

**Developing a holistic framework of key categories of
influences that shape knowledge sharing from an
individual perspective**

Alexander Schauer

Submitted for the degree of PhD in Knowledge Management

University of Sheffield, Information School

Submitted July 2014

Acknowledgements

I am very thankful for the extensive support that I have received from numerous people over the course of this thesis.

Firstly I want to recognise my primary supervisor Dr. Ana C Vasconcelos and my second supervisor Dr. Barbara Sen. They have given me invaluable advice on theoretical aspects and provided me with extensive, constructive feedback to move the thesis towards completion.

Secondly I would like to acknowledge the altruistic support and practical advice received from Donna G., Dr. Helen Partridge, Nick H. and of course my girlfriend, parents and grandmother.

Thirdly I want to thank the friendly and helpful staff and colleagues at the Information School at the University of Sheffield who have always been open to hear the countless questions and queries I have had.

Lastly, but definitely not least, without the generous time that interviewees have given me, no findings would have emerged and it would not have been possible to complete the thesis – thank you all.

Abstract

The aim of this thesis is to develop a holistic framework that depicts key categories of influences that shape individual perceptions of knowledge sharing within an organisational setting. This aim stems from a systematic literature review that indicates that despite the large volume of literature in regards to knowledge sharing, the field has not yet arrived at a consensus as to the key categories of influences, defined at a high level, that shape individuals' knowledge sharing perceptions.

In order to uncover the key categories of influences, an exploratory and qualitative case study strategy was executed. Empirical data were gathered from a total of 24 interviewees that were based in four different country branches (i.e. China, the Netherlands, the UK and the US) of a single IT services organisation.

Using constant comparison, findings point towards a holistic framework that depicts four key categories of influences that shape knowledge sharing from an individual perspective. The first key influence revolves around institutions which act as a united entity on individual perceptions of knowledge sharing. The second key influence fundamentally different in nature concentrates on relations between individuals sharing knowledge. The third key influence focuses on the individuals themselves (called sharers) and how their attitudes and characteristics can shape their knowledge sharing perceptions. The fourth and final key influence centres on knowledge itself and how this can shape individual perceptions of knowledge sharing.

In addition, findings suggest that the four key influences not only shape knowledge sharing independently but that all four key influences are intertwined and together form a holistic framework.

Combined, these two sets of findings indicate that knowledge sharing from an individual-level perspective is a more complex phenomenon than currently portrayed in the literature, which has focused on some of the key influences or depicted some of the interrelationships. Yet to better understand the knowledge sharing phenomenon from an individual perspective all four key influences, each being fundamentally different in nature, and their relationships should be taken into account.

Table of contents

Figures and tables	vii
Figures	vii
Tables	vii
1 Introduction.....	1
1.1 Focus of research and aspired contributions	1
1.2 Research aim, objectives, strategy and scope.....	3
1.3 Thesis structure and chain of arguments	4
2 Literature review	7
2.1 Introduction.....	7
2.2 Review of the knowledge sharing literature	10
2.3 Reviews and meta-analyses illuminating the knowledge sharing landscape.....	12
2.3.1 Factors that can influence knowledge sharing success and how to evaluate successful knowledge sharing activities	13
2.3.2 A systematic review of knowledge transfer and exchange studies in the health care policy context	16
2.3.3 Antecedents and consequences on intra- and inter-organisational knowledge transfer	19
2.3.4 Conceptualisations, processes, benefits and factors influencing knowledge transfer	22
2.3.5 Existing individual-level knowledge sharing research and future research directions	23
2.3.6 How knowledge producing institutions, intermediaries and decision making groups influence policymaking or organisational behaviour through collective-level knowledge exchange	27
2.3.7 Knowledge sharing concepts and research strategies of sustainable development approaches in a civil engineering-related context	30
2.3.8 Antecedents that influence individuals' knowledge sharing intentions and behaviour within organisations	33
2.3.9 Synopsis.....	37
2.4 Categories of influences shaping knowledge sharing as perceived by individual studies.....	44
2.5 The level of analysis and first research objective.....	51

2.6	Contextual variations affecting categories of influences and the second research objective	53
2.7	Summary.....	55
3	Methodology	57
3.1	Introduction.....	57
3.2	Philosophical worldviews	57
3.2.1	Epistemological worldview.....	58
3.2.2	Ontological worldview.....	59
3.2.3	Axiological worldview.....	61
3.2.4	Rhetorical worldview.....	61
3.2.5	Methodological worldview.....	62
3.2.6	Summary	62
3.3	Strategies of inquiry	63
3.3.1	Case study strategy	65
3.3.2	Comparative strategy	66
3.3.3	Cross sectional strategy.....	66
3.3.4	Experimental strategy	67
3.3.5	Longitudinal strategy.....	68
3.3.6	Discussion	68
3.4	Research methods	70
3.4.1	Survey research method	70
3.4.2	Ethnographic research method.....	72
3.4.3	Qualitative interview research method	72
3.4.4	Discussion	73
3.5	Research setting	74
3.6	Phase I - pilot study of the qualitative interviews	77
3.6.1	Interview data collection methods.....	77
3.6.2	Sampling and location	78
3.6.3	Administration.....	80
3.6.4	Instrument.....	80
3.7	Phase II – execution of qualitative interviews in branches located in China, the Netherlands and the US	81
3.7.1	Interview data collection method	82
3.7.2	Sampling and location	82
3.7.3	Administration.....	82

