonSAL	
(Constant)	24.197	16.140	8.057
HEDI as % of country median HEDI	-0.080	-0.055	-0.025
Total housing costs a heavy burden	13.804	15.437	-1.633
Debt repayments a heavy burden	13.544	11.102	2.442
No material support	6.881	7.421	-0.540
Paying rent for accommodation	6.690	5.300	1.390
Low work intensity	6.249	8.066	-1.817
Overcrowded household	3.017	1.236	1.781
General bad health circumstances	1.310	6.264	-4.954
No non-material support	0.911	3.175	-2.264
One-person household	-0.942	0.246	-1.188
Single parent household with children	-3.188	-0.092*	-3.096
For all coefficients, $p < 0.000$, unless otherwise indicated.			
All coefficients have relative narrow 99% confidence intervals that do not cross the zero threshold, unless otherwise indicated.			
$R^2 = 0.420$ for SAL households regression.			
$R^2 = 0.515$ for nonSAL households regression.			
* $p = 0.174$; 99% confidence interval crosses the zero threshold.			

unweighted sample							
	original sample		units removed		trimmed sample		
			HEDI < 0	HEDI > 5 x MHEDI			
	N	(%)	n	n	N	(%)	% removed
nonSAL	4,788	82.1	19	48	4,721	81.9	1.4
SAL	1,045	17.9	1	2	1,042	18.1	0.3
total	5,833	100.0	20	50	5,763	100.0	1.2
weighted sample							
	original sample		units removed		trimmed sample		
			HEDI < 0	HEDI > 5 x MHEDI			
	N	(%)	n	n	N	(%)	% removed
nonSAL	700,730	83.9	3,626	8,833	688,272	83.7	1.8
SAL	134,946	16.1	251	357	134,338	16.3	0.5
total	835,676	100.0	3,877	9,190	822,609	100.0	1.6

K.1.18 Lithuania

Table K.18: Regression coefficients for SAL and nonSAL households in Lithuania from linear model of predictors of deprivation (2018 trimmed sample for Lithuania explained in table below)

	SAL households coefficients	nonSAL households coefficients	coefficients difference SAL - nonSAL
	B SAL	B nonSAL	
(Constant)	22.337	16.226	6.111
HEDI as % of country median HEDI	-0.054	-0.054	0.000
Low work intensity	15.891	10.187	5.704
Total housing costs a heavy burden	14.449	13.972	0.477
Paying rent for accommodation	11.591	6.107	5.484
Debt repayments a heavy burden	8.206	8.904	-0.698
No material support	7.525	8.102	-0.577
Overcrowded household	3.271	3.936	-0.665
General bad health circumstances	2.602	6.945	-4.343
No non-material support	0.145*	1.024	-0.879
Single parent household with children	-0.767**	-2.070	1.303
One-person household	-0.913	2.768	-3.681
For all coefficients, $p < 0.000$, unless otherwise indicated.			
All coefficients have relative narrow 99% confidence intervals that do not cross the zero threshold, unless otherwise indicated.			
$R^2 = 0.426$ for SAL households regression.			
$R^2 = 0.468$ for nonSAL households regression.			
* $p = 0.275$; 99% confidence interval crosses the zero threshold.			
** $p = 0.112$; 99% confidence interval crosses the zero threshold.			

unweighted sample							
	original sample		units removed		trimmed sample		
			HEDI < 0	HEDI > 5 x MHEDI			
	N	(%)	n	n	N	(%)	% removed
nonSAL	4,268	87.0	6	56	4,206	86.8	1.5
SAL	637	13.0	0	0	637	13.2	0.0
total	4,905	100.0	6	56	4,843	100.0	1.3
weighted sample							
	original sample		units removed		trimmed sample		
			HEDI < 0	HEDI > 5 x MHEDI			
	N	(%)	n	n	N	(%)	% removed
nonSAL	1,146,863	89.1	2,479	17,456	1,126,928	88.9	1.7
SAL	140,115	10.9	0	0	140,115	11.1	0.0
total	1,286,979	100.0	2,479	17,456	1,267,044	100.0	1.5

K.1.19 Luxembourg

Table K.19: Regression coefficients for SAL and nonSAL households in Luxembourg from linear model of predictors of deprivation (2018 trimmed sample for Luxembourg explained in table below)

	SAL households coefficients	nonSAL households coefficients	coefficients difference SAL - nonSAL
	B SAL	B nonSAL	
(Constant)	3.960	4.067	-0.107
HEDI as % of country median HEDI	-0.042	-0.026	-0.016
Single parent household with children	9.452	3.410	6.042
Overcrowded household	7.249	2.842	4.407
Low work intensity	6.137	1.639	4.498
Total housing costs a heavy burden	6.070	4.182	1.888
No non-material support	5.163	2.466	2.697
No material support	4.061	2.898	1.163
General bad health circumstances	3.956	3.497	0.459
One-person household	3.372	1.634	1.738
Paying rent for accommodation	2.449	2.644	-0.195
Debt repayments a heavy burden	1.045	2.875	-1.830
For all coefficients, p < 0.000			
All coefficients have relative narrow 99% confidence intervals that do not cross the zero threshold.			
R² = 0.440 for SAL households regression			
R² = 0.286 for nonSAL households regression			

unweighted sample							
	original sample		units removed		trimmed sample		
			HEDI < 0	HEDI > 5 x MHEDI			
	N	(%)	n	n	N	(%)	% removed
nonSAL	3,220	84.0	10	14	3,196	84.0	0.7
SAL	613	16.0	5	0	608	16.0	0.8
total	3,833	100.0	15	14	3,804	100.0	0.8
weighted sample							
	original sample		units removed		trimmed sample		
			HEDI < 0	HEDI > 5 x MHEDI			
	N	(%)	n	n	N	(%)	% removed
nonSAL	211,722	83.9	804	935	209,984	84.0	0.8
SAL	40,613	16.1	761	0	39,852	16.0	1.9
total	252,336	100.0	1,565	935	249,836	100.0	1.0

K.1.20 Malta

Table K.20: Regression coefficients for SAL and nonSAL households in Malta from linear model of predictors of deprivation (2018 trimmed sample for Malta explained in table below)

	SAL households coefficients	nonSAL households coefficients	coefficients difference SAL - nonSAL
	B SAL	B nonSAL	
(Constant)	10.782	8.659	2.123
HEDI as % of country median HEDI	-0.046	-0.040	-0.006
Total housing costs a heavy burden	10.657	7.477	3.180
Low work intensity	9.253	8.846	0.407
Debt repayments a heavy burden	7.836	10.505	-2.669
Single parent household with children	7.049	5.928	1.121
Paying rent for accommodation	6.388	6.124	0.264
Overcrowded household	6.095	11.409	-5.314
No non-material support	5.818	1.477	4.341
General bad health circumstances	2.789	4.539	-1.750
No material support	1.950	4.217	-2.267
One-person household	-0.533*	-0.588	0.055
For all coefficients, $p < 0.000$, unless otherwise indicated.			
All coefficients have relative narrow 99% confidence intervals that do not cross the zero threshold, unless otherwise indicated.			
$R^2 = 0.379$ for SAL households regression.			
$R^2 = 0.368$ for nonSAL households regression.			
* $p = 0.164$; 99% confidence interval crosses the zero threshold.			

unweighted sample							
	original sample		units removed		trimmed sample		
			HEDI < 0	HEDI > 5 x MHEDI			
	N	(%)	n	n	N	(%)	% removed
nonSAL	3,574	93.5	0	10	3,564	93.5	0.3
SAL	249	6.5	0	0	249	6.5	0.0
total	3,823	100.0	0	10	3,813	100.0	0.3
weighted sample							
	original sample		units removed		trimmed sample		
			HEDI < 0	HEDI > 5 x MHEDI			
	N	(%)	n	n	N	(%)	% removed
nonSAL	178,917	95.3	0	559	178,359	95.3	0.3
SAL	8,832	4.7	0	0	8,832	4.7	0.0
total	187,749	100.0	0	559	187,190	100.0	0.3

K.1.21 Netherlands

Table K.21: Regression coefficients for SAL and nonSAL households in Netherlands from linear model of predictors of deprivation (2018 trimmed sample for Netherlands explained in table below)

	SAL households coefficients	nonSAL households coefficients	coefficients difference SAL - nonSAL
	B SAL	B nonSAL	
(Constant)	9.938	5.910	4.028
HEDI as % of country median HEDI	-0.044	-0.022	-0.022
Total housing costs a heavy burden	11.716	12.825	-1.109
Overcrowded household	6.576	-0.107	6.683
Paying rent for accommodation	5.532	3.355	2.177
No material support	4.892	1.375	3.517
Debt repayments a heavy burden	4.767	7.460	-2.693
Low work intensity	4.766	6.324	-1.558
One-person household	1.318	1.241	0.077
General bad health circumstances	1.157	5.395	-4.238
No non-material support	0.536	2.001	-1.465
Single parent household with children	-0.686	2.791	-3.477
For all coefficients, p < 0.000			
All coefficients have relative narrow 99% confidence intervals that do not cross the zero threshold.			
R² = 0.528 for SAL households regression			
R² = 0.462 for nonSAL households regression			

unweighted sample							
	original sample		units removed		trimmed sample		
			HEDI < 0	HEDI > 5 x MHEDI			
	N	(%)	n	n	N	(%)	% removed
nonSAL	11,693	93.6	34	49	11,610	93.6	0.7
SAL	800	6.4	1	0	799	6.4	0.1
total	12,493	100.0	35	49	12,409	100.0	0.7
weighted sample							
	original sample		units removed		trimmed sample		
			HEDI < 0	HEDI > 5 x MHEDI			
	N	(%)	n	n	N	(%)	% removed
nonSAL	7,345,178	93.5	22,851	29,500	7,292,828	93.4	0.7
SAL	512,736	6.5	696	0	512,039	6.6	0.1
total	7,857,914	100.0	23,547	29,500	7,804,867	100.0	0.7

K.1.22 Norway

Table K.22: Regression coefficients for SAL and nonSAL households in Norway from linear model of predictors of deprivation (2018 trimmed sample for Norway explained in table below)

	SAL households coefficients	nonSAL households coefficients	coefficients difference SAL - nonSAL
	B SAL	B nonSAL	
(Constant)	8.427	3.318	5.109
HEDI as % of country median HEDI	-0.050	-0.018	-0.032
Total housing costs a heavy burden	20.980	11.169	9.811
No non-material support	13.548	3.019	10.529
Low work intensity	9.735	6.670	3.065
Paying rent for accommodation	6.516	3.587	2.929
Debt repayments a heavy burden	3.542	16.096	-12.554
General bad health circumstances	1.286	3.975	-2.689
One-person household	-0.863	0.484	-1.347
Single parent household with children	-3.018	1.492	-4.510
No material support	-4.174	2.841	-7.015
Overcrowded household	-6.372	2.220	-8.592
For all coefficients, $p < 0.000$			
All coefficients have relative narrow 99% confidence intervals that do not cross the zero threshold.			
$R^2 = 0.552$ for SAL households regression			
$R^2 = 0.405$ for nonSAL households regression			

unweighted sample							
	original sample		units removed		trimmed sample		
			HEDI < 0	HEDI > 5 x MHEDI			
	N	(%)	n	n	N	(%)	% removed
nonSAL	5,712	95.5	9	14	5,689	95.5	0.4
SAL	269	4.5	1	1	267	4.5	0.7
total	5,981	100.0	10	15	5,956	100.0	0.4
weighted sample							
	original sample		units removed		trimmed sample		
			HEDI < 0	HEDI > 5 x MHEDI			
	N	(%)	n	n	N	(%)	% removed
nonSAL	2,503,836	94.3	3,570	4,673	2,495,594	94.3	0.3
SAL	150,416	5.7	289	341	149,786	5.7	0.4
total	2,654,252	100.0	3,858	5,014	2,645,380	100.0	0.3

K.1.23 Poland

Table K.23: Regression coefficients for SAL and nonSAL households in Poland from linear model of predictors of deprivation (2018 trimmed sample for Poland explained in table below)

	SAL households coefficients	nonSAL households coefficients	coefficients difference SAL - nonSAL
	B SAL	B nonSAL	
(Constant)	12.255	7.113	5.142
HEDI as % of country median HEDI	-0.101	-0.043	-0.058
Debt repayments a heavy burden	13.178	6.509	6.669
Total housing costs a heavy burden	8.923	6.620	2.303
No non-material support	7.645	5.200	2.445
Low work intensity	6.545	8.835	-2.290
No material support	5.910	6.209	-0.299
Overcrowded household	5.372	3.854	1.518
Paying rent for accommodation	5.285	-1.160	6.445
One-person household	4.655	3.415	1.240
Single parent household with children	4.182	3.699	0.483
General bad health circumstances	3.378	5.344	-1.966
For all coefficients, $p < 0.000$			
All coefficients have relative narrow 99% confidence intervals that do not cross the zero threshold.			
$R^2 = 0.438$ for SAL households regression			
$R^2 = 0.351$ for nonSAL households regression			

unweighted sample							
	original sample		units removed		trimmed sample		
			HEDI < 0	HEDI > 5 x MHEDI			
	N	(%)	n	n	N	(%)	% removed
nonSAL	13,035	85.7	24	28	12,983	85.6	0.4
SAL	2,179	14.3	2	0	2,177	14.4	0.1
total	15,214	100.0	26	28	15,160	100.0	0.4
weighted sample							
	original sample		units removed		trimmed sample		
			HEDI < 0	HEDI > 5 x MHEDI			
	N	(%)	n	n	N	(%)	% removed
nonSAL	11,433,336	86.7	20,197	27,616	11,385,523	86.7	0.4
SAL	1,747,606	13.3	1,619	0	1,745,988	13.3	0.1
total	13,180,943	100.0	21,816	27,616	13,131,511	100.0	0.4

K.1.24 Portugal

Table K.24: Regression coefficients for SAL and nonSAL households in Portugal from linear model of predictors of deprivation (2018 trimmed sample for Portugal explained in table below)

	SAL households coefficients	nonSAL households coefficients	coefficients difference SAL - nonSAL
	B SAL	B nonSAL	
(Constant)	19.605	12.620	6.985
HEDI as % of country median HEDI	-0.093	-0.055	-0.038
Total housing costs a heavy burden	15.050	11.128	3.922
Paying rent for accommodation	10.294	6.257	4.037
Debt repayments a heavy burden	7.244	7.838	-0.594
No non-material support	5.131	6.199	-1.068
Overcrowded household	5.024	4.030	0.994
Low work intensity	4.184	6.905	-2.721
No material support	3.809	5.805	-1.996
General bad health circumstances	3.111	5.770	-2.659
One-person household	2.024	2.927	-0.903
Single parent household with children	1.772	1.904	-0.132
For all coefficients, $p < 0.000$			
All coefficients have relative narrow 99% confidence intervals that do not cross the zero threshold.			
$R^2 = 0.509$ for SAL households regression			
$R^2 = 0.440$ for nonSAL households regression			

unweighted sample							
	original sample		units removed		trimmed sample		
			HEDI < 0	HEDI > 5 x MHEDI			
	N	(%)	n	n	N	(%)	% removed
nonSAL	11,406	83.2	0	82	11,324	83.1	0.7
SAL	2,311	16.8	0	12	2,299	16.9	0.5
total	13,717	100.0	0	94	13,623	100.0	0.7
weighted sample							
	original sample		units removed		trimmed sample		
			HEDI < 0	HEDI > 5 x MHEDI			
	N	(%)	n	n	N	(%)	% removed
nonSAL	3,490,922	83.9	0	24,860	3,466,063	83.9	0.7
SAL	668,408	16.1	0	4,186	664,222	16.1	0.6
total	4,159,330	100.0	0	29,046	4,130,284	100.0	0.7

K.1.25 Romania

Table K.25: Regression coefficients for SAL and nonSAL households in Romania from linear model of predictors of deprivation (2018 trimmed sample for Romania explained in table below)

	SAL households coefficients	nonSAL households coefficients	coefficients difference SAL - nonSAL
	B SAL	B nonSAL	
(Constant)	36.347	31.370	4.977
HEDI as % of country median HEDI	-0.130	-0.111	-0.019
Total housing costs a heavy burden	17.274	14.655	2.619
Debt repayments a heavy burden	12.734	3.253	9.481
Paying rent for accommodation	11.589	-1.446	13.035
No non-material support	6.300	2.207	4.093
No material support	4.865	7.546	-2.681
Overcrowded household	3.609	1.911	1.698
Low work intensity	3.001	3.588	-0.587
General bad health circumstances	1.854	3.437	-1.583
One-person household	-1.516	0.139	-1.655
Single parent household with children	[no data]	-4.537	4.537
For all coefficients, $p < 0.000$			
All coefficients have relative narrow 99% confidence intervals that do not cross the zero threshold.			
$R^2 = 0.474$ for SAL households regression			
$R^2 = 0.440$ for nonSAL households regression			

unweighted sample							
	original sample		units removed		trimmed sample		
			HEDI < 0	HEDI > 5 x MHEDI			
	N	(%)	n	n	N	(%)	% removed
nonSAL	6,325	86.9	37	15	6,273	86.9	0.8
SAL	953	13.1	4	1	948	13.1	0.5
total	7,278	100.0	41	16	7,221	100.0	0.8
weighted sample							
	original sample		units removed		trimmed sample		
			HEDI < 0	HEDI > 5 x MHEDI			
	N	(%)	n	n	N	(%)	% removed
nonSAL	6,635,229	88.5	35,853	17,968	6,581,408	88.5	0.8
SAL	859,101	11.5	3,686	1,029	854,386	11.5	0.5
total	7,494,330	100.0	39,539	18,998	7,435,794	100.0	0.8

K.1.26 Serbia

Table K.26: Regression coefficients for SAL and nonSAL households in Serbia from linear model of predictors of deprivation (2018 trimmed sample for Serbia explained in table below)

	SAL households coefficients	nonSAL households coefficients	coefficients difference SAL - nonSAL
	B SAL	B nonSAL	
(Constant)	22.060	19.842	2.218
HEDI as % of country median HEDI	-0.135	-0.098	-0.037
Total housing costs a heavy burden	12.033	11.914	0.119
Single parent household with children	10.848	1.213	9.635
No material support	10.514	6.539	3.975
General bad health circumstances	8.980	9.694	-0.714
No non-material support	7.466	5.657	1.809
Low work intensity	4.486	4.011	0.475
One-person household	3.949	3.382	0.567
Paying rent for accommodation	3.103	-0.350	3.453
Debt repayments a heavy burden	2.838	2.396	0.442
Overcrowded household	2.523	2.456	0.067
For all coefficients, $p < 0.000$			
All coefficients have relative narrow 99% confidence intervals that do not cross the zero threshold.			
$R^2 = 0.493$ for SAL households regression			
$R^2 = 0.486$ for nonSAL households regression			

unweighted sample							
	original sample		units removed		trimmed sample		
			HEDI < 0	HEDI > 5 x MHEDI			
	N	(%)	n	n	N	(%)	% removed
nonSAL	4,695	90.1	15	16	4,664	90.1	0.7
SAL	517	9.9	5	1	511	9.9	1.2
total	5,212	100.0	20	17	5,175	100.0	0.7
weighted sample							
	original sample		units removed		trimmed sample		
			HEDI < 0	HEDI > 5 x MHEDI			
	N	(%)	n	n	N	(%)	% removed
nonSAL	2,213,697	91.0	9,067	8,109	2,196,521	91.1	0.8
SAL	217,921	9.0	3,539	267	214,115	8.9	1.7
total	2,431,618	100.0	12,606	8,376	2,410,636	100.0	0.9

K.1.27 Slovakia

Table K.27: Regression coefficients for SAL and nonSAL households in Slovakia from linear model of predictors of deprivation (2018 trimmed sample for Slovakia explained in table below)

	SAL households coefficients	nonSAL households coefficients	coefficients difference SAL - nonSAL
	B SAL	B nonSAL	
(Constant)	19.947	12.667	7.280
HEDI as % of country median HEDI	-0.130	-0.072	-0.058
Total housing costs a heavy burden	13.433	12.519	0.914
Low work intensity	7.409	16.823	-9.414
Debt repayments a heavy burden	6.642	4.277	2.365
No material support	5.791	5.101	0.690
No non-material support	3.897	2.170	1.727
General bad health circumstances	3.192	2.875	0.317
Overcrowded household	2.580	3.140	-0.560
One-person household	2.130	1.986	0.144
Paying rent for accommodation	-0.003*	1.360	-1.363
Single parent household with children	-1.692	0.900	-2.592
For all coefficients, $p < 0.000$, unless otherwise indicated.			
All coefficients have relative narrow 99% confidence intervals that do not cross the zero threshold, unless otherwise indicated.			
$R^2 = 0.505$ for SAL households regression.			
$R^2 = 0.487$ for nonSAL households regression.			
* $p = 0.974$; 99% confidence interval crosses the zero threshold.			

unweighted sample							
	original sample		units removed		trimmed sample		
			HEDI < 0	HEDI > 5 x MHEDI			
	N	(%)	n	n	N	(%)	% removed
nonSAL	4,299	75.9	5	0	4,294	75.9	0.1
SAL	1,363	24.1	0	0	1,363	24.1	0.0
total	5,662	100.0	5	0	5,657	100.0	0.1
weighted sample							
	original sample		units removed		trimmed sample		
			HEDI < 0	HEDI > 5 x MHEDI			
	N	(%)	n	n	N	(%)	% removed
nonSAL	1,499,531	81.0	2,249	0	1,497,282	80.9	0.1
SAL	352,528	19.0	0	0	352,528	19.1	0.0
total	1,852,059	100.0	2,249	0	1,849,810	100.0	0.1

K.1.28 Slovenia

Table K.28: Regression coefficients for SAL and nonSAL households in Slovenia from linear model of predictors of deprivation (2018 trimmed sample for Slovenia explained in table below)

	SAL households coefficients	nonSAL households coefficients	coefficients difference SAL - nonSAL
	B SAL	B nonSAL	
(Constant)	10.591	8.053	2.538
HEDI as % of country median HEDI	-0.077	-0.046	-0.031
Total housing costs a heavy burden	12.549	9.989	2.560
Low work intensity	8.561	7.222	1.339
Debt repayments a heavy burden	7.769	5.269	2.500
No material support	5.940	3.505	2.435
General bad health circumstances	5.733	6.303	-0.570
One-person household	4.451	2.006	2.445
Paying rent for accommodation	4.341	3.111	1.230
No non-material support	2.704	2.762	-0.058
Overcrowded household	1.434	2.617	-1.183
Single parent household with children	-4.625	2.172	-6.797
For all coefficients, $p < 0.000$			
All coefficients have relative narrow 99% confidence intervals that do not cross the zero threshold.			
$R^2 = 0.487$ for SAL households regression			
$R^2 = 0.450$ for nonSAL households regression			

unweighted sample							
	original sample		units removed		trimmed sample		
			HEDI < 0	HEDI > 5 x MHEDI			
	N	(%)	n	n	N	(%)	% removed
nonSAL	7,792	89.9	0	5	7,787	89.9	0.1
SAL	877	10.1	0	0	877	10.1	0.0
total	8,669	100.0	0	5	8,664	100.0	0.1
weighted sample							
	original sample		units removed		trimmed sample		
			HEDI < 0	HEDI > 5 x MHEDI			
	N	(%)	n	n	N	(%)	% removed
nonSAL	731,009	89.5	0	799	730,210	89.5	0.1
SAL	85,704	10.5	0	0	85,704	10.5	0.0
total	816,713	100.0	0	799	815,913	100.0	0.1

K.1.29 Spain

Table K.29: Regression coefficients for SAL and nonSAL households in Spain from linear model of predictors of deprivation (2018 trimmed sample for Spain explained in table below)

	SAL households coefficients	nonSAL households coefficients	coefficients difference SAL - nonSAL
	B SAL	B nonSAL	
(Constant)	14.109	9.741	4.368
HEDI as % of country median HEDI	-0.086	-0.058	-0.028
Single parent household with children	14.988	0.804	14.184
Total housing costs a heavy burden	11.234	10.102	1.132
Paying rent for accommodation	10.429	4.619	5.810
Overcrowded household	10.075	6.113	3.962
Low work intensity	7.780	10.912	-3.132
No material support	4.769	5.083	-0.314
Debt repayments a heavy burden	4.269	6.547	-2.278
General bad health circumstances	2.956	6.367	-3.411
No non-material support	2.364	2.945	-0.581
One-person household	1.635	1.558	0.077
For all coefficients, $p < 0.000$			
All coefficients have relative narrow 99% confidence intervals that do not cross the zero threshold.			
$R^2 = 0.445$ for SAL households regression			
$R^2 = 0.427$ for nonSAL households regression			

unweighted sample							
	original sample		units removed		trimmed sample		
			HEDI < 0	HEDI > 5 x MHEDI			
	N	(%)	n	n	N	(%)	% removed
nonSAL	12,192	91.2	21	57	12,114	91.2	0.6
SAL	1,176	8.8	3	1	1,172	8.8	0.3
total	13,368	100.0	24	58	13,286	100.0	0.6
weighted sample							
	original sample		units removed		trimmed sample		
			HEDI < 0	HEDI > 5 x MHEDI			
	N	(%)	n	n	N	(%)	% removed
nonSAL	16,982,553	91.6	35,724	77,834	16,868,995	91.6	0.7
SAL	1,563,393	8.4	6,694	1,008	1,555,691	8.4	0.5
total	18,545,946	100.0	42,418	78,842	18,424,686	100.0	0.7

K.1.30 Sweden

Table K.30: Regression coefficients for SAL and nonSAL households in Sweden from linear model of predictors of deprivation (2018 trimmed sample for Sweden explained in table below)

	SAL households coefficients	nonSAL households coefficients	coefficients difference SAL - nonSAL
	B SAL	B nonSAL	
(Constant)	3.669	3.075	0.594
HEDI as % of country median HEDI	-0.011	-0.015	0.004
Debt repayments a heavy burden	17.039	14.320	2.719
Total housing costs a heavy burden	10.932	10.175	0.757
Low work intensity	5.831	6.893	-1.062
Overcrowded household	4.050	1.472	2.578
Single parent household with children	3.003	1.250	1.753
No material support	2.893	4.309	-1.416
General bad health circumstances	2.341	2.519	-0.178
Paying rent for accommodation	1.022	1.962	-0.940
One-person household	0.236	0.019*	0.217
No non-material support	-2.114	5.245	-7.359
For all coefficients, $p < 0.000$, unless otherwise indicated.			
All coefficients have relative narrow 99% confidence intervals that do not cross the zero threshold.			
$R^2 = 0.677$ for SAL households regression.			
$R^2 = 0.516$ for nonSAL households regression.			
* $p = 0.003$.			

unweighted sample							
	original sample		units removed		trimmed sample		
			HEDI < 0	HEDI > 5 x MHEDI			
	N	(%)	n	n	N	(%)	% removed
nonSAL	5,597	96.0	15	12	5,570	96.0	0.5
SAL	234	4.0	0	0	234	4.0	0.0
total	5,831	100.0	15	12	5,804	100.0	0.5
weighted sample							
	original sample		units removed		trimmed sample		
			HEDI < 0	HEDI > 5 x MHEDI			
	N	(%)	n	n	N	(%)	% removed
nonSAL	4,696,233	95.1	18,012	11,490	4,666,731	95.1	0.6
SAL	242,231	4.9	0	0	242,231	4.9	0.0
total	4,938,464	100.0	18,012	11,490	4,908,962	100.0	0.6

K.1.31 Switzerland

Table K.31: Regression coefficients for SAL and nonSAL households in Switzerland from linear model of predictors of deprivation (2018 trimmed sample for Switzerland explained in table below)

	SAL households coefficients	nonSAL households coefficients	coefficients difference SAL - nonSAL
	B SAL	B nonSAL	
(Constant)	3.624	4.331	-0.707
HEDI as % of country median HEDI	-0.043	-0.029	-0.014
Debt repayments a heavy burden	13.633	11.439	2.194
Total housing costs a heavy burden	11.398	5.003	6.395
Low work intensity	10.467	6.267	4.200
Overcrowded household	7.683	2.371*	5.312
No material support	5.524	2.910	2.614
Single parent household with children	4.656	3.555	1.101
One-person household	3.824	0.012	3.812
General bad health circumstances	3.138	7.210	-4.072
Paying rent for accommodation	2.839	2.963	-0.124
No non-material support	1.682	1.683	-0.001
For all coefficients, $p < 0.000$, unless otherwise indicated.			
All coefficients have relative narrow 99% confidence intervals that do not cross the zero threshold, unless otherwise indicated.			
$R^2 = 0.542$ for SAL households regression.			
$R^2 = 0.307$ for nonSAL households regression.			
* $p = 0.209$; 99% confidence interval crosses the zero threshold.			

unweighted sample							
	original sample		units removed		trimmed sample		
			HEDI < 0	HEDI > 5 x MHEDI			
	N	(%)	n	n	N	(%)	% removed
nonSAL	6,091	91.2	6	33	6,052	91.1	0.6
SAL	589	8.8	0	1	588	8.9	0.2
total	6,680	100.0	6	34	6,640	100.0	0.6
weighted sample							
	original sample		units removed		trimmed sample		
			HEDI < 0	HEDI > 5 x MHEDI			
	N	(%)	n	n	N	(%)	% removed
nonSAL	3,446,236	90.1	7,359	23,450	3,415,427	90.0	0.9
SAL	378,417	9.9	0	528	377,890	10.0	0.1
total	3,824,653	100.0	7,359	23,978	3,793,316	100.0	0.8

K.1.32 United Kingdom

Table K.32: Regression coefficients for SAL and nonSAL households in the UK from linear model of predictors of deprivation (2018 trimmed sample for the UK explained in table below)

	SAL households coefficients	nonSAL households coefficients	coefficients difference SAL - nonSAL
	B SAL	B nonSAL	
(Constant)	6.176	4.934	1.242
HEDI as % of country median HEDI	-0.033	-0.019	-0.014
Total housing costs a heavy burden	15.190	11.036	4.154
Debt repayments a heavy burden	10.686	7.783	2.903
Paying rent for accommodation	8.203	6.054	2.149
Low work intensity	6.023	6.795	-0.772
No material support	4.680	2.294	2.386
Overcrowded household	4.352	4.697	-0.345
General bad health circumstances	2.164	2.724	-0.560
Single parent household with children	2.155	6.155	-4.000
No non-material support	2.120	2.274	-0.154
One-person household	-0.036*	0.392	-0.428
For all coefficients, $p < 0.000$, unless otherwise indicated.			
All coefficients have relative narrow 99% confidence intervals that do not cross the zero threshold, unless otherwise indicated.			
$R^2 = 0.560$ for SAL households regression.			
$R^2 = 0.478$ for nonSAL households regression.			
* $p = 0.007$; 99% confidence interval crosses the zero threshold.			

unweighted sample							
	original sample		units removed		trimmed sample		
			HEDI < 0	HEDI > 5 x MHEDI			
	N	(%)	n	n	N	(%)	% removed
nonSAL	13,605	79.5	96	110	13,399	79.3	1.5
SAL	3,508	20.5	12	6	3,490	20.7	0.5
total	17,113	100.0	108	116	16,889	100.0	1.3
weighted sample							
	original sample		units removed		trimmed sample		
			HEDI < 0	HEDI > 5 x MHEDI			
	N	(%)	n	n	N	(%)	% removed
nonSAL	22,852,034	81.0	160,567	190,549	22,500,918	80.9	1.5
SAL	5,348,248	19.0	18,173	9,416	5,320,659	19.1	0.5
total	28,200,282	100.0	178,739	199,965	27,821,577	100.0	1.3

K.2 Predicted deprivation scores for SAL and nonSAL households

Table K.33: Difference in SAL and nonSAL households' predicted deprivation scores at four different income scenarios

	difference in predicted scores at different income scenarios*			
	no income	50% of MHEDI	MHEDI	150% x MHEDI
Bulgaria	-6.1	-6.6	-7.2	-7.7
Norway	-5.3	-6.9	-8.5	-10.1
Sweden	-2.3	-2.1	-1.9	-1.7
Latvia	-1.8	-3.1	-4.3	-5.6
Malta	-0.5	-0.8	-1.1	-1.4
Slovakia	-0.5	-3.4	-6.3	-9.2
Italy	-0.3	-1.6	-2.9	-4.2
Netherlands	1.9	0.8	-0.3	-1.4
Czech Republic	3.2	1.7	0.1	-1.4
Finland	4.4	4.1	3.8	3.5
Ireland	4.9	5.1	5.4	5.6
France	5.0	2.7	0.4	-1.9
Belgium	5.2	3.9	2.6	1.3
Denmark	5.3	3.6	1.9	0.2
Portugal	5.9	4.0	2.1	0.2
Slovenia	6.4	4.9	3.3	1.8
Greece	6.5	5.8	5.1	4.4
United Kingdom	6.6	5.9	5.2	4.5
Germany	7.6	4.5	1.5	-1.6
Croatia	8.2	5.3	2.5	-0.4
Lithuania	8.2	8.2	8.2	8.2
Hungary	13.9	11.6	9.3	7.0
Austria	14.1	12.5	10.9	9.3
Estonia	14.5	13.3	12.1	10.9
Iceland	17.5	16.8	16.1	15.4
Spain	19.8	18.4	17.0	15.6
Switzerland	20.7	20.0	19.3	18.6
Luxembourg	20.8	20.0	19.2	18.4
Poland	21.7	18.8	15.9	13.0
Serbia	22.0	20.2	18.3	16.5
Cyprus	23.5	20.4	17.2	14.1
Romania	33.9	33.0	32.0	31.1

*SAL predicted score – nonSAL predicted score

K.3 Income and housing interaction

Table K.34: Linear interaction model of predictors of deprivation in SAL households(2018)

	unstandardised coefficients		standardised coefficients	t	99.0% confidence interval for B	
	B	std. error	Beta		Lower Bound	Upper Bound
(Constant)	10.121	0.010		1018.860	10.096	10.147
HEDI as % of country median HEDI	-0.059	0.000	-0.157	-845.970	-0.059	-0.059
HEDI x Burden of housing costs	-0.078	0.000	-0.199	-624.731	-0.079	-0.078
Total housing costs a heavy burden	20.687	0.013	0.536	1648.800	20.654	20.719
Debt repayments a heavy burden	8.322	0.011	0.118	776.406	8.294	8.350
Overcrowded household	5.816	0.009	0.100	668.426	5.794	5.838
Low work intensity	5.692	0.008	0.115	727.000	5.672	5.712
No non-material support	4.659	0.009	0.091	525.776	4.636	4.682
No material support	4.325	0.007	0.107	616.091	4.307	4.343
General bad health circumstances	3.851	0.006	0.097	652.681	3.836	3.866
Paying rent for accommodation	3.531	0.006	0.087	550.086	3.514	3.547
Single parent household with children	3.361	0.018	0.029	189.038	3.316	3.407
One-person household	2.098	0.006	0.053	339.710	2.082	2.114
For all coefficients, $p < 0.000$						
$R^2 = 0.443$						

Table K.35: Linear interaction model of predictors of deprivation in nonSAL households(2018)

	unstandardised coefficients		standardised coefficients	t	99.0% confidence interval for B	
	B	std. error	Beta		Lower Bound	Upper Bound
(Constant)	7.186	0.002		2950.280	7.180	7.193
HEDI as % of country median HEDI	-0.032	0.000	-0.143	-2154.575	-0.032	-0.032
HEDI x Burden of housing costs	-0.076	0.000	-0.258	-2295.947	-0.076	-0.076
Total housing costs a heavy burden	18.216	0.004	0.547	4740.611	18.206	18.226
Low work intensity	8.111	0.003	0.137	2335.117	8.102	8.120
Debt repayments a heavy burden	7.559	0.004	0.113	1958.144	7.549	7.569
General bad health circumstances	5.606	0.003	0.097	1688.379	5.598	5.615
No non-material support	4.777	0.003	0.096	1427.325	4.769	4.786
Overcrowded household	4.515	0.003	0.101	1756.656	4.508	4.522
No material support	3.973	0.002	0.109	1619.571	3.966	3.979
Single parent household with children	2.402	0.004	0.033	574.955	2.391	2.413
Paying rent for accommodation	1.855	0.002	0.058	985.287	1.851	1.860
One-person household	1.449	0.002	0.047	792.307	1.445	1.454
For all coefficients, $p < 0.000$						
$R^2 = 0.398$						

K.4 Predicting deprivation scores in three income scenarios for households burdened with the total cost of housing

K.4.1 SAL households burdened with their total cost of housing

Table K.36: Predicted scores of deprivation for SAL households burdened with housing costs using the interaction model

	50% of MHEDI	MHEDI	150% of MHEDI
constant	10.121	10.121	10.121
Income coefficient	-2.95	-5.9	-8.85
Housing burden	20.687	20.687	20.687
Interaction	-3.9	-7.8	-11.7
	23.958	17.108	10.258

Table K.37: Predicted scores of deprivation for SAL households burdened with housing costs using the non-interaction model

	50% of MHEDI	MHEDI	150% of MHEDI
constant	12.297	12.297	12.297
Income coefficient	-4.05	-8.1	-12.15
Housing burden	13.81	13.81	13.81
	22.057	18.007	13.957

K.4.2 SAL households not burdened with their total cost of housing

Table K.38: Predicted scores of deprivation for SAL households not burdened with housing costs using the interaction model

	50% of MHEDI	MHEDI	150% of MHEDI
constant	10.121	10.121	10.121
Income coefficient	-2.95	-5.9	-8.85
Housing burden	0	0	0
Interaction	0	0	0
	7.171	4.221	1.271

Table K.39: Predicted scores of deprivation for SAL households not burdened with housing costs using the non interaction model

	50% of MHEDI	MHEDI	150% of MHEDI
constant	12.297	12.297	12.297
Income coefficient	-4.05	-8.1	-12.15
Housing burden	0	0	0
	8.247	4.197	0.147

K.4.3 nonSAL households burdened with their total cost of housing

Table K.40: Predicted scores of deprivation for nonSAL households burdened with housing costs using the interaction model

	50% of MHEDI	MHEDI	150% of MHEDI
constant	7.186	7.186	7.168
Income coefficient	-1.6	-3.2	-4.8
Housing burden	18.216	18.216	18.216
Interaction	-3.8	-7.6	-11.4
	20.002	14.602	9.184

Table K.41: Predicted scores of deprivation for nonSAL households burdened with housing costs using the non interaction model

	50% of MHEDI	MHEDI	150% of MHEDI
constant	8.832	8.832	8.832
Income coefficient	-2.3	-4.6	-6.9
Housing burden	10.661	10.661	10.661
	17.193	14.893	12.593

K.4.4 nonSAL households not burdened with their total cost of housing

Table K.42: Predicted scores of deprivation for nonSAL households not burdened with housing costs using the interaction model

	50% of MHEDI	MHEDI	150% of MHEDI
constant	7.186	7.186	7.168
Income coefficient	-1.6	-3.2	-4.8
Housing burden	0	0	0
Interaction	0	0	0
	5.586	3.986	2.368

Table K.43: Predicted scores of deprivation for nonSAL households not burdened with housing costs using the non interaction model

	50% of MHEDI	MHEDI	150% of MHEDI
constant	8.832	8.832	8.832
Income coefficient	-2.3	-4.6	-6.9
Housing burden	0	0	0
	6.532	4.232	1.932

K.5 Summary of SAL and nonSAL households coefficients from country regression analysis using Models-4

K.5.1 Austria

Table K.44: Models-4 regression analysis coefficients for SAL and nonSAL households (Austria)

	SAL households coefficients	nonSAL households coefficients	coefficients difference SAL - nonSAL
	B SAL	B nonSAL	
(Constant)	6.58	1.92	4.66
HEDI as % of country median HEDI (MHEDI)	-0.05	-0.02	-0.03
HEDI as % MHEDI x Housing cost overburden (40%)	-0.18	-0.04	-0.14
Housing cost overburden (40%)	10.03	3.19	6.84
Total housing costs subjective heavy burden	14.84	11.33	3.51
Debt repayments a heavy burden	9.58	10.33	-0.74
Low work intensity	5.41	4.98	0.43
Overcrowded household	7.93	3.25	4.68
No non-material support	4.68	2.96	1.72
No material support	1.72	2.06	-0.34
General bad health circumstances	2.07	5.14	-3.07
Sex (ref: male)			
female	2.43	0.63	1.81
Age (ref: 50-64)			
16-34	0.24	-0.83	1.07
35-49	0.29	-0.84	1.13
65-72	0.89	-0.57	1.46
73+	-1.78	-1.29	-0.50
Education (ref: tertiary education)			
primary or lower vs tertiary	1.58	9.11	-7.54
lower secondary vs tertiary	-0.67	1.75	-2.42
upper secondary & post-secondary non-tertiary	-0.82	0.69	-1.51
Activity status (ref: at work)			
unemployed	8.05	9.70	-1.65
in retirement or early retirement	-0.24	-0.13	-0.11
other inactive person	4.21	1.93	2.28
Tenure (ref: outright owner)			
owner paying mortgage	1.03	0.69	0.34
accommodation rented at prevailing or market rate	3.77	2.89	0.89
accommodation rented at a reduced rate	1.88	2.08	-0.19
accommodation provided free	0.97	0.72	0.26
Household structure (ref: 2 adults no children)			
single person no children	2.01	1.27	0.74
other households no children	-0.26	-0.86	0.60
2 adults 1 or 2 children	-1.54	0.33	-1.87
2 adults 3 or more children	-0.43	1.57	-2.00
single parent with 1 or more children	1.63	2.02	-0.39
other households with children	-3.60	0.94	-4.54
other households not classified	-	-	-
*Not significant; for all other coefficients p < 0.001 (unless otherwise indicated)			
R² = 0.656 for SAL households regression.			
R² = 0.475 for nonSAL households regression.			

K.5.2 Belgium

Table K.45: Models-4 regression analysis coefficients for SAL and nonSAL households (Belgium)

	SAL households coefficients	nonSAL households coefficients	coefficients difference SAL - nonSAL
	B SAL	B nonSAL	
(Constant)	7.08	2.39	4.69
HEDI as % of country median HEDI (MHEDI)	-0.06	-0.02	-0.03
HEDI as % MHEDI x Housing cost overburden (40%)	-0.12	-0.10	-0.01
Housing cost overburden (40%)	7.11	10.45	-3.33
Total housing costs subjective heavy burden	12.48	8.84	3.64
Debt repayments a heavy burden	7.67	5.33	2.34
Low work intensity	3.15	8.26	-5.11
Overcrowded household	3.73	4.46	-0.74
No non-material support	1.98	1.89	0.10
No material support	7.08	3.83	3.26
General bad health circumstances	3.53	4.16	-0.63
Sex (ref: male)			
female	1.96	0.84	1.13
Age (ref: 50-64)			
16-34	0.05*	0.30	-0.26
35-49	-2.47	0.17	-2.64
65-72	-2.18	0.08	-2.26
73+	-4.84	-1.56	-3.28
Education (ref: tertiary education)			
primary or lower vs tertiary	2.34	3.78	-1.44
lower secondary vs tertiary	-0.59	2.71	-3.30
upper secondary & post-secondary non-tertiary	1.27	1.36	-0.08
Activity status (ref: at work)			
unemployed	5.66	6.30	-0.64
in retirement or early retirement	-0.58	-0.76	0.18
other inactive person	1.78	5.95	-4.18
Tenure (ref: outright owner)			
owner paying mortgage	-1.50	0.13	-1.63
accommodation rented at prevailing or market rate	7.79	3.83	3.96
accommodation rented at a reduced rate	9.16	8.33	0.83
accommodation provided free	4.08	1.23	2.85
Household structure (ref: 2 adults no children)			
single person no children	2.49	1.50	0.99
other households no children	-0.70	0.85	-1.55
2 adults 1 or 2 children	0.80	0.35	0.44
2 adults 3 or more children	10.33	0.74	9.60
single parent with 1 or more children	4.17	3.52	0.66
other households with children	2.69	-0.11	2.80
other households not classified	0.22	-2.62	2.84
*Not significant; for all other coefficients $p < 0.001$ (unless otherwise indicated)			
R² = 0.592 for SAL households regression.			
R² = 0.578 for nonSAL households regression.			

K.5.3 Bulgaria

Table K.46: Models-4 regression analysis coefficients for SAL and nonSAL households (Bulgaria)

	SAL households coefficients	nonSAL households coefficients	coefficients difference SAL - nonSAL
	B SAL	B nonSAL	
(Constant)	26.78	20.27	6.51
HEDI as % of country median HEDI (MHEDI)	-0.09	-0.07	-0.02
HEDI as % MHEDI x Housing cost overburden (40%)	-0.10	-0.08	-0.02
Housing cost overburden (40%)	4.09*	6.47	-2.37
Total housing costs subjective heavy burden	13.89	12.56	1.32
Debt repayments a heavy burden	9.38	9.43	-0.05
Low work intensity	8.28	5.91	2.37
Overcrowded household	4.49	3.51	0.98
No non-material support	3.94	3.29	0.65
No material support	2.56	3.58	-1.02
General bad health circumstances	1.72	4.16	-2.44
Sex (ref: male)			
female	2.55	1.19	1.36
Age (ref: 50-64)			
16-34	-8.34	-2.71	-5.63
35-49	-0.96	-2.48	1.52
65-72	2.91	1.39	1.51
73+	-1.84	-1.46	-0.38
Education (ref: tertiary education)			
primary or lower vs tertiary	10.40	17.67	-7.27
lower secondary vs tertiary	7.02	9.58	-2.56
upper secondary & post-secondary non-tertiary	3.42	2.86	0.56
Activity status (ref: at work)			
unemployed	8.66	9.16	-0.50
in retirement or early retirement	-1.41	0.74	-2.15
other inactive person	1.26*	3.79	-2.52
Tenure (ref: outright owner)			
owner paying mortgage	3.17	-0.55	3.72
accommodation rented at prevailing or market rate	5.79	-1.44	7.23
accommodation rented at a reduced rate	2.78	5.68	-2.91
accommodation provided free	-0.05	-0.85	0.80
Household structure (ref: 2 adults no children)			
single person no children	-1.09	3.45	-4.54
other households no children	1.62	-2.29	3.91
2 adults 1 or 2 children	-9.07	-3.31	-5.76
2 adults 3 or more children	2.23	1.33	0.90
single parent with 1 or more children	5.58	1.61	3.98
other households with children	-6.04	-3.36	-2.68
other households not classified	-	-1.64	-
*Not significant; for all other coefficients $p < 0.001$ (unless otherwise indicated)			
R² = 0.489 for SAL households regression.			
R² = 0.562 for nonSAL households regression.			

K.5.4 Croatia

Table K.47: Models-4 regression analysis coefficients for SAL and nonSAL households (Croatia)

	SAL households coefficients	nonSAL households coefficients	coefficients difference SAL - nonSAL
	B SAL	B nonSAL	
(Constant)	15.92	10.13	5.79
HEDI as % of country median HEDI (MHEDI)	-0.09	-0.05	-0.04
HEDI as % MHEDI x Housing cost overburden (40%)	-0.05	-0.02	-0.03
Housing cost overburden (40%)	2.76	2.53	0.23
Total housing costs subjective heavy burden	9.79	9.57	0.22
Debt repayments a heavy burden	3.42	2.74	0.67
Low work intensity	3.40	2.83	0.57
Overcrowded household	1.26	1.69	-0.43
No non-material support	5.94	5.98	-0.04
No material support	8.85	4.89	3.97
General bad health circumstances	2.93	3.08	-0.15
Sex (ref: male)			
female	0.64	0.28	0.36
Age (ref: 50-64)			
16-34	0.99 (p = 0.001)	-1.03*	2.02
35-49	-0.53	-0.90	0.37
65-72	0.07*	-1.23	1.30
73+	-1.28	-2.84	1.56
Education (ref: tertiary education)			
primary or lower vs tertiary	6.98	6.80	0.18
lower secondary vs tertiary	3.00	4.88	-1.88
upper secondary & post-secondary non-tertiary	1.07	1.06	0.01
Activity status (ref: at work)			
unemployed	4.14	5.22	-1.07
in retirement or early retirement	-2.89	-0.32	-2.57
other inactive person	8.42	1.36	7.06
Tenure (ref: outright owner)			
owner paying mortgage	-0.35*	2.09	-2.45
accommodation rented at prevailing or market rate	7.72	-2.70	10.43
accommodation rented at a reduced rate	6.88	6.29	0.60
accommodation provided free	4.91	1.14	3.77
Household structure (ref: 2 adults no children)			
single person no children	2.25	2.76	-0.52
other households no children	-0.03*	-0.09(p = 0.009)	0.06
2 adults 1 or 2 children	-2.55	-2.01	-0.54
2 adults 3 or more children	-4.48	-0.45	-4.03
single parent with 1 or more children	-2.94	3.16	-6.10
other households with children	-2.92	-2.50	-0.43
other households not classified	-	-	-
*Not significant; for all other coefficients p < 0.001 (unless otherwise indicated)			
R² = 0.525 for SAL households regression.			
R² = 0.508 for nonSAL households regression.			

K.5.5 Cyprus

Table K.48: Models-4 regression analysis coefficients for SAL and nonSAL households (Cyprus)

	SAL households coefficients	nonSAL households coefficients	coefficients difference SAL - nonSAL
	B SAL	B nonSAL	
(Constant)	21.20	8.35	12.86
HEDI as % of country median HEDI (MHEDI)	-0.13	-0.05	-0.07
HEDI as % MHEDI x Housing cost overburden (40%)	-0.13	-0.03	-0.10
Housing cost overburden (40%)	8.56	1.20	7.35
Total housing costs subjective heavy burden	7.01	6.24	0.77
Debt repayments a heavy burden	8.31	5.75	2.57
Low work intensity	-1.07	7.38	-8.44
Overcrowded household	3.268	5.61	-2.36
No non-material support	1.18	0.95	0.23
No material support	4.118	2.62	1.49
General bad health circumstances	1.18	3.92	-2.74
Sex (ref: male)			
female	1.368	2.23	-0.87
Age (ref: 50-64)			
16-34	3.04	0.31	2.73
35-49	-3.00	0.36	-3.36
65-72	-0.27*	0.74	-1.01
73+	-3.64	-1.54	-2.10
Education (ref: tertiary education)		*	
primary or lower vs tertiary	3.68	5.47	-1.79
lower secondary vs tertiary	1.97	4.85	-2.88
upper secondary & post-secondary non-tertiary	2.47	3.00	-0.54
Activity status (ref: at work)			
unemployed	2.74	8.36	-5.61
in retirement or early retirement	-4.87	-2.34	-2.53
other inactive person	6.79	0.94	5.85
Tenure (ref: outright owner)			
owner paying mortgage	3.71	2.21	1.50
accommodation rented at prevailing or market rate	6.45	3.47	2.99
accommodation rented at a reduced rate	8.90	9.84	-0.94
accommodation provided free	2.49	2.61	-0.12
Household structure (ref: 2 adults no children)			
single person no children	1.30	-0.38	1.67
other households no children	1.11	1.17	-0.06
2 adults 1 or 2 children	1.26	0.79	0.46
2 adults 3 or more children	-0.83*	2.47	-3.30
single parent with 1 or more children	13.55	3.47	10.08
other households with children	3.23	2.96	0.27
other households not classified	-	-	-
*Not significant; for all other coefficients $p < 0.001$ (unless otherwise indicated)			
R² = 0.564 for SAL households regression.			
R² = 0.508 for nonSAL households regression.			

K.5.6 Czech Republic

Table K.49: Models-4 regression analysis coefficients for SAL and nonSAL households (Czech Republic)

	SAL households coefficients	nonSAL households coefficients	coefficients difference SAL - nonSAL
	B SAL	B nonSAL	
(Constant)	9.12	5.38	3.74
HEDI as % of country median HEDI (MHEDI)	-0.05	-0.03	-0.02
HEDI as % MHEDI x Housing cost overburden (40%)	-0.20	-0.05	-0.15
Housing cost overburden (40%)	13.85	4.97	8.89
Total housing costs subjective heavy burden	11.65	10.33	1.31
Debt repayments a heavy burden	4.54	6.57	-2.04
Low work intensity	2.05	4.93	-2.88
Overcrowded household	4.30	1.66	2.64
No non-material support	0.58	2.26	-1.68
No material support	4.83	5.37	-0.54
General bad health circumstances	1.67	2.91	-1.25
Sex (ref: male)			
female	3.53	1.56	1.97
Age (ref: 50-64)			
16-34	0.17*	0.07	0.10
35-49	-1.47	0.04	-1.51
65-72	0.08*	0.07	0.01
73+	-2.06	-0.59	-1.47
Education (ref: tertiary education)			
primary or lower vs tertiary	11.85	-	-
lower secondary vs tertiary	7.64	5.10	2.54
upper secondary & post-secondary non-tertiary	3.85	1.25	2.60
Activity status (ref: at work)			
unemployed	1.80	7.39	-5.59
in retirement or early retirement	-3.05	0.21	-3.26
other inactive person	-1.09	1.81	-2.9
Tenure (ref: outright owner)			
owner paying mortgage	-	0.47	-
accommodation rented at prevailing or market rate	-1.16	2.86	-4.02
accommodation rented at a reduced rate	3.17	2.90	0.27
accommodation provided free	1.10	-0.38	1.48
Household structure (ref: 2 adults no children)			
single person no children	1.04	0.40	0.64
other households no children	-2.73	-0.08	-2.65
2 adults 1 or 2 children	1.44	-1.07	2.51
2 adults 3 or more children	2.34	-0.62	2.96
single parent with 1 or more children	0.62	0.21	0.41
other households with children	-0.94	0.02*	-0.96
other households not classified	-	-	-
*Not significant; for all other coefficients $p < 0.001$ (unless otherwise indicated)			
R² = 0.481 for SAL households regression.			
R² = 0.437 for nonSAL households regression.			

K.5.7 Denmark

Table K.50: Models-4 regression analysis coefficients for SAL and nonSAL households (Denmark)

	SAL households coefficients	nonSAL households coefficients	coefficients difference SAL - nonSAL
	B SAL	B nonSAL	
(Constant)	9.60	3.96	5.64
HEDI as % of country median HEDI (MHEDI)	-0.06	-0.02	-0.03
HEDI as % MHEDI x Housing cost overburden (40%)	0.00*	-0.07	0.07
Housing cost overburden (40%)	1.27	5.73	-4.45
Total housing costs subjective heavy burden	16.65	10.48	6.17
Debt repayments a heavy burden	18.28	17.34	0.94
Low work intensity	0.94	1.86	-0.92
Overcrowded household	-2.81	0.70	-3.51
No non-material support	-0.63	2.65	-3.28
No material support	6.25	3.69	2.56
General bad health circumstances	1.24	4.28	-3.04
Sex (ref: male)			
female	2.78	0.80	1.98
Age (ref: 50-64)			
16-34	-2.19	0.36	-2.55
35-49	3.12	-0.05	3.17
65-72	-6.34	-1.90	-4.44
73+	-7.10	-2.87	-4.22
Education (ref: tertiary education)			
primary or lower vs tertiary	-3.05	0.59	-3.64
lower secondary vs tertiary	0.09*	1.37	-1.28
upper secondary & post-secondary non-tertiary	-2.08	-0.04	-2.04
Activity status (ref: at work)			
unemployed	6.04	4.04	1.99
in retirement or early retirement	2.14	0.06 (p=0.005)	2.08
other inactive person	14.73	2.48	12.25
Tenure (ref: outright owner)			
owner paying mortgage	0.22*	0.48	-0.26
accommodation rented at prevailing or market rate	1.53	3.76	-2.23
accommodation rented at a reduced rate	-	-	-
accommodation provided free	-	7.71	-
Household structure (ref: 2 adults no children)			
single person no children	2.31	0.14	2.17
other households no children	11.26	0.33	10.93
2 adults 1 or 2 children	-2.13	0.11	-2.24
2 adults 3 or more children	-8.77	0.74	-9.51
single parent with 1 or more children	-1.60	3.46	-5.06
other households with children	-12.21	-0.44	-11.77
other households not classified	-	-	-
*Not significant; for all other coefficients p < 0.001 (unless otherwise indicated)			
R² = 0.691 for SAL households regression.			
R² = 0.467 for nonSAL households regression.			

K.5.8 Estonia

Table K.51: Models-4 regression analysis coefficients for SAL and nonSAL households (Estonia)

	SAL households coefficients	nonSAL households coefficients	coefficients difference SAL - nonSAL
	B SAL	B nonSAL	
(Constant)	12.26	7.12	5.14
HEDI as % of country median HEDI (MHEDI)	-0.06	-0.03	-0.03
HEDI as % MHEDI x Housing cost overburden (40%)	0.07	0.03	0.04
Housing cost overburden (40%)	-3.16	-2.12	-1.04
Total housing costs subjective heavy burden	11.39	12.46	-1.08
Debt repayments a heavy burden	13.15	6.24	6.90
Low work intensity	6.29	6.63	-0.34
Overcrowded household	4.61	2.84	1.77
No non-material support	3.88	4.38	-0.50
No material support	6.27	4.13	2.14
General bad health circumstances	1.57	3.78	-2.21
Sex (ref: male)			
female	0.22	0.99	-0.77
Age (ref: 50-64)			
16-34	-1.55	-2.13	0.59
35-49	-2.85	-0.71	-2.13
65-72	-0.74	-2.43	1.69
73+	-4.20	-4.70	0.49
Education (ref: tertiary education)			
primary or lower vs tertiary	3.09	4.06	-0.97
lower secondary vs tertiary	3.27	4.30	-1.04
upper secondary & post-secondary non-tertiary	-0.33	1.61	-1.94
Activity status (ref: at work)			
unemployed	11.96	3.62	8.34
in retirement or early retirement	2.54	2.64	-0.10
other inactive person	4.46	3.17	1.29
Tenure (ref: outright owner)			
owner paying mortgage	3.16	0.44	2.72
accommodation rented at prevailing or market rate	-1.11	-1.31	0.20
accommodation rented at a reduced rate	4.76	2.26	2.51
accommodation provided free	1.34	1.41	-0.07
Household structure (ref: 2 adults no children)			
single person no children	2.39	1.88	0.51
other households no children	1.82	0.88	0.94
2 adults 1 or 2 children	1.76	-0.73	2.49
2 adults 3 or more children	-3.12	-0.67	-2.45
single parent with 1 or more children	3.20	2.62	0.58
other households with children	0.64 (p=0.002)	-0.26	0.90
other households not classified	-9.403	-1.297	-8.106-
*Not significant; for all other coefficients p < 0.001 (unless otherwise indicated)			
R² = 0.430 for SAL households regression.			
R² = 0.435 for nonSAL households regression.			

K.5.9 Finland

Table K.52: Models-4 regression analysis coefficients for SAL and nonSAL households (Finland)

	SAL households coefficients	nonSAL households coefficients	coefficients difference SAL - nonSAL
	B SAL	B nonSAL	
(Constant)	5.71	1.11	4.60
HEDI as % of country median HEDI (MHEDI)	-0.06	-0.02	-0.04
HEDI as % MHEDI x Housing cost overburden (40%)	0.12	0.00	0.11
Housing cost overburden (40%)	-9.59	-0.21	-9.38
Total housing costs subjective heavy burden	8.01	5.75	2.27
Debt repayments a heavy burden	12.12	8.68	3.44
Low work intensity	1.64	6.98	-5.34
Overcrowded household	-3.29	0.17	-3.46
No non-material support	0.21 (p=0.017)	4.19	-3.99
No material support	4.67	3.31	1.36
General bad health circumstances	3.31	3.74	-0.43
Sex (ref: male)			
female	2.27	1.23	1.03
Age (ref: 50-64)			
16-34	4.34	-0.71	5.05
35-49	4.34	-0.25	4.59
65-72	-5.03	-0.63	-4.40
73+	-7.34	-1.84	-5.50
Education (ref: tertiary education)			
primary or lower vs tertiary	-	-	-
lower secondary vs tertiary	3.08	1.69	1.40
upper secondary & post-secondary non-tertiary	-1.68	1.65	-3.33
Activity status (ref: at work)			
unemployed	8.58	4.71	3.87
in retirement or early retirement	2.74	0.26	2.48
other inactive person	4.68	0.37	4.31
Tenure (ref: outright owner)			
owner paying mortgage	1.31	1.47	-0.15
accommodation rented at prevailing or market rate	2.05	3.82	-1.76
accommodation rented at a reduced rate	5.11	4.35	0.76
accommodation provided free	-2.91	5.88	-8.79
Household structure (ref: 2 adults no children)			
single person no children	3.41	1.55	1.86
other households no children	-1.33	0.15	-1.48
2 adults 1 or 2 children	0.11*	0.35	-0.24
2 adults 3 or more children	-0.79	-0.31	-0.48
single parent with 1 or more children	-0.21*	2.36	-2.56
other households with children	7.02	0.35	6.67
other households not classified	-	-	-
*Not significant; for all other coefficients p < 0.001 (unless otherwise indicated)			
R² = 0.565 for SAL households regression.			
R² = 0.417 for nonSAL households regression.			

K.5.10 France

Table K.53: Models-4 regression analysis coefficients for SAL and nonSAL households (France)

	SAL households coefficients	nonSAL households coefficients	coefficients difference SAL - nonSAL
	B SAL	B nonSAL	
(Constant)	6.37	2.94	3.43
HEDI as % of country median HEDI (MHEDI)	-0.07	-0.03	-0.04
HEDI as % MHEDI x Housing cost overburden (40%)	-0.08	-0.06	-0.03
Housing cost overburden (40%)	5.57	5.81	-0.24
Total housing costs subjective heavy burden	11.77	8.83	2.94
Debt repayments a heavy burden	6.62	7.99	-1.37
Low work intensity	2.86	7.29	-4.42
Overcrowded household	1.13	4.28	-3.15
No non-material support	4.03	3.97	0.07
No material support	3.73	4.25	-0.52
General bad health circumstances	3.88	3.87	0.01
Sex (ref: male)			
female	2.49	2.85	-0.36
Age (ref: 50-64)			
16-34	1.89	-1.48	3.37
35-49	1.75	-0.20	1.95
65-72	-1.81	0.00	-1.80*
73+	-5.36	-0.81	-4.55
Education (ref: tertiary education)			
primary or lower vs tertiary	6.88	5.13	1.76
lower secondary vs tertiary	4.59	3.52	1.08
upper secondary & post-secondary non-tertiary	1.91	2.58	-0.67
Activity status (ref: at work)			
unemployed	6.75	8.64	-1.90
in retirement or early retirement	1.33	-1.48	2.81
other inactive person	6.99	1.27	5.72
Tenure (ref: outright owner)			
owner paying mortgage	3.30	1.57	1.73
accommodation rented at prevailing or market rate	7.23	5.44	1.80
accommodation rented at a reduced rate	7.15	5.80	1.35
accommodation provided free	2.98	3.22	-0.24
Household structure (ref: 2 adults no children)			
single person no children	2.53	0.92	1.61
other households no children	-0.11	0.30	-0.41
2 adults 1 or 2 children	0.45	0.07	0.38
2 adults 3 or more children	-2.14	1.62	-3.77
single parent with 1 or more children	3.84	2.38	1.46
other households with children	3.27	3.01	0.27
other households not classified	4.80	-1.44	6.24
*Not significant; for all other coefficients $p < 0.001$ (unless otherwise indicated)			
R² = 0.514 for SAL households regression.			
R² = 0.449 for nonSAL households regression.			

K.5.11 Germany

Table K.54: Models-4 regression analysis coefficients for SAL and nonSAL households (Germany)

	SAL households coefficients	nonSAL households coefficients	coefficients difference SAL - nonSAL
	B SAL	B nonSAL	
(Constant)	11.42	2.77	8.66
HEDI as % of country median HEDI (MHEDI)	-0.08	-0.03	-0.06
HEDI as % MHEDI x Housing cost overburden (40%)	-0.05	-0.04	-0.01
Housing cost overburden (40%)	3.79	4.95	-1.16
Total housing costs subjective heavy burden	9.87	7.47	2.39
Debt repayments a heavy burden	5.80	8.80	-3.01
Low work intensity	2.54	4.59	-2.04
Overcrowded household	1.31	2.79	-1.48
No non-material support	3.82	2.53	1.29
No material support	4.15	3.23	0.93
General bad health circumstances	3.07	3.43	-0.36
Sex (ref: male)			
female	1.12	1.42	-0.30
Age (ref: 50-64)			
16-34	-3.37	-0.14	-3.23
35-49	-0.86	0.32	-1.18
65-72	-0.10	-0.44	0.34
73+	-0.50	-0.92	0.41
Education (ref: tertiary education)			
primary or lower vs tertiary	5.77	8.76	-2.99
lower secondary vs tertiary	4.28	3.68	0.61
upper secondary & post-secondary non-tertiary	1.58	1.49	0.10
Activity status (ref: at work)			
unemployed	7.60	11.03	-3.43
in retirement or early retirement	-4.04	-0.21	-3.83
other inactive person	2.23	0.56	1.67
Tenure (ref: outright owner)			
owner paying mortgage	0.06 (p=0.004)	0.97	-0.91
accommodation rented at prevailing or market rate	2.75	2.89	-0.14
accommodation rented at a reduced rate	5.79	4.91	0.87
accommodation provided free	2.84	1.19	1.66
Household structure (ref: 2 adults no children)			
single person no children	4.09	1.48	2.61
other households no children	-2.33	-0.31	-2.02
2 adults 1 or 2 children	1.34	0.03	1.31
2 adults 3 or more children	-0.27	1.48	-1.75
single parent with 1 or more children	2.33	1.85	0.48
other households with children	2.42	-0.33	2.75
other households not classified	-5.53	-0.89	-4.63
*Not significant; for all other coefficients p < 0.001 (unless otherwise indicated)			
R² = 0.532 for SAL households regression.			
R² = 0.426 for nonSAL households regression.			

K.5.12 Greece

Table K.55: Models-4 regression analysis coefficients for SAL and nonSAL households (Greece)

	SAL households coefficients	nonSAL households coefficients	coefficients difference SAL - nonSAL
	B SAL	B nonSAL	
(Constant)	22.38	12.26	10.12
HEDI as % of country median HEDI (MHEDI)	-0.07	-0.06	-0.01
HEDI as % MHEDI x Housing cost overburden (40%)	-0.02	0.07	-0.09
Housing cost overburden (40%)	3.87	-3.16	7.03
Total housing costs subjective heavy burden	8.33	11.39	-3.06
Debt repayments a heavy burden	4.90	13.15	-8.25
Low work intensity	3.15	6.29	-3.13
Overcrowded household	3.20	4.61	-1.41
No non-material support	1.62	3.88	-2.27
No material support	1.59	6.27	-4.68
General bad health circumstances	2.66	1.57	1.09
Sex (ref: male)			
female	2.34	0.22 (p=011)	2.12
Age (ref: 50-64)			
16-34	-5.63	-1.55	-4.09
35-49	-1.47	-2.85	1.38
65-72	0.41	-0.74	1.15
73+	-3.06	-4.20	1.14
Education (ref: tertiary education)			
primary or lower vs tertiary	6.03	3.09	2.94
lower secondary vs tertiary	4.86	3.27	1.60
upper secondary & post-secondary non-tertiary	4.34	-0.33	4.67
Activity status (ref: at work)			
unemployed	8.52	11.96	-3.45
in retirement or early retirement	-0.95	2.54	-3.49
other inactive person	1.50	4.46	-2.96
Tenure (ref: outright owner)			
owner paying mortgage	1.60	3.16	-1.56
accommodation rented at prevailing or market rate	3.73	-1.11	4.84
accommodation rented at a reduced rate	5.53	4.76	0.77
accommodation provided free	1.44	1.34	0.11
Household structure (ref: 2 adults no children)			
single person no children	-2.98	2.39	-5.36
other households no children	0.76	1.82	-1.06
2 adults 1 or 2 children	2.98	1.76	1.22
2 adults 3 or more children	2.50	-3.12	5.62
single parent with 1 or more children	1.00	3.20	-2.20
other households with children	1.73	0.64 (p=0.002)	1.10
other households not classified	0.78 (p=0.002)	-9.40	10.19
*Not significant; for all other coefficients p < 0.001 (unless otherwise indicated)			
R² = 0.398 for SAL households regression.			
R² = 0.455 for nonSAL households regression.			

K.5.13 Hungary

Table K.56: Models-4 regression analysis coefficients for SAL and nonSAL households (Hungary)

	SAL households coefficients	nonSAL households coefficients	coefficients difference SAL - nonSAL
	B SAL	B nonSAL	
(Constant)	18.82	12.12	6.70
HEDI as % of country median HEDI (MHEDI)	-0.10	-0.06	-0.04
HEDI as % MHEDI x Housing cost overburden (40%)	-0.14	-0.02	-0.11
Housing cost overburden (40%)	9.25	2.65	6.60
Total housing costs subjective heavy burden	16.81	16.18	0.64
Debt repayments a heavy burden	3.86	2.71	1.15
Low work intensity	5.39	4.70	0.69
Overcrowded household	5.29	3.94	1.34
No non-material support	5.61	1.31	4.30
No material support	2.35	5.07	-2.72
General bad health circumstances	3.85	3.83	0.02
Sex (ref: male)			
female	0.75	1.28	-0.53
Age (ref: 50-64)			
16-34	-5.86	-0.21	-5.65
35-49	1.66	1.10	0.56
65-72	0.20 (p=0.009)	-0.52	0.72
73+	-4.57	-2.93	-1.64
Education (ref: tertiary education)			
primary or lower vs tertiary	4.96	13.04	-8.08
lower secondary vs tertiary	4.83	7.34	-2.51
upper secondary & post-secondary non-tertiary	1.08	1.72	-0.64
Activity status (ref: at work)			
unemployed	7.06	8.65	-1.59
in retirement or early retirement	-0.44	-0.92	0.48
other inactive person	3.57	5.64	-2.07
Tenure (ref: outright owner)			
owner paying mortgage	4.20	1.42	2.78
accommodation rented at prevailing or market rate	2.83	1.15	1.69
accommodation rented at a reduced rate	8.01	4.45	3.56
accommodation provided free	1.27	3.01	-1.73
Household structure (ref: 2 adults no children)			
single person no children	1.44	0.67	0.77
other households no children	0.24	-0.46	0.70
2 adults 1 or 2 children	-2.73	-1.51	-1.22
2 adults 3 or more children	7.53	3.50	4.02
single parent with 1 or more children	3.74	2.02	1.72
other households with children	-3.27	-0.54	-2.73
other households not classified	0.00	2.94	-2.94
*Not significant; for all other coefficients p < 0.001 (unless otherwise indicated)			
R² = 0.616 for SAL households regression.			
R² = 0.562 for nonSAL households regression.			

K.5.14 Ireland

Table K.57: Models-4 regression analysis coefficients for SAL and nonSAL households (Ireland)

	SAL households coefficients	nonSAL households coefficients	coefficients difference SAL - nonSAL
	B SAL	B nonSAL	
(Constant)	2.51	3.05	-0.54
HEDI as % of country median HEDI (MHEDI)	-0.02	-0.03	0.00
HEDI as % MHEDI x Housing cost overburden (40%)	-0.37	-0.01	-0.36
Housing cost overburden (40%)	15.96	0.07*	15.89
Total housing costs subjective heavy burden	13.76	10.08	3.69
Debt repayments a heavy burden	11.74	7.96	3.79
Low work intensity	2.11	6.05	-3.94
Overcrowded household	-0.64*	0.52	-1.16
No non-material support	5.92	5.76	0.16
No material support	5.36	3.63	1.73
General bad health circumstances	4.87	7.49	-2.62
Sex (ref: male)			
female	2.39	1.19	1.21
Age (ref: 50-64)			
16-34	-1.32	0.50	-1.82
35-49	-2.07	1.15	-3.22
65-72	1.45	-1.14	2.59
73+	-5.39	-1.37	-4.02
Education (ref: tertiary education)			
primary or lower vs tertiary	7.45	4.25	3.20
lower secondary vs tertiary	6.41	1.87	4.53
upper secondary & post-secondary non-tertiary	2.39	1.00	1.40
Activity status (ref: at work)			
unemployed	2.45	6.28	-3.83
in retirement or early retirement	-1.72	0.47	-2.19
other inactive person	1.10	2.55	-1.45
Tenure (ref: outright owner)			
owner paying mortgage	1.53	0.51	1.03
accommodation rented at prevailing or market rate	11.30	4.30	6.99
accommodation rented at a reduced rate	6.47	4.37	2.10
accommodation provided free	-0.84	3.61	-4.45
Household structure (ref: 2 adults no children)			
single person no children	4.08	0.92	3.16
other households no children	0.13*	0.65	-0.52
2 adults 1 or 2 children	-0.99	-0.01*	-0.98
2 adults 3 or more children	1.71	1.38	0.33
single parent with 1 or more children	5.48	4.19	1.28
other households with children	-4.46	0.47	-4.92
other households not classified	0.00	12.46	-12.46
*Not significant; for all other coefficients $p < 0.001$ (unless otherwise indicated)			
R² = 0.675 for SAL households regression.			
R² = 0.554 for nonSAL households regression.			

K.5.15 Iceland

Table K.58: Models-4 regression analysis coefficients for SAL and nonSAL households (Iceland)

	SAL households coefficients	nonSAL households coefficients	coefficients difference SAL - nonSAL
	B SAL	B nonSAL	
(Constant)	0.19*	2.00	-1.81
HEDI as % of country median HEDI (MHEDI)	-0.02	-0.02	0.00
HEDI as % MHEDI x Housing cost overburden (40%)	-0.10	-0.01	-0.09
Housing cost overburden (40%)	10.06	2.12	7.95
Total housing costs subjective heavy burden	8.53	5.33	3.20
Debt repayments a heavy burden	8.81	9.02	-0.21
Low work intensity	1.10	4.40	-3.30
Overcrowded household	3.31	0.62	2.69
No non-material support	1.84	2.88	-1.04
No material support	9.03	2.88	6.16
General bad health circumstances	3.00	3.31	-0.30
Sex (ref: male)			
female	3.35	1.65	1.71
Age (ref: 50-64)			
16-34	4.74	0.70	4.04
35-49	0.35*	0.36	-0.01
65-72	0.41*	-0.47	0.88
73+	-1.03 (p=0.006)	-1.78	0.75
Education (ref: tertiary education)			
primary or lower vs tertiary	-	-	-
lower secondary vs tertiary	3.15	1.69	1.47
upper secondary & post-secondary non-tertiary	0.26*	0.75	-0.49
Activity status (ref: at work)			
unemployed	3.96	4.87	-0.90
in retirement or early retirement	-3.18	0.60	-3.77
other inactive person	4.02	0.84	3.18
Tenure (ref: outright owner)			
owner paying mortgage	0.19*	0.92	-0.73
accommodation rented at prevailing or market rate	1.97	3.48	-1.51
accommodation rented at a reduced rate	3.85	2.55	1.30
accommodation provided free	4.30	3.81	0.49
Household structure (ref: 2 adults no children)			
single person no children	2.51	0.76	1.75
other households no children	0.54*	0.58	-0.04
2 adults 1 or 2 children	-0.89 (p=0.002)	0.28	-1.17
2 adults 3 or more children	0.36*	0.62	-0.27
single parent with 1 or more children	4.75	2.82	1.93
other households with children	0.67*	0.32	0.35
other households not classified	8.25	0.08*	8.16
*Not significant; for all other coefficients p < 0.001 (unless otherwise indicated)			
R² = 0.591 for SAL households regression.			
R² = 0.372 for nonSAL households regression.			

K.5.16 Italy

Table K.59: Models-4 regression analysis coefficients for SAL and nonSAL households (Italy)

	SAL households coefficients	nonSAL households coefficients	coefficients difference SAL - nonSAL
	B SAL	B nonSAL	
(Constant)	10.20	4.54	5.66
HEDI as % of country median HEDI (MHEDI)	-0.06	-0.03	-0.03
HEDI as % MHEDI x Housing cost overburden (40%)	-0.17	-0.05	-0.12
Housing cost overburden (40%)	8.78	3.22	5.57
Total housing costs subjective heavy burden	13.65	9.16	4.49
Debt repayments a heavy burden	4.17	6.22	-2.05
Low work intensity	1.47	5.55	-4.07
Overcrowded household	1.37	0.60	0.77
No non-material support	1.78	4.93	-3.15
No material support	4.01	2.05	1.96
General bad health circumstances	3.56	4.92	-1.36
Sex (ref: male)			
female	0.01	0.15	-0.14
Age (ref: 50-64)			
16-34	1.41	-0.30	1.71
35-49	-2.99	-0.11	-2.88
65-72	-5.22	0.57	-5.79
73+	-4.92	0.51	-5.44
Education (ref: tertiary education)			
primary or lower vs tertiary	3.78	5.80	-2.02
lower secondary vs tertiary	2.05	3.74	-1.69
upper secondary & post-secondary non-tertiary	-0.42	0.41	-0.83
Activity status (ref: at work)			
unemployed	4.89	9.93	-5.04
in retirement or early retirement	0.95	-1.94	2.89
other inactive person	2.48	1.00	1.47
Tenure (ref: outright owner)			
owner paying mortgage	-1.62	-0.39	-1.23
accommodation rented at prevailing or market rate	5.70	4.45	1.25
accommodation rented at a reduced rate	7.29	10.31	-3.02
accommodation provided free	3.48	2.57	0.91
Household structure (ref: 2 adults no children)			
single person no children	0.38	0.47	-0.09
other households no children	0.34	1.19	-0.85
2 adults 1 or 2 children	-5.52	-0.70	-4.83
2 adults 3 or more children	-0.70	0.32	-1.02
single parent with 1 or more children	4.05	0.00	4.05
other households with children	0.44	2.36	-1.92
other households not classified	-	-	-
*Not significant; for all other coefficients $p < 0.001$ (unless otherwise indicated)			
R² = 0.406 for SAL households regression.			
R² = 0.409 for nonSAL households regression.			

K.5.17 Latvia

Table K.60: Models-4 regression analysis coefficients for SAL and nonSAL households (Latvia)

	SAL households coefficients	nonSAL households coefficients	coefficients difference SAL - nonSAL
	B SAL	B nonSAL	
(Constant)	19.67	12.61	7.06
HEDI as % of country median HEDI (MHEDI)	-0.07	-0.05	-0.02
HEDI as % MHEDI x Housing cost overburden (40%)	-0.06	-0.01	-0.05
Housing cost overburden (40%)	4.11	-1.04	5.15
Total housing costs subjective heavy burden	13.29	14.59	-1.30
Debt repayments a heavy burden	11.58	10.25	1.32
Low work intensity	2.93	6.05	-3.13
Overcrowded household	2.95	0.81	2.14
No non-material support	0.18*	3.45	-3.27
No material support	7.18	6.87	0.30
General bad health circumstances	1.58	5.49	-3.92
Sex (ref: male)			
female	0.34	2.03	-1.70
Age (ref: 50-64)			
16-34	-2.01	-2.51	0.50
35-49	0.36 (p=0.013)	-1.80	2.17
65-72	-4.42	-2.77	-1.66
73+	-6.95	-5.89	-1.06
Education (ref: tertiary education)			
primary or lower vs tertiary	3.77	6.54	-2.76
lower secondary vs tertiary	4.64	7.05	-2.41
upper secondary & post-secondary non-tertiary	4.08	2.45	1.63
Activity status (ref: at work)			
unemployed	2.43	5.66	-3.23
in retirement or early retirement	4.26	3.30	0.95
other inactive person	3.66	2.37	1.29
Tenure (ref: outright owner)			
owner paying mortgage	1.11	0.34	0.77
accommodation rented at prevailing or market rate	7.72	3.55	4.17
accommodation rented at a reduced rate	5.83	7.78	-1.96
accommodation provided free	1.87	3.23	-1.36
Household structure (ref: 2 adults no children)			
single person no children	-0.26 (p=0.017)	0.72	-0.97
other households no children	0.37 (p=0.009)	0.34	0.03
2 adults 1 or 2 children	-2.35	0.36	-2.71
2 adults 3 or more children	-11.85	1.70	-13.54
single parent with 1 or more children	-3.51	0.78	-4.29
other households with children	2.79	-1.17	3.95
other households not classified	-5.03	2.56	-7.59
*Not significant; for all other coefficients p < 0.001 (unless otherwise indicated)			
R² = 0.437 for SAL households regression.			
R² = 0.549 for nonSAL households regression.			

K.5.18 Lithuania

Table K.61: Models-4 regression analysis coefficients for SAL and nonSAL households (Lithuania)

	SAL households coefficients	nonSAL households coefficients	coefficients difference SAL - nonSAL
	B SAL	B nonSAL	
(Constant)	13.92	11.17	2.74
HEDI as % of country median HEDI (MHEDI)	-0.05	-0.04	-0.01
HEDI as % MHEDI x Housing cost overburden (40%)	0.15	-0.02	0.17
Housing cost overburden (40%)	-0.30*	-0.86	0.57
Total housing costs subjective heavy burden	14.83	14.06	0.78
Debt repayments a heavy burden	3.41	9.02	-5.61
Low work intensity	10.84	9.28	1.56
Overcrowded household	1.08	3.58	-2.50
No non-material support	-0.33	0.47	-0.80
No material support	7.79 (p=0.008)	7.05	0.74
General bad health circumstances	3.27	5.92	-2.65
Sex (ref: male)			
female	3.81	1.06	2.76
Age (ref: 50-64)			
16-34	1.96	-3.09	5.06
35-49	-1.86	-0.39	-1.46
65-72	-8.70	-1.77	-6.93
73+	-13.57	-5.26	-8.32
Education (ref: tertiary education)			
primary or lower vs tertiary	12.72	7.98	4.74
lower secondary vs tertiary	8.45	8.08	0.37
upper secondary & post-secondary non-tertiary	9.29	4.40	4.89
Activity status (ref: at work)			
unemployed	2.10	3.58	-1.48
in retirement or early retirement	6.80	3.71	3.09
other inactive person	2.83	1.06	1.77
Tenure (ref: outright owner)			
owner paying mortgage	-9.78	-1.86	-7.92
accommodation rented at prevailing or market rate	-	2.23	-
accommodation rented at a reduced rate	12.02	10.70	1.32
accommodation provided free	4.38	2.54	1.84
Household structure (ref: 2 adults no children)			
single person no children	-2.92	2.63	-5.55
other households no children	0.64	0.34	0.3
2 adults 1 or 2 children	5.10	0.22	4.88
2 adults 3 or more children	-5.25	2.12	-7.37
single parent with 1 or more children	0.25*	0.67	-0.42
other households with children	1.07	-0.13 (p=0.03)	1.2
other households not classified	-10.99 (p=0.07)	-5.43	-5.56
*Not significant; for all other coefficients p < 0.001 (unless otherwise indicated)			
R² = 0.519 for SAL households regression.			
R² = 0.513 for nonSAL households regression.			

K.5.19 Luxembourg

Table K.62: Models-4 regression analysis coefficients for SAL and nonSAL households (Luxembourg)

	SAL households coefficients	nonSAL households coefficients	coefficients difference SAL - nonSAL
	B SAL	B nonSAL	
(Constant)	2.19	0.36	1.84
HEDI as % of country median HEDI (MHEDI)	-0.04	-0.01	-0.02
HEDI as % MHEDI x Housing cost overburden (40%)	-0.18	-0.04	-0.13
Housing cost overburden (40%)	7.95	5.45	2.50
Total housing costs subjective heavy burden	7.27	3.96	3.31
Debt repayments a heavy burden	2.96	2.75	0.22
Low work intensity	4.77	-0.41	5.18
Overcrowded household	3.21	1.62	1.59
No non-material support	2.42	2.24	0.18
No material support	5.08	2.51	2.57
General bad health circumstances	3.29	2.86	0.44
Sex (ref: male)			
female	2.87	1.09	1.78
Age (ref: 50-64)			
16-34	-1.06	-0.66	-0.40
35-49	-1.33	0.38	-1.71
65-72	-0.59 (p=0.003_	-1.00	0.41
73+	-0.36*	-1.96	1.60
Education (ref: tertiary education)	*		
primary or lower vs tertiary	-0.31*	3.58	-3.88
lower secondary vs tertiary	-2.02	1.80	-3.82
upper secondary & post-secondary non-tertiary	-0.44 (p=0.17)	1.96	-2.40
Activity status (ref: at work)			
unemployed	-3.81	5.83	-9.64
in retirement or early retirement	1.11	0.19 (p=0.002)	0.92
other inactive person	-1.43	3.60	-5.03
Tenure (ref: outright owner)			
owner paying mortgage	0.80	0.26	0.54
accommodation rented at prevailing or market rate	3.22	2.17	1.05
accommodation rented at a reduced rate	5.02	1.52	3.50
accommodation provided free	1.38 (p=0.02)	-0.50	1.88
Household structure (ref: 2 adults no children)			
single person no children	1.20	1.28	-0.08
other households no children	1.02	0.09*	0.93
2 adults 1 or 2 children	2.30	0.15 (p=0.006)	2.15
2 adults 3 or more children	-0.42*	0.84	-1.25
single parent with 1 or more children	8.93	2.29	6.64
other households with children	-0.60 (p=0.017)	0.73	-1.33
other households not classified	-3.75*	0.02*	-3.78
*Not significant; for all other coefficients p < 0.001 (unless otherwise indicated)			
R² = 0.464 for SAL households regression.			
R² = 0.335 for nonSAL households regression.			

K.5.20 Malta

Table K.63: Models-4 regression analysis coefficients for SAL and nonSAL households (Malta)

	SAL households coefficients	nonSAL households coefficients	coefficients difference SAL - nonSAL
	B SAL	B nonSAL	
(Constant)	-2.95 (p=0.002)	5.09	-8.04
HEDI as % of country median HEDI (MHEDI)	-0.01	-0.03	0.02
HEDI as % MHEDI x Housing cost overburden (40%)	-0.23	0.02	-0.26
Housing cost overburden (40%)	-7.40	-0.71 (p=0.031)	-6.69
Total housing costs subjective heavy burden	13.09	7.26	5.83
Debt repayments a heavy burden	17.86	9.48	8.38
Low work intensity	6.56	5.87	0.69
Overcrowded household	6.65	10.25	-3.60
No non-material support	5.66	1.89	3.77
No material support	-0.47*	3.84	-4.31
General bad health circumstances	2.84	4.51	-1.67
Sex (ref: male)			
female	-0.42*	0.75	-1.16
Age (ref: 50-64)			
16-34	-2.66*	2.15	-4.81
35-49	3.21	0.50	2.70
65-72	-2.54	-3.11	0.58
73+	-6.24	-4.36	-1.88
Education (ref: tertiary education)			
primary or lower vs tertiary	8.93	3.01	5.92
lower secondary vs tertiary	3.63	1.78	1.85
upper secondary & post-secondary non-tertiary	2.78	-0.35	3.13
Activity status (ref: at work)	-		
unemployed	-	9.23	-
in retirement or early retirement	9.36	2.54	6.82
other inactive person	4.52	5.09	-0.57
Tenure (ref: outright owner)			0
owner paying mortgage	-25.50	-0.63	-24.87
accommodation rented at prevailing or market rate	9.81	4.44	5.37
accommodation rented at a reduced rate	7.09	6.61	0.48
accommodation provided free	7.84	2.86	4.98
Household structure (ref: 2 adults no children)			0
single person no children	2.896	-0.304	3.2
other households no children	3.702	0.037*	3.665
2 adults 1 or 2 children	8.808	0.459	8.349
2 adults 3 or more children	-	2.471	-
single parent with 1 or more children	9.091	5.885	3.206
other households with children	0.333*	-0.288 (p=0.006)	0.621
other households not classified	--	-	-
*Not significant; for all other coefficients p < 0.001 (unless otherwise indicated)			
R² = 0.464 for SAL households regression.			
R² = 0.404 for nonSAL households regression.			

K.5.21 Netherlands

Table K.64: Models-4 regression analysis coefficients for SAL and nonSAL households (Netherlands)

	SAL households coefficients	nonSAL households coefficients	coefficients difference SAL - nonSAL
	B SAL	B nonSAL	
(Constant)	9.42	4.93	4.49
HEDI as % of country median HEDI (MHEDI)	-0.04	-0.02	-0.02
HEDI as % MHEDI x Housing cost overburden (40%)	-0.01	-0.01	0.00
Housing cost overburden (40%)	-0.23 (p=0.026)	-0.34	0.11
Total housing costs subjective heavy burden	11.42	12.41	-0.99
Debt repayments a heavy burden	4.19	7.63	-3.44
Low work intensity	3.26	5.04	-1.78
Overcrowded household	4.95	0.14	4.81
No non-material support	0.28	1.90	-1.63
No material support	4.93	1.20	3.73
General bad health circumstances	1.67	4.65	-2.98
Sex (ref: male)			
female	-0.01*	0.13	-0.15
Age (ref: 50-64)			
16-34	-0.40	-1.16	0.76
35-49	-0.46	0.48	-0.93
65-72	-0.91	-1.16	0.25
73+	-5.12	-1.66	-3.46
Education (ref: tertiary education)			
primary or lower vs tertiary	5.08	3.13	1.95
lower secondary vs tertiary	2.46	1.15	1.31
upper secondary & post-secondary non-tertiary	3.67	0.72	2.95
Activity status (ref: at work)			
unemployed	3.69	4.10	-0.41
in retirement or early retirement	-1.45	0.51	-1.96
other inactive person	-1.08	1.91	-3.00
Tenure (ref: outright owner)			
owner paying mortgage	-0.08*	0.49	-0.57
accommodation rented at prevailing or market rate	6.01	3.85	2.16
accommodation rented at a reduced rate	-5.38	2.50	-7.89
accommodation provided free	1.36	1.22	0.14
Household structure (ref: 2 adults no children)			
single person no children	-3.80	-1.00	-2.80
other households no children	0.90	-0.38	1.28
2 adults 1 or 2 children	7.50	-0.48	7.98
2 adults 3 or more children	-1.67	1.93	-3.60
single parent with 1 or more children	9.42	4.93	4.49
other households with children	-0.04 (9=0.003)	-0.02	-0.02
other households not classified	-0.01	-0.01	0.00
*Not significant; for all other coefficients p < 0.001 (unless otherwise indicated)			
R² = 0.585 for SAL households regression.			
R² = 0.475 for nonSAL households regression.			

K.5.22 Norway

Table K.65: Models-4 regression analysis coefficients for SAL and nonSAL households (Norway)

	SAL households coefficients	nonSAL households coefficients	coefficients difference SAL - nonSAL
	B SAL	B nonSAL	
(Constant)	3.04	1.43	1.61
HEDI as % of country median HEDI (MHEDI)	-0.06	-0.01	-0.04
HEDI as % MHEDI x Housing cost overburden (40%)	0.11	0.00	0.11
Housing cost overburden (40%)	-9.53	-0.51	-9.02
Total housing costs subjective heavy burden	20.03	10.75	9.28
Debt repayments a heavy burden	3.90	17.79	-13.89
Low work intensity	5.91	3.57	2.35
Overcrowded household	-7.76	1.70	-9.47
No non-material support	12.89	3.52	9.36
No material support	-1.91	2.66	-4.57
General bad health circumstances	0.45	3.67	-3.21
Sex (ref: male)			
female	2.82	0.93	1.89
Age (ref: 50-64)			
16-34	4.76	0.49	4.27
35-49	1.58	0.42	1.16
65-72	4.23	-0.58	4.81
73+	-2.20	-1.97	-0.23
Education (ref: tertiary education)			
primary or lower vs tertiary	16.37	9.33	7.03
lower secondary vs tertiary	1.61	1.59	0.02
upper secondary & post-secondary non-tertiary	0.16*	0.46	-0.31
Activity status (ref: at work)			
unemployed	14.45	4.42	10.03
in retirement or early retirement	-1.03	-0.22	-0.81
other inactive person	3.44	1.47	1.97
Tenure (ref: outright owner)			
owner paying mortgage	1.46	0.90	0.55
accommodation rented at prevailing or market rate	5.45	3.53	1.93
accommodation rented at a reduced rate	-2.52	6.73	-9.26
accommodation provided free	7.54	0.30	7.24
Household structure (ref: 2 adults no children)			
single person no children	2.49	0.89	1.60
other households no children	1.73	1.22	0.51
2 adults 1 or 2 children	1.45	-0.24	1.69
2 adults 3 or more children	-3.99	0.39	-4.38
single parent with 1 or more children	3.04	1.43	1.61
other households with children	-0.06	-0.01	-0.04
other households not classified	0.11*	0.00	0.11
*Not significant; for all other coefficients p < 0.001 (unless otherwise indicated)			
R² = 0.611 for SAL households regression.			
R² = 0.438 for nonSAL households regression.			

K.5.23 Poland

Table K.66: Models-4 regression analysis coefficients for SAL and nonSAL households (Poland)

	SAL households coefficients	nonSAL households coefficients	coefficients difference SAL - nonSAL
	B SAL	B nonSAL	
(Constant)	10.77	5.84	4.93
HEDI as % of country median HEDI (MHEDI)	-0.09	-0.04	-0.05
HEDI as % MHEDI x Housing cost overburden (40%)	-0.10	-0.02	-0.08
Housing cost overburden (40%)	7.43	1.84	5.59
Total housing costs subjective heavy burden	8.55	6.29	2.26
Debt repayments a heavy burden	12.90	7.34	5.56
Low work intensity	3.69	6.87	-3.17
Overcrowded household	4.77	3.02	1.76
No non-material support	6.87	4.86	2.01
No material support	5.49	5.52	-0.03
General bad health circumstances	3.74	4.16	-0.42
Sex (ref: male)			
female	-0.10	1.27	-1.36
Age (ref: 50-64)			
16-34	-0.89	-2.87	1.97
35-49	-1.56	-0.82	-0.74
65-72	-0.60	-0.77	0.16
73+	-3.97	-2.69	-1.28
Education (ref: tertiary education)			
primary or lower vs tertiary	3.58	6.72	-3.14
lower secondary vs tertiary	-1.14	2.31	-3.44
upper secondary & post-secondary non-tertiary	-0.04*	1.55	-1.59
Activity status (ref: at work)			
unemployed	8.39	6.28	2.11
in retirement or early retirement	0.44	-0.03 (p=0.033)	0.46
other inactive person	3.49	1.92	1.57
Tenure (ref: outright owner)			
owner paying mortgage	1.43	0.77	0.67
accommodation rented at prevailing or market rate	7.19	0.88	6.32
accommodation rented at a reduced rate	2.07	1.88	0.19
accommodation provided free	6.15	4.62	1.54
Household structure (ref: 2 adults no children)			
single person no children	3.08	2.11	0.97
other households no children	-0.12	-0.45	0.33
2 adults 1 or 2 children	-2.89	-0.05	-2.84
2 adults 3 or more children	0.43	-2.94	3.37
single parent with 1 or more children	10.77	5.84	4.93
other households with children	-0.09	-0.04	-0.05
other households not classified	-0.10	-0.02	-0.08
*Not significant; for all other coefficients p < 0.001 (unless otherwise indicated)			
R² = 0.495 for SAL households regression.			
R² = 0.405 for nonSAL households regression.			

K.5.24 Portugal

Table K.67: Models-4 regression analysis coefficients for SAL and nonSAL households (Portugal)

	SAL households coefficients	nonSAL households coefficients	coefficients difference SAL - nonSAL
	B SAL	B nonSAL	
(Constant)	16.32	8.31	8.01
HEDI as % of country median HEDI (MHEDI)	-0.08	-0.04	-0.03
HEDI as % MHEDI x Housing cost overburden (40%)	0.05	-0.01	0.06
Housing cost overburden (40%)	2.52	-0.17	2.68
Total housing costs subjective heavy burden	14.39	10.61	3.79
Debt repayments a heavy burden	5.88	7.63	-1.75
Low work intensity	3.20	3.75	-0.55
Overcrowded household	4.53	3.32	1.21
No non-material support	4.65	6.04	-1.39
No material support	3.60	5.57	-1.97
General bad health circumstances	2.69	5.24	-2.55
Sex (ref: male)			
female	3.64	2.08	1.56
Age (ref: 50-64)			
16-34	-2.54	-1.51	-1.03
35-49	-1.09	-1.24	0.15
65-72	0.02*	-0.30	0.33
73+	-2.11	-2.36	0.26
Education (ref: tertiary education)			
primary or lower vs tertiary	3.58	3.78	-0.20
lower secondary vs tertiary	2.33	2.12	0.20
upper secondary & post-secondary non-tertiary	0.47	0.62	-0.15
Activity status (ref: at work)			
unemployed	4.41	7.05	-2.64
in retirement or early retirement	-1.01	0.25	-1.25
other inactive person	-0.12	2.60	-2.72
Tenure (ref: outright owner)			
owner paying mortgage	0.00*	1.88	-1.88
accommodation rented at prevailing or market rate	7.24	6.20	1.04
accommodation rented at a reduced rate	12.89	11.67	1.22
accommodation provided free	5.42	3.56	1.86
Household structure (ref: 2 adults no children)			
single person no children	-0.04*	2.21	-2.24
other households no children	-0.59	0.33	-0.93
2 adults 1 or 2 children	-2.05	-0.66	-1.39
2 adults 3 or more children	2.93	0.95	1.98
single parent with 1 or more children	-1.29	1.47	8.01
other households with children	-1.18	-0.61	-0.03
other households not classified	-	-	-
*Not significant; for all other coefficients $p < 0.001$ (unless otherwise indicated)			
R² = 0.537 for SAL households regression.			
R² = 0.474 for nonSAL households regression.			

K.5.25 Romania

Table K.68: Models-4 regression analysis coefficients for SAL and nonSAL households (Romania)

	SAL households coefficients	nonSAL households coefficients	coefficients difference SAL - nonSAL
	B SAL	B nonSAL	
(Constant)	32.15	27.79	4.36
HEDI as % of country median HEDI (MHEDI)	-0.11	-0.09	-0.02
HEDI as % MHEDI x Housing cost overburden (40%)	-0.01	-0.06	0.05
Housing cost overburden (40%)	-1.99	2.82	-4.81
Total housing costs subjective heavy burden	16.71	14.14	2.57
Debt repayments a heavy burden	10.96	4.35	6.60
Low work intensity	2.33	2.01	0.32
Overcrowded household	1.32	2.33	-1.01
No non-material support	5.74	1.97	3.77
No material support	5.35	6.78	-1.43
General bad health circumstances	1.88	1.42	0.46
Sex (ref: male)			
female	2.12	0.86	1.25
Age (ref: 50-64)			
16-34	3.38	-2.73	6.11
35-49	2.26	-1.75	4.01
65-72	-1.84	-0.13	-1.71
73+	-3.76	-0.81	-2.96
Education (ref: tertiary education)			
primary or lower vs tertiary	5.37	12.00	-6.63
lower secondary vs tertiary	4.48	7.53	-3.06
upper secondary & post-secondary non-tertiary	0.06*	2.54	-2.48
Activity status (ref: at work)			
unemployed	12.76	8.10	4.66
in retirement or early retirement	1.58	-1.70	3.27
other inactive person	2.21	0.48	1.72
Tenure (ref: outright owner)			
owner paying mortgage	-2.91	-0.07*	-2.84
accommodation rented at prevailing or market rate	8.66	4.55	4.10
accommodation rented at a reduced rate	18.34	3.04	15.30
accommodation provided free	1.72	4.23	-2.51
Household structure (ref: 2 adults no children)			
single person no children	-1.10	-1.00	-0.10
other households no children	-0.49	0.13	-0.62
2 adults 1 or 2 children	-0.30	-3.57	3.27
2 adults 3 or more children	16.08	-1.62	17.70
single parent with 1 or more children	-	-5.45	-
other households with children	2.63	0.01*	-0.01
other households not classified	-	-5.77	-
*Not significant; for all other coefficients $p < 0.001$ (unless otherwise indicated)			
R² = 0.493 for SAL households regression.			
R² = 0.478 for nonSAL households regression.			

K.5.26 Serbia

Table K.69: Models-4 regression analysis coefficients for SAL and nonSAL households (Serbia)

	SAL households coefficients	nonSAL households coefficients	coefficients difference SAL - nonSAL
	B SAL	B nonSAL	
(Constant)	24.05	18.82	5.22
HEDI as % of country median HEDI (MHEDI)	-0.13	-0.08	-0.05
HEDI as % MHEDI x Housing cost overburden (40%)	0.03	-0.03	0.06
Housing cost overburden (40%)	-4.06	1.58	-5.63
Total housing costs subjective heavy burden	10.37	11.06	-0.69
Debt repayments a heavy burden	4.13	3.57	0.57
Low work intensity	4.84	2.01	2.83
Overcrowded household	4.17	3.06	1.10
No non-material support	7.05	5.05	2.00
No material support	9.00	6.23	2.77
General bad health circumstances	9.60	8.27	1.33
Sex (ref: male)			
female	1.52	0.99	0.54
Age (ref: 50-64)			
16-34	-2.09	-2.67	0.58
35-49	-2.47	-1.60	-0.87
65-72	2.45	-0.74	3.18
73+	1.27	-4.03	5.30
Education (ref: tertiary education)			
primary or lower vs tertiary	4.50	10.38	-5.88
lower secondary vs tertiary	8.01	7.89	0.12
upper secondary & post-secondary non-tertiary	4.92	1.72	3.21
Activity status (ref: at work)			
unemployed	2.12	4.61	-2.49
in retirement or early retirement	-5.63	-0.76	-4.87
other inactive person	1.56	1.30	0.27
Tenure (ref: outright owner)			
owner paying mortgage	-4.47	-1.61	-2.86
accommodation rented at prevailing or market rate	-0.58 (p=0.033)	0.83	-1.41
accommodation rented at a reduced rate	13.69	1.96	11.73
accommodation provided free	-0.41	-0.66	0.24
Household structure (ref: 2 adults no children)			
single person no children	-0.31 (p=0.005)	0.86	-1.17
other households no children	-6.51	-2.14	-4.37
2 adults 1 or 2 children	-10.69	-3.43	-7.26
2 adults 3 or more children	-3.94	-3.44	-0.50
single parent with 1 or more children	5.91	0.58	5.33
other households with children	-8.63	-6.02	-2.61
other households not classified	-	-	-
*Not significant; for all other coefficients p < 0.001 (unless otherwise indicated)			
R² = 0.522 for SAL households regression.			
R² = 0.527 for nonSAL households regression.			

K.5.27 Slovakia

Table K.70: Models-4 regression analysis coefficients for SAL and nonSAL households (Slovakia)

	SAL households coefficients	nonSAL households coefficients	coefficients difference SAL - nonSAL
	B SAL	B nonSAL	
(Constant)	16.24	10.46	5.77
HEDI as % of country median HEDI (MHEDI)	-0.11	-0.06	-0.05
HEDI as % MHEDI x Housing cost overburden (40%)	-0.08	-0.04	-0.04
Housing cost overburden (40%)	5.76	3.15	2.61
Total housing costs subjective heavy burden	12.68	11.95	0.73
Debt repayments a heavy burden	6.24	4.45	1.79
Low work intensity	5.56	7.87	-2.31
Overcrowded household	2.89	2.75	0.14
No non-material support	3.35	1.60	1.76
No material support	5.51	4.55	0.96
General bad health circumstances	3.03	1.93	1.10
Sex (ref: male)			
female	-1.98	0.71	-2.68
Age (ref: 50-64)			
16-34	2.44	-0.81	3.25
35-49	0.54	-0.27	0.81
65-72	0.23 (p=0.003)	1.37	-1.14
73+	-1.47	-0.09*	-1.39
Education (ref: tertiary education)			
primary or lower vs tertiary	10.90	12.06	-1.16
lower secondary vs tertiary	4.86	7.01	-2.15
upper secondary & post-secondary non-tertiary	1.31	1.64	-0.33
Activity status (ref: at work)			
unemployed	10.24	11.02	-0.79
in retirement or early retirement	1.22	0.18	1.04
other inactive person	3.98	1.52	2.46
Tenure (ref: outright owner)			
owner paying mortgage	-0.79	-1.49	0.71
accommodation rented at prevailing or market rate	-0.69	0.74	-1.43
accommodation rented at a reduced rate	3.29	6.64	-3.35
accommodation provided free	6.35	6.52	-0.17
Household structure (ref: 2 adults no children)			
single person no children	2.00	0.29	1.70
other households no children	-0.29	-0.11	-0.17
2 adults 1 or 2 children	-2.18	-1.78	-0.40
2 adults 3 or more children	-7.43	-2.65	-4.78
single parent with 1 or more children	-4.16	1.20	-5.36
other households with children	-2.10	0.49	-2.59
other households not classified	-	-	-
*Not significant; for all other coefficients p < 0.001 (unless otherwise indicated)			
R² = 0.536 for SAL households regression.			
R² = 0.536 for nonSAL households regression.			

K.5.28 Slovenia

Table K.71: Models-4 regression analysis coefficients for SAL and nonSAL households (Slovenia)

	SAL households coefficients	nonSAL households coefficients	coefficients difference SAL - nonSAL
	B SAL	B nonSAL	
(Constant)	8.47	5.82	2.66
HEDI as % of country median HEDI (MHEDI)	-0.06	-0.03	-0.02
HEDI as % MHEDI x Housing cost overburden (40%)	0.08	-0.03	0.11
Housing cost overburden (40%)	-3.51	2.69	-6.20
Total housing costs subjective heavy burden	12.02	9.49	2.53
Debt repayments a heavy burden	7.15	5.41	1.74
Low work intensity	4.07	5.21	-1.14
Overcrowded household	1.44	2.62	-1.18
No non-material support	2.35	2.69	-0.34
No material support	6.01	3.03	2.98
General bad health circumstances	5.87	5.73	0.14
Sex (ref: male)			
female	2.61	1.04	1.57
Age (ref: 50-64)			
16-34	-4.97	-1.74	-3.23
35-49	-2.47	-1.01	-1.46
65-72	-1.52	-0.02	-1.50
73+	-3.50	-1.12	-2.38
Education (ref: tertiary education)			
primary or lower vs tertiary	-	-	-
lower secondary vs tertiary	3.67	4.97	-1.31
upper secondary & post-secondary non-tertiary	1.05	0.88	0.16
Activity status (ref: at work)			
unemployed	7.21	3.95	3.26
in retirement or early retirement	-1.50	0.11	-1.62
other inactive person	2.10	1.97	0.14
Tenure (ref: outright owner)			
owner paying mortgage	0.30	0.35	-0.04
accommodation rented at prevailing or market rate	-0.06	2.13	-2.20
accommodation rented at a reduced rate	8.75	4.75	4.01
accommodation provided free	4.09	0.19	3.90
Household structure (ref: 2 adults no children)			
single person no children	3.76	1.46	2.30
other households no children	-0.05	0.09	-0.13
2 adults 1 or 2 children	-3.05	-0.38	-2.67
2 adults 3 or more children	-3.48	-0.01	-3.46
single parent with 1 or more children	-6.65	2.21	-8.86
other households with children	-0.22	-1.20	-2.59
other households not classified	-	-	-1.42-
*Not significant; for all other coefficients p < 0.001 (unless otherwise indicated)			
R² = 0.536 for SAL households regression.			
R² = 0.481 for nonSAL households regression.			

K.5.29 Spain

Table K.72: Models-4 regression analysis coefficients for SAL and nonSAL households (Spain)

	SAL households coefficients	nonSAL households coefficients	coefficients difference SAL - nonSAL
	B SAL	B nonSAL	
(Constant)	10.57	4.52	6.04
HEDI as % of country median HEDI (MHEDI)	-0.08	-0.04	-0.04
HEDI as % MHEDI x Housing cost overburden (40%)	-0.17	-0.07	-0.09
Housing cost overburden (40%)	6.81	5.22	1.59
Total housing costs subjective heavy burden	10.65	9.26	1.39
Debt repayments a heavy burden	3.40	6.38	-2.98
Low work intensity	6.66	8.06	-1.39
Overcrowded household	8.90	4.41	4.48
No non-material support	1.96	2.89	-0.93
No material support	4.23	4.60	-0.38
General bad health circumstances	3.13	5.75	-2.62
Sex (ref: male)			
female	3.72	0.95	2.76
Age (ref: 50-64)			
16-34	5.51	-2.45	7.96
35-49	0.82	-0.60	1.42
65-72	-1.64	-0.57	-1.07
73+	-2.54	-2.60	0.06
Education (ref: tertiary education)			
primary or lower vs tertiary	3.33	6.70	-3.37
lower secondary vs tertiary	1.08	2.48	-1.40
upper secondary & post-secondary non-tertiary	0.26	1.44	-1.18
Activity status (ref: at work)			
unemployed	3.87	6.92	-3.05
in retirement or early retirement	0.23	0.00*	0.22
other inactive person	0.83	0.40	0.44
Tenure (ref: outright owner)			
owner paying mortgage	5.86	2.17	3.69
accommodation rented at prevailing or market rate	12.14	5.46	6.68
accommodation rented at a reduced rate	7.44	9.10	-1.66
accommodation provided free	1.83	4.11	-2.28
Household structure (ref: 2 adults no children)			
single person no children	0.95	1.52	-0.57
other households no children	-0.11	-0.02*	-0.10
2 adults 1 or 2 children	-0.90	-0.65	-0.25
2 adults 3 or more children	-6.43	1.25	-7.68
single parent with 1 or more children	9.20	0.97	8.23
other households with children	0.41	1.54	-1.14
other households not classified	-	1.96	-
*Not significant; for all other coefficients $p < 0.001$ (unless otherwise indicated)			
R² = 0.465 for SAL households regression.			
R² = 0.470 for nonSAL households regression.			

K.5.30 Sweden

Table K.73: Models-4 regression analysis coefficients for SAL and nonSAL households (Sweden)

	SAL households coefficients		nonSAL households coefficients	
	B SAL	B nonSAL	coefficients difference SAL - nonSAL	
(Constant)	-4.41	2.33	-6.74	
HEDI as % of country median HEDI (MHEDI)	0.01	-0.02	0.03	
HEDI as % MHEDI x Housing cost overburden (40%)	-0.02	0.01	-0.02	
Housing cost overburden (40%)	-2.17	-0.51	-1.66	
Total housing costs subjective heavy burden	12.75	9.66	3.08	
Debt repayments a heavy burden	15.81	13.68	2.12	
Low work intensity	1.19	5.48	-4.29	
Overcrowded household	3.37	1.39	1.97	
No non-material support	-0.81	5.42	-6.22	
No material support	3.52	4.43	-0.91	
General bad health circumstances	1.05	2.05	-1.00	
Sex (ref: male)				
female	2.93	0.90	2.03	
Age (ref: 50-64)				
16-34	2.92	-0.48	3.40	
35-49	4.25	0.57	3.68	
65-72	1.25	-1.04	2.29	
73+	-1.71	-2.21	0.50	
Education (ref: tertiary education)				
primary or lower vs tertiary	8.84	1.69	7.15	
lower secondary vs tertiary	2.14	0.27	1.88	
upper secondary & post-secondary non-tertiary	3.03	0.34	2.69	
Activity status (ref: at work)				
unemployed	6.17	4.82	1.35	
in retirement or early retirement	-0.07*	0.56	-0.62	
other inactive person	6.70	0.08	6.62	
Tenure (ref: outright owner)				
owner paying mortgage	-0.45	0.26	-0.71	
accommodation rented at prevailing or market rate	0.38	2.05	-1.67	
accommodation rented at a reduced rate	-	-	-	
accommodation provided free	6.94	-0.22	7.15	
Household structure (ref: 2 adults no children)				
single person no children	2.33	0.38	1.94	
other households no children	-7.10	-0.48	-6.62	
2 adults 1 or 2 children	-0.36	-0.07	-0.30	
2 adults 3 or more children	-11.69	1.04	-12.73	
single parent with 1 or more children	3.26	1.04	2.22	
other households with children	-5.90	-0.54	-5.37	
other households not classified	13.68	-0.35 (p=0.002)	14.04	
*Not significant; for all other coefficients p < 0.001 (unless otherwise indicated)				
R² = 0.768 for SAL households regression.				
R² = 0.527 for nonSAL households regression.				

K.5.31 Switzerland

Table K.74: Models-4 regression analysis coefficients for SAL and nonSAL households (Switzerland)

	SAL households coefficients	nonSAL households coefficients	coefficients difference SAL - nonSAL
	B SAL	B nonSAL	
(Constant)	3.38	2.19	1.18
HEDI as % of country median HEDI (MHEDI)	-0.05	-0.02	-0.03
HEDI as % MHEDI x Housing cost overburden (40%)	0.02	-0.04	0.06
Housing cost overburden (40%)	-4.01	4.21	-8.22
Total housing costs subjective heavy burden	11.22	4.69	6.53
Debt repayments a heavy burden	13.06	11.09	1.97
Low work intensity	7.57	4.57	3.00
Overcrowded household	6.22	1.86	4.37
No non-material support	1.96	1.65	0.32
No material support	5.10	2.84	2.26
General bad health circumstances	2.84	5.96	-3.12
Sex (ref: male)			
female	0.57	0.34	0.23
Age (ref: 50-64)			
16-34	-2.26	-0.63	-1.63
35-49	2.39	0.09	2.30
65-72	2.28	-0.32	2.60
73+	-1.57	-2.05	0.48
Education (ref: tertiary education)			
primary or lower vs tertiary	11.61	8.44	3.17
lower secondary vs tertiary	3.92	4.32	-0.40
upper secondary & post-secondary non-tertiary	0.54	1.17	-0.63
Activity status (ref: at work)			
unemployed	10.27	5.87	4.39
in retirement or early retirement	-2.84	-0.69	-2.15
other inactive person	0.36	1.25	-0.89
Tenure (ref: outright owner)			
owner paying mortgage	2.08	0.23	1.85
accommodation rented at prevailing or market rate	3.70	2.49	1.21
accommodation rented at a reduced rate	5.28	4.49	0.79
accommodation provided free	8.63	2.31	6.32
Household structure (ref: 2 adults no children)			
single person no children	3.91	0.31	3.60
other households no children	-0.46	-0.73	0.27
2 adults 1 or 2 children	0.41	0.38	0.03
2 adults 3 or more children	0.81	2.74	-1.93
single parent with 1 or more children	3.41	3.05	0.35
other households with children	-1.87	-0.39	-1.48
other households not classified	-2.81	-0.07 (p=0.007)	-2.74
*Not significant; for all other coefficients p < 0.001 (unless otherwise indicated)			
R² = 0.592 for SAL households regression.			
R² = 0.349 for nonSAL households regression.			

K.5.32 United Kingdom

Table K.75: Models-4 regression analysis coefficients for SAL and nonSAL households (United Kingdom)

	SAL households coefficients	nonSAL households coefficients	coefficients difference SAL - nonSAL
	B SAL	B nonSAL	
(Constant)	3.04	3.13	-0.09
HEDI as % of country median HEDI (MHEDI)	-0.03	-0.02	-0.01
HEDI as % MHEDI x Housing cost overburden (40%)	-0.06	-0.02	-0.03
Housing cost overburden (40%)	2.61	1.92	0.69
Total housing costs subjective heavy burden	13.36	10.29	3.07
Debt repayments a heavy burden	9.78	7.23	2.55
Low work intensity	3.00	4.35	-1.35
Overcrowded household	2.18	3.83	-1.66
No non-material support	1.03	2.60	-1.57
No material support	4.65	2.45	2.20
General bad health circumstances	2.16	2.78	-0.62
Sex (ref: male)			
female	1.34	0.74	0.60
Age (ref: 50-64)			
16-34	5.20	1.19	4.02
35-49	0.56	0.94	-0.38
65-72	-0.23	-0.17	-0.06
73+	-2.31	-1.28	-1.03
Education (ref: tertiary education)			
primary or lower vs tertiary	-7.26	11.86	-19.12
lower secondary vs tertiary	2.20	1.42	0.78
upper secondary & post-secondary non-tertiary	0.86	0.59	0.26
Activity status (ref: at work)			
unemployed	11.30	7.68	3.63
in retirement or early retirement	0.14	-1.21	1.35
other inactive person	3.62	1.52	2.10
Tenure (ref: outright owner)			
owner paying mortgage	1.96	0.66	1.30
accommodation rented at prevailing or market rate	8.15	5.56	2.59
accommodation rented at a reduced rate	4.15	8.64	-4.49
accommodation provided free	3.28	2.09	1.19
Household structure (ref: 2 adults no children)			
single person no children	1.65	1.43	0.22
other households no children	1.98	0.50	1.48
2 adults 1 or 2 children	3.08	0.46	2.62
2 adults 3 or more children	5.01	2.67	2.35
single parent with 1 or more children	2.23	5.64	-3.41
other households with children	3.70	0.45	3.25
other households not classified	-	-	-
*Not significant; for all other coefficients $p < 0.001$ (unless otherwise indicated)			
R² = 0.590 for SAL households regression.			
R² = 0.520 for nonSAL households regression.			

Appendix L. Reports by Disabled Persons' Organisations analysed in Chapter 8

Details on reports are updated up to 30 October 2021. Unless otherwise indicated, the date in brackets indicates the Convention on the Rights of Persons with Disabilities ratification date by the respective country.

L.1 Austria (26/09/2008)

Report 1

Organisation:	Autistic Minority International
Report:	List of Issues on Austria: "Eugenic indication" abortions – Written submission to the 20 th session of the Committee on the Rights of Persons with Disabilities
Date:	July 2018
Source:	https://tbinternet.ohchr.org/_layouts/15/treatybodyexternal/Download.aspx?symbolno=INT%2fCRPD%2fICS%2fAUT%2f32003&Lang=en

Report 2

Organisation:	Österreichischer Behindertenrat (Austrian Disability Council)
Report:	Second alternative report on the implementation of the UN Convention on the Rights of Persons with Disabilities in Austria - On the occasion of the second state report review before the UN Committee on the Rights of Persons with Disabilities
Date:	July 2018
Source:	https://tbinternet.ohchr.org/_layouts/15/treatybodyexternal/Download.aspx?symbolno=INT%2fCRPD%2fICS%2fAUT%2f31755&Lang=en

L.2 Belgium (02/07/2009)

Report 3

Organisation:	Belgian Disability Forum (BDF)
Report:	Alternative report presented for a coalition of organisations by the Belgian Disability Forum asbl (BDF) - Submission to the Committee on the Rights of Persons with Disabilities Within the framework of the 2 nd and 3 rd review of Belgium
Date:	February 2019
Source:	https://tbinternet.ohchr.org/_layouts/15/treatybodyexternal/Download.aspx?symbolno=INT%2fCRPD%2fICS%2fBEL%2f33875&Lang=en

Report 4

Organisation:	GRIP kom op voor inclusie
Report:	List of Issues prior to reporting for Belgium - Submission to the XXI session of the Committee on the Rights of Persons with Disabilities
Date:	February 2019
Source:	https://tbinternet.ohchr.org/_layouts/15/treatybodyexternal/Download.aspx?symbolno=INT%2fCRPD%2fICS%2fBEL%2f33830&Lang=en

L.3 Bulgaria (22/03/2012)

Report 5

Organisation:	Alliance for Protection against Gender Based Violence, Bulgarian Centre for Non-for-Profit Law, Centre for Inclusive Education, Centre for Independent Living, & Validity Foundation – Mental Disability Advocacy Centre
Report:	NGO and DPO joint submission for consideration at the 20 th Session of the United Nations Committee on the Rights of Persons with disabilities and the First Periodic of Bulgaria – Additional information, List of Issues
Date:	August 2017
Source:	https://tbinternet.ohchr.org/_layouts/15/treatybodyexternal/Download.aspx?symbolno=INT%2fCRPD%2fCSS%2fBGR%2f32175&Lang=en

Report 6

Organisation:	Spina Bifida and Hydorcephalus Bulgaria
Report:	Submission for the review of Bulgaria by the UN Committee on the Rights of Persons with Disabilities
Date:	August 2017
Source:	https://tbinternet.ohchr.org/_layouts/15/treatybodyexternal/Download.aspx?symbolno=INT%2fCRPD%2fICO%2fBGR%2f28481&Lang=en

Report 7

Organisation:	Spina Bifida and Hydrocephalus Bulgaria
Report:	Submission for the review of Bulgaria by the UN Committee on the Rights of Persons with Disabilities
Date:	July 2018
Source:	https://tbinternet.ohchr.org/_layouts/15/treatybodyexternal/Download.aspx?symbolno=INT%2fCRPD%2fICO%2fBGR%2f31894&Lang=en

L.4 Croatia (15/08/2007)

Report 8

Organisation:	Croatian Union of Associations of Persons with Disabilities (SOIH) and Partners
Report:	Alternative Report presented from a coalition of associations of persons with disabilities prior to the adoption by the Committee on the Rights of Persons with Disabilities of the List of Issues relating to Croatia – Submission to the UN Committee on the Rights of Persons with Disabilities within the framework of the 2nd, 3rd and 4th review of Croatia
Date:	February 2020
Source:	https://tbinternet.ohchr.org/_layouts/15/treatybodyexternal/Download.aspx?symbolno=INT%2fCRPD%2fICO%2fCRO%2f41596&Lang=en

Report 9

Organisation:	European Network on Independent Living & the Association for Self-Advocacy
Report:	ENIL and ASA submission for the List of Issues on Croatia
Date:	February 2020
Source:	https://tbinternet.ohchr.org/_layouts/15/treatybodyexternal/Download.aspx?symbolno=INT%2fCRPD%2fICS%2fCRO%2f41499&Lang=en

L.5 Cyprus (27/06/2011)

Report 10

Organisation:	Pancyprian Alliance for Disability
Report:	Submission of the Pancyprian Alliance for Disability in response to the List of Issues of the Committee on the Rights of Persons with Disabilities in relation to the initial report of Cyprus
Date:	February 2017
Source:	https://tbinternet.ohchr.org/_layouts/15/treatybodyexternal/Download.aspx?symbolno=INT%2fCRPD%2fCSS%2fCYP%2f26904&Lang=en

L.6 Czech Republic (28/09/2009)

Report 11

Organisation:	Czech National Disability Council, Association of the Deaf and Hard of Hearing in the Czech Republic, & Inclusion Czech Republic
Report:	Alternative report for the UN Committee on the Rights of Persons with Disabilities
Date:	February 2019
Source:	https://tbinternet.ohchr.org/_layouts/15/treatybodyexternal/Download.aspx?symbolno=INT%2fCRPD%2fICS%2fCZE%2f33833&Lang=en

Report 12

Organisation:	JDI Union for Deinstitutionalisation
Report:	Statement about the implementation of Article 19 CRPD in the Czech Republic for the UN Committee on the Rights of Persons with Disabilities
Date:	February 2019
Source:	https://tbinternet.ohchr.org/_layouts/15/treatybodyexternal/Download.aspx?symbolno=INT%2fCRPD%2fICS%2fCZE%2f33882&Lang=en

L.7 Denmark (24/07/2009)

Report 13

Organisation:	Disabled People's Organisations Denmark (DPOD)
Report:	Civil Society's suggestions to the UN Committee on the Rights of Persons with Disabilities regarding the 'List of Issues prior to reporting' on the Kingdom of Denmark
Date:	February 2019
Source:	https://tbinternet.ohchr.org/_layouts/15/treatybodyexternal/Download.aspx?symbolno=INT%2fCRPD%2fICS%2fDNK%2f33839&Lang=en

L.8 Estonia (30/05/2012)

Report 14

Organisation:	Estonian Chamber of Disabled People
Report:	Civil society comments to the state Response to the List of Issues in relation to the initial report of Estonia - Elaborated by The Estonian Chamber of Disabled People, the disability network in Estonia
Date:	February 2020
Source:	https://tbinternet.ohchr.org/_layouts/15/treatybodyexternal/Download.aspx?symbolno=INT%2fCRPD%2fCSS%2fEST%2f41440&Lang=en

Report 15

Organisation:	European Network on Independent Living (ENIL)
Report:	Submission of the European Network on Independent Living - ENIL in relation to the implementation of Article 19 of the UN Convention on the Rights of Persons with Disabilities in Estonia
Date:	February 2021
Source:	https://tbinternet.ohchr.org/_layouts/15/treatybodyexternal/Download.aspx?symbolno=INT%2fCRPD%2fCSS%2fEST%2f44539&Lang=en

L.9 Finland (11/05/2016)

No report by a Disabled Persons Organisation.

L.10 France (18/02/2010)

Report 16

Organisation:	Advocacy France
Report:	Contribution in connection with the 1st review of France by the UN CRPD Committee concerning the country's Initial Report and responses to the Committee's List of Issues - 25th session
Date:	August 2021
Source:	https://tbinternet.ohchr.org/_layouts/15/treatybodyexternal/Download.aspx?symbolno=INT%2fCRPD%2fCSS%2fFRA%2f46407&Lang=en

Report 17

Organisation:	Advocacy France
Report:	Draft List of Issues – Submission to the 12 th pre-sessional Working Group of the Committee on the Rights of Persons with Disabilities
Date:	September 2019
Source:	https://tbinternet.ohchr.org/_layouts/15/treatybodyexternal/Download.aspx?symbolno=INT%2fCRPD%2fICO%2fFRA%2f35629&Lang=en

Report 18

Organisation:	Alliance Autiste
Report:	Excerpts from our report on the implementation of the CRPD in France with an analysis of the French State answers to the List of Issues in the framework of the French State review on the 25 th session of the Committee on the Rights of Persons with Disabilities
Date:	August 2021
Source:	https://tbinternet.ohchr.org/_layouts/15/treatybodyexternal/Download.aspx?symbolno=INT%2fCRPD%2fCSS%2fFRA%2f46406&Lang=en

Report 19

Organisation:	Arrêt Traitements Forcé (ATF)
Report:	Update on parallel report on France – Submission to the 25 th session of the Committee on the Rights of Persons with Disabilities
Date:	August 2021
Source:	https://tbinternet.ohchr.org/_layouts/15/treatybodyexternal/Download.aspx?symbolno=INT%2fCRPD%2fCSS%2fFRA%2f45270&Lang=en

Report 20

Organisation:	Autistic Alliance in collaboration with the CLE Autistics
Report:	Questions of autistics' associations for the French State concerning the application of the Convention on the Rights of Persons with Disabilities
Date:	July 2019
Source:	https://tbinternet.ohchr.org/_layouts/15/treatybodyexternal/Download.aspx?symbolno=INT%2fCRPD%2fICO%2fFRA%2f35654&Lang=en

Report 21

Organisation:	CFHE Conseil Français des personnes Handicapées pour les questions Européennes
Report:	UN Convention on the Rights of Persons with Disabilities (CRPD), CFHE contribution to the UN Rights Committee - List of the main points raised after reading the French initial report
Date:	July 2019
Source:	https://tbinternet.ohchr.org/_layouts/15/treatybodyexternal/Download.aspx?symbolno=INT%2fCRPD%2fICO%2fFRA%2f37155&Lang=en

Report 22

Organisation:	Collectif pour la Liberté d'Expression des Autistes-CLE Autistes
Report:	Evaluation of France on the implementation of the International Convention on Human Rights for Persons with Disabilities
Date:	August 2021
Source:	https://tbinternet.ohchr.org/_layouts/15/treatybodyexternal/Download.aspx?symbolno=INT%2fCRPD%2fCSS%2fFRA%2f46410&Lang=en

Report 23

Organisation:	Collectif Vérité et justice pour Nathalie
Report:	Submission to the 25th session of the United Nations Committee on the Rights of Persons with Disabilities
Date:	August 2021
Source:	https://tbinternet.ohchr.org/_layouts/15/treatybodyexternal/Download.aspx?symbolno=INT%2fCRPD%2fCSS%2fFRA%2f46408&Lang=en

Report 24

Organisation:	European Disability Forum
Report:	Information note to CRPD committee experts – Disability priorities at the European level
Date:	July 2021
Source:	https://tbinternet.ohchr.org/_layouts/15/treatybodyexternal/Download.aspx?symbolno=INT%2fCRPD%2fCSS%2fFRA%2f45236&Lang=en

Report 25

Organisation:	FEDE 100% Handinamique
Report:	Alternative report of the FEDE 100% handinamique to the United Nations of Human rights council in the perspective of the periodical exam of France
Date:	July 2021
Source:	https://tbinternet.ohchr.org/_layouts/15/treatybodyexternal/Download.aspx?symbolno=INT%2fCRPD%2fCSS%2fFRA%2f46435&Lang=en

L.11 Germany (24/02/2009)

Report 26

Organisation:	Deutscher Behindertenrat (DBR), Bundesarbeitsgemeinschaft der Freien Wohlfahrtspflege (BAGFW), Die Fachverbände für Menschen mit Behinderung, LIGA Selbstvertretung [German Disability Council, Federal Association of Non-Statutory Welfare, Professional Associations for People with Disabilities, German League of Disabled Person's Organisations]
Report:	Update for the 2 nd Federal review of Germany for the UN committee for the UN Convention on the Rights of Persons with Disabilities
Date:	June 2018
Source:	https://tbinternet.ohchr.org/_layouts/15/treatybodyexternal/Download.aspx?symbolno=INT%2fCRPD%2fNGO%2fDEU%2f32459&Lang=en

L.12 Greece (31/05/2012)

Report 27

Organisation:	National Confederation of Disabled People of Greece
Report:	Human rights and persons with disabilities – Alternative report of Greece 2019 (final version) and response to the List of Issues
Date:	July 2019
Source:	https://tbinternet.ohchr.org/_layouts/15/treatybodyexternal/Download.aspx?symbolno=INT%2fCRPD%2fCSS%2fGRC%2f35648&Lang=en

L.13 Hungary (20/07/2007)

Report 28

Organisation:	Hand in Hand Foundation, Hungarian Autistic Society, Hungarian Civil Liberties Union, Hungarian Federation of the Blind and Partially Sighted, Mental Disability Advocacy Centre, Mental Health Interest Forum, National Association of the Deaf and Hard of Hearing, National Council of Disabled Persons' Organisations, National Federation of Disabled Persons' Associations
Report:	Joint DPO and CSO submission to the Committee on the Rights of Persons with Disabilities for consideration when compiling the List of Issues prior to reporting for the second periodic report of Hungary
Date:	March – April 2017
Source:	https://tbinternet.ohchr.org/_layouts/15/treatybodyexternal/Download.aspx?symbolno=INT%2fCRPD%2fICS%2fHUN%2f26895&Lang=en

Report 29

Organisation:	Hungarian Association for People with Intellectual Disabilities (EFOESZ)
Report:	List of Issues written submission - Hungary
Date:	March – April 2017
Source:	https://tbinternet.ohchr.org/_layouts/15/treatybodyexternal/Download.aspx?symbolno=INT%2fCRPD%2fICS%2fHUN%2f26896&Lang=en

Report 30

Organisation:	Hungarian Association for People with Intellectual Disabilities (EFOESZ)
Report:	Periodic reporting of Hungary to the Committee on the Rights of Persons with Disabilities under the simplified reporting procedure
Date:	May 2018
Source:	https://tbinternet.ohchr.org/_layouts/15/treatybodyexternal/Download.aspx?symbolno=INT%2fCRPD%2fICS%2fHUN%2f31035&Lang=en

Report 31

Organisation:	Hungarian Civil Liberties Union, Living Independently in the Community Advocacy Group- Validity Foundation - Mental Disability Advocacy Centre
Report:	NGO information to the UN Committee on the Rights of Persons with Disabilities – In response to the List of Issues prior to reporting in relation to the combined second and third periodic reports of Hungary
Date:	February 2020
Source:	https://tbinternet.ohchr.org/_layouts/15/treatybodyexternal/Download.aspx?symbolno=INT%2fCRPD%2fCSS%2fHUN%2f41492&Lang=en

Report 32

Organisation:	National Federation of Associations of Persons with Physical Disabilities (MEOSZ)
Report:	Alternative report for the periodic review on the implementation of the UN Convention on the Rights of Persons with Disabilities (CRPD) in Hungary
Date:	December 2019
Source:	https://tbinternet.ohchr.org/_layouts/15/treatybodyexternal/Download.aspx?symbolno=INT%2fCRPD%2fCSS%2fHUN%2f41334&Lang=en

L.14 Iceland (23/09/2016)

No report by a Disabled Persons Organisation.

L.15 Ireland (20/03/2018)

No report by a Disabled Persons Organisation.

L.16 Italy (15/05/2009)

Report 33

Organisation:	Coordinamento Nazionale Famiglie Disabili
Report:	Rapporto alternativo al Comitato delle Nazioni Unite sui Diritti delle Persone con Disabilità – English summary
Date:	July 2016
Source:	https://tbinternet.ohchr.org/_layouts/15/treatybodyexternal/Download.aspx?symbolno=INT%2fCRPD%2fCSS%2fITA%2f25451&Lang=en

Report 34

Organisation:	Forum Italiano sulla Disabilità (Italian Disability Forum)
Report:	First alternative report to the UN Committee on the Rights of Persons with Disabilities
Date:	January 2016
Source:	https://tbinternet.ohchr.org/_layouts/15/treatybodyexternal/Download.aspx?symbolno=INT%2fCRPD%2fNGO%2fITA%2f22800&Lang=en

Report 35

Organisation:	Forum Italiano sulla Disabilità (Italian Disability Forum)
Report:	Reply to the List of Issues in relation to the initial report of Italy, adopted by the pre-sessional working group of the Committee on the Rights of Persons with Disabilities
Date:	July 2016
Source:	https://tbinternet.ohchr.org/_layouts/15/treatybodyexternal/Download.aspx?symbolno=INT%2fCRPD%2fCSS%2fITA%2f24625&Lang=en

L.17 Latvia (01/03/2010)

Report 36

Organisation:	Latvian Movement for Independent Living
Report:	Proposal for the List of Issues in relation to the initial report of the Republic of Latvia
Date:	March 2017
Source:	https://tbinternet.ohchr.org/_layouts/15/treatybodyexternal/Download.aspx?symbolno=INT%2fCRPD%2fICO%2fLVA%2f26862&Lang=en

Report 37

Organisation:	SUSTENTO The Latvian Umbrella Body of Disability Organisations
Report:	Proposal for the List of Issues in relation to the initial report of the Republic of Latvia
Date:	February 2017
Source:	https://tbinternet.ohchr.org/_layouts/15/treatybodyexternal/Download.aspx?symbolno=INT%2fCRPD%2fICO%2fLVA%2f26612&Lang=en

Report 38

Organisation:	SUSTENTO The Latvian Umbrella Body of Disability Organisations
Report:	Response to the List of Issues – Submission for the review of Latvia by the CRPD Committee
Date:	June 2017
Source:	https://tbinternet.ohchr.org/_layouts/15/treatybodyexternal/Download.aspx?symbolno=INT%2fCRPD%2fCSS%2fLVA%2f28449&Lang=en

L.18 Lithuania (18/08/2010)

Report 39

Organisation:	Lietuvos Neigaliuju Forumas (LNF), Lithuanian Disability Forum
Report:	Proposal for the List of Issues in relation to the initial report of the Republic of Lithuania
Date:	August 2015
Source:	https://tbinternet.ohchr.org/_layouts/15/treatybodyexternal/Download.aspx?symbolno=INT%2fCRPD%2fICO%2fLTU%2f21462&Lang=en

Report 40

Organisation:	Lietuvos Neigaliuju Forumas (LNF), Lithuanian Disability Forum
Report:	Alternative report – Prepared for the UN Committee on the Rights of Persons with Disabilities for the discussion of the initial report of the Republic of Lithuania on the implementation of the UN Convention on the Rights of Persons with Disabilities
Date:	March 2016
Source:	https://tbinternet.ohchr.org/_layouts/15/treatybodyexternal/Download.aspx?symbolno=INT%2fCRPD%2fCSS%2fLTU%2f23330&Lang=en

L.19 Luxembourg (26/09/2011)

Report 41

Organisation:	Nemme Mat Eis and other Luxembourg DPOs
Report:	Alternative report on implementation of the United Nations Convention on the Rights of Persons with Disabilities
Date:	December 2016
Source:	https://tbinternet.ohchr.org/_layouts/15/treatybodyexternal/Download.aspx?symbolno=INT%2fCRPD%2fCSS%2fLUX%2f26160&Lang=en

L.20 Malta (10/10/2012)

No report by a Disabled Persons Organisation.

L.21 Netherlands (14/06/2016)

No report by a Disabled Persons Organisation.

L.22 Norway (03/06/2013)

Report 42

Organisation:	The Civil Society Coalition Norway 2019 Joint Submission from 125 DPOs/NGOs
Report:	Civil society's submission for the List of issues on Norway's initial report to the UN Committee on the Rights of Persons with Disabilities
Date:	June 2018
Source:	https://tbinternet.ohchr.org/_layouts/15/treatybodyexternal/Download.aspx?symbolno=INT%2fCRPD%2fCSS%2fNOR%2f33866&Lang=en

Report 43

Organisation:	The Civil Society Coalition Norway 2019 Joint Submission from 125 DPOs/NGOs
Report:	Alternative report on the Rights of Persons with Disabilities
Date:	February 2019
Source:	https://tbinternet.ohchr.org/_layouts/15/treatybodyexternal/Download.aspx?symbolno=INT%2fCRPD%2fCSS%2fNOR%2f33866&Lang=en

Report 44

Organisation:	We Shall Overcome (WSO)
Report:	List of Issues – Submission to the 10 th Pre-Sessional Working Group of the Committee on the Rights of Persons with Disabilities
Date:	July 2018
Source:	https://tbinternet.ohchr.org/_layouts/15/treatybodyexternal/Download.aspx?symbolno=INT%2fCRPD%2fICO%2fNOR%2f31986&Lang=en

Report 45

Organisation:	We Shall Overcome (WSO)
Report:	Submission to the 21 st session of the Committee on the Rights of Persons with Disabilities – Review of Norway’s initial report
Date:	February 2019
Source:	https://tbinternet.ohchr.org/_layouts/15/treatybodyexternal/Download.aspx?symbolno=INT%2fCRPD%2fCSS%2fNOR%2f33929&Lang=en

L.23 Poland (25/09/2012)

Report 46

Organisation:	Association Institute for Independent Living
Report:	Answers to the UN Committee on the Rights of Persons with Disabilities List of Issues within the evaluation of the Polish report on the implementation of the UN Convention on the Rights of Persons with Disabilities
Date:	July 2018
Source:	https://tbinternet.ohchr.org/_layouts/15/treatybodyexternal/Download.aspx?symbolno=INT%2fCRPD%2fCSS%2fPOL%2f32001&Lang=en

Report 47

Organisation:	Association of Women with Disabilities ONE.pl & Women Enabled International
Report:	Submission to the CRPD Committee for its review of Poland
Date:	July 2018
Source:	https://tbinternet.ohchr.org/_layouts/15/treatybodyexternal/Download.aspx?symbolno=INT%2fCRPD%2fCSS%2fPOL%2f31934&Lang=en

Report 48

Organisation:	KSK Fundacja
Report:	Alternative report on the implementation of the UN Convention on the Rights of Persons with Disabilities
Date:	September 2015
Source:	https://tbinternet.ohchr.org/_layouts/15/treatybodyexternal/Download.aspx?symbolno=INT%2fCRPD%2fNGO%2fPOL%2f21651&Lang=en

Report 49

Organisation:	Konwencja
Report:	Alternative report on the implementation of the UN Convention on the Rights of Persons with Disabilities – Update with proposed questions in the problem areas
Date:	January 2018
Source:	https://tbinternet.ohchr.org/_layouts/15/treatybodyexternal/Download.aspx?symbolno=INT%2fCRPD%2fICO%2fPOL%2f30096&Lang=en

L.24 Portugal (23/09/2009)

Report 50

Organisation:	Autistic Minority International
Report:	Review of Portugal: Neglect of commitments and autistic persons
Date:	February 2016
Source:	https://tbinternet.ohchr.org/_layouts/15/treatybodyexternal/Download.aspx?symbolno=INT%2fCRPD%2fCSS%2fPRT%2f23175&Lang=en

Report 51

Organisation:	Disability Council International
Report:	Consideration of country reports, Portugal – DisabCouncil’s independent review
Date:	July 2015
Source:	https://tbinternet.ohchr.org/_layouts/15/treatybodyexternal/Download.aspx?symbolno=INT%2fCRPD%2fICO%2fPRT%2f21333&Lang=en

Report 52

Organisation:	Observatório da Deficiencia e Direitos Humanos
Report:	Parallel report about the monitoring of the rights of persons with disabilities in Portugal
Date:	June 2015
Source:	https://tbinternet.ohchr.org/_layouts/15/treatybodyexternal/Download.aspx?symbolno=INT%2fCRPD%2fICO%2fPRT%2f21113&Lang=en

L.25 Romania (31/01/2011)

No report by a Disabled Persons Organisation.

L.26 Serbia (31/01/2009)

Report 53

Organisation:	Disability Council International
Report:	Consideration of country reports, Serbia – DisabCouncil’s independent review
Date:	July 2015
Source:	https://tbinternet.ohchr.org/_layouts/15/treatybodyexternal/Download.aspx?symbolno=INT%2fCRPD%2fICO%2fSRB%2f21334&Lang=en

Report 54

Organisation:	National Organization of Persons with Disabilities of Serbia, Center for Independent Living of PWDs Serbia (CIL Serbia), Center for Society Orientation (COD), & members of NOOIS
Report:	Alternative report on the implementation of the Convention on the Rights of Persons with Disabilities in the Republic of Serbia
Date:	July 2015
Source:	https://tbinternet.ohchr.org/_layouts/15/treatybodyexternal/Download.aspx?symbolno=INT%2fCRPD%2fLIT%2fSRB%2f21108&Lang=en

L.27 Slovakia (26/05/2010)

Report 55

Organisation:	The Slovak Disability Council, Association for Help to People with Intellectual Disabilities in the Slovak Republic, Council for Counselling in Social Work, Organisation of Muscular Dystrophy in Slovak Republic, Platform of Parents of Children with Disabilities, Slovak Blind and Partially Sighted Union, SOCIA Foundation
Report:	Implementation of the United Nations Convention on the Rights of Persons with Disabilities in Slovakia – Alternative report for the UNCRPD Committee proposed by the DPOs in the Slovak Republic
Date:	July 2019
Source:	https://tbinternet.ohchr.org/_layouts/15/treatybodyexternal/Download.aspx?symbolno=INT%2fCRPD%2fICS%2fSVK%2f35652&Lang=en

L.28 Slovenia (24/04/2008)

Report 56

Organisation:	European Network on Independent Living (ENIL), Mental Health Europe, Autism Europe
Report:	Open letter against plans to build a new institution
Date:	December 2017
Source:	https://tbinternet.ohchr.org/_layouts/15/treatybodyexternal/Download.aspx?symbolno=INT%2fCRPD%2fCSS%2fSVN%2f29986&Lang=en

Report 57

Organisation:	NSIOS National Council of Disabled Persons' Organizations of Slovenia
Report:	Alternative report on the implementation of the provisions of the Convention on the Rights of Persons with Disabilities in the Republic of Slovenia (2008-2017)
Date:	December 2017
Source:	https://tbinternet.ohchr.org/_layouts/15/treatybodyexternal/Download.aspx?symbolno=INT%2fCRPD%2fCSS%2fSVN%2f30283&Lang=en

L.29 Spain (03/12/2007)

Report 58

Organisation:	ActivaMent Catalunya Associació & Hierbabuena Asociación para la Salud Mental
Report:	Alternative report for Spain for the 21 st session of the Committee on the Rights of Persons with Disabilities specific to the First Person Collective; ex-users, users and survivors of psychiatry (psychosocial disability)
Date:	February 2019
Source:	https://tbinternet.ohchr.org/_layouts/15/treatybodyexternal/Download.aspx?symbolno=INT%2fCRPD%2fCSS%2fESP%2f33880&Lang=en

Report 59

Organisation:	European Network on Independent Living (ENIL) and Federación Vida Independiente (FEVI)
Report:	Implementation of Article 19 of the UN Convention on the Rights of Persons with Disabilities in Spain
Date:	February 2019
Source:	https://tbinternet.ohchr.org/_layouts/15/treatybodyexternal/Download.aspx?symbolno=INT%2fCRPD%2fCSS%2fESP%2f33976&Lang=en

Report 60

Organisation:	European Network of (Ex) Users and Survivors of Psychiatry (ENUSP)
Report:	ENUSP proposals for the List of Issues on Spain
Date:	February 2017
Source:	https://tbinternet.ohchr.org/_layouts/15/treatybodyexternal/Download.aspx?symbolno=INT%2fCRPD%2fICS%2fESP%2f26882&Lang=en

L.30 Sweden (15/12/2008)

Report 61

Organisation:	Swedish Disability Rights Federation
Report:	List of Issues prior to reporting for Sweden – Submission to the 20 th Session of the Committee on the Rights of Persons with Disabilities
Date:	July 2018
Source:	https://tbinternet.ohchr.org/_layouts/15/treatybodyexternal/Download.aspx?symbolno=INT%2fCRPD%2fICS%2fSWE%2f31836&Lang=en

L.31 Switzerland (15/04/2014 accession)

Report 62

Organisation:	Inclusion Handicap
Report:	Initial state report procedure for Switzerland before the UN Committee on the Rights of Persons with Disabilities – Submission concerning the “List of Issues”
Date:	August 2019
Source:	https://tbinternet.ohchr.org/_layouts/15/treatybodyexternal/Download.aspx?symbolno=INT%2fCRPD%2fICO%2fCHE%2f35844&Lang=en

L.32 United Kingdom (08/06/2009)

Report 63

Organisation:	Alzheimer’s Society, Dementia Policy Think Tank, Three Nations Dementia Working Group, Young Dementia Network
Report:	List of Issues in relation to the initial report of the United Kingdom of Great Britain and Northern Ireland
Date:	July 2017
Source:	https://tbinternet.ohchr.org/_layouts/15/treatybodyexternal/Download.aspx?symbolno=INT%2fCRPD%2fCSS%2fGBR%2f28299&Lang=en

Report 64

Organisation:	Autistic Minority International
Report:	Review of the United Kingdom: Ageing and premature death on the autism spectrum – Written submission to the 18th session of the Committee on the Rights of Persons with Disabilities
Date:	July 2017
Source:	https://tbinternet.ohchr.org/_layouts/15/treatybodyexternal/Download.aspx?symbolno=INT%2fCRPD%2fCSS%2fGBR%2f28459&Lang=en

Report 65

Organisation:	Disability Rights UK and Disability Wales
Report:	Implementation of the United Nations Convention on the Rights of Persons with Disabilities: Alternative Report - Great Britain
Date:	December 2016
Source:	https://tbinternet.ohchr.org/_layouts/15/treatybodyexternal/Download.aspx?symbolno=INT%2fCRPD%2fICO%2fGBR%2f26906&Lang=en

Report 66

Organisation:	Reclaiming Our Futures Alliance (ROFA)
Report:	Shadow report from the Reclaiming our Futures Alliance on the UK initial report on the UN Convention on the Rights of Persons with Disabilities
Date:	February 2017
Source:	https://tbinternet.ohchr.org/_layouts/15/treatybodyexternal/Download.aspx?symbolno=INT%2fCRPD%2fICO%2fGBR%2f26801&Lang=en

Abbreviations

AROP	At-risk-of poverty
AROPE	At-risk-of poverty or social exclusion
CRPD	Committee on the Rights of Persons with Disabilities (United Nations)
DIC	Deviance information criterion
DPOs	Organisations of Disabled Persons
ECCL	European Coalition for Community Living
EDF	European Disability Forum
EDS10-20	European Disability Strategy 2010-2020
EDS21-30	Union of Equality: Strategy for the Rights of Persons with Disabilities 2021-2030
ENIL	European Network on Independent Living
EU	European Union
EU-SILC	European Union Statistics on Income and Living Conditions
GALI	Global Activity Limitation Indicator
GDP	Gross Domestic Product
GDPPC-PPS	Gross Domestic Product Per Capita in Purchasing Power Standards
HEDI	Household Equivalised Disposable Income
ILF	Independent Living Fund, UK
LWI	Low Work Intensity
MD	Material Deprivation
MSD	Material and Social Deprivation
MHEDI	Median Household Equivalised Disposable Income (total)
OECD	Organisation for Economic Co-operation and Development

PA	Personal Assistance
PPS	Purchasing Power Standards
SILC	Scottish Independent Living Fund
SMD	Severe Material Deprivation
SMSD	Severe Material and Social Deprivation
TDHI	Total disposable household income
TDHIBST	Total disposable household income before social transfers
UDB	EU-SILC User Database
UK	United Kingdom
UN	United Nations
UNCRPD	United Nations Convention on the Rights of Persons with Disabilities
UoM	University of Malta
UoY	University of York

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