3.7.4	Instrument.....	82
3.7.5	Timeline.....	83
3.8	Interview analysis techniques	83
3.8.1	Interpretative phenomenological analysis.....	84
3.8.2	Grounded theory.....	84
3.8.3	Constant comparative method	84
3.8.4	Template analysis.....	85
3.8.5	Framework analysis.....	85
3.8.6	Discussion.....	86
3.9	Application of constant comparison to this study.....	87
3.10	Summary.....	92
4	Developing a holistic framework that depicts key categories of influences – findings from the qualitative interviews	94
4.1	Introduction.....	94
4.2	Contextualising the findings	95
4.3	Four key categories of influences, each being fundamentally different in nature, and their susceptibility to contextual differences	100
4.3.1	Institutions as first key category of influence	100
4.3.2	Relations as second key category of influence.....	117
4.3.3	The sharer as third key category of influence	123
4.3.4	Knowledge as fourth key category of influence.....	148
4.4	Interrelationships between the four key categories of influences	152
4.4.1	Institution – sharer interrelationships.....	152
4.4.2	Sharer – relations interrelationships.....	153
4.4.3	Relations – institution interrelationships	154
4.4.4	Institution – knowledge interrelationships	155
4.4.5	Knowledge - sharer interrelationships	156
4.4.6	Knowledge - relations interrelationships	156
4.4.7	Summary	158
4.5	Summary.....	158
5	Synthesis and discussion of the findings	162
5.1	Introduction.....	162
5.2	Comparison of a five category theoretical framework with the developed holistic framework.....	164

5.2.1	Conceptualisation of the categories.....	165
5.2.2	The importance of relationships between sharers	167
5.2.3	Synergies and tensions arising from interrelationships between categories	169
5.2.4	Summary	172
5.3	Conceptualising key categories of influences on the basis of being fundamentally different in nature.....	173
5.4	The holistic framework in the view of varying contexts.....	187
5.5	Summary.....	190
6	Conclusion	193
6.1	Contributions to knowledge	193
6.2	Theoretical implications	198
6.3	Practical implications.....	200
6.4	Limitations	201
6.5	Future research directions	203
	References.....	204
	Appendices	225
	Appendix A: Databases and search terms for the systematic literature review ..	225
	Databases.....	225
	Conference proceedings	246
	Higher degree dissertations	252
	Grey literature.....	253
	Appendix B: Databases and search terms utilised to obtain number of knowledge sharing studies per country	258
	Appendix C: Data saturation with UK interviewees.....	263
	Appendix D: Final interview guide for Phases I and II.....	264
	Appendix E: Twenty-two qualitative data analysis techniques	269
	Appendix F: Defining sharer and other-sharer	273
	Appendix G: Copyright permission confirmations.....	276

Figures and tables

Figures

Figure 2.1. Steps involved in conducting the literature review.	11
Figure 2.2. Five contexts of knowledge sharing.	14
Figure 2.3. A framework of knowledge sharing research.	25
Figure 2.4. Antecedents of knowledge sharing.	34
Figure 2.5. Summary of results.	35
Figure 2.6. Summary of underlying assumptions surfacing from the eight meta-analyses and reviews.	42
Figure 2.7. Summary of categories of influences that shape knowledge sharing according to the eight reviews.	43
Figure 2.8. SECI model of knowledge creation.	48
Figure 3.1. Selection of philosophical worldviews.	63
Figure 3.2. Selection of a strategy of inquiry.	70
Figure 3.3. Main modes of administration of a survey.	71
Figure 3.4. Selection of a research method.	74
Figure 3.5. Interview guide topics.	81
Figure 3.6. Constant comparison data analysis technique- data to key category. .	88
Figure 5.1. Comparison of S. Wang and Noe (2010) with conceptualisation of key categories of influences in this thesis.	175

Tables

Table 2.1 Summary of studies' KS concepts and main findings.	31
Table 2.2 Summary of reviews/meta-analyses and their context, focal point within knowledge sharing and level of analysis.	40
Table 2.3 Knowledge, individual, organisational and other influences shaping knowledge sharing.	46
Table 3.1 Term comparison of Creswell (2009) and Bryman (2012)	64
Table 4.1 Selected interviewee demographics	99
Table 4.2 Interview findings for the first key category of influence - institution .	116
Table 4.3 Interview findings for the second key category of influence - relations	122
Table 4.4 Interview findings for the third key category of influence – sharer sub-section.	138

Table 4.5 Interview findings for the third key category of influence – other-sharer sub-section.....	145
Table 4.6 Interview findings for the third key category of influence – sharer	147
Table 4.7 Interview findings for the fourth key category of influence – knowledge	151
Table 5.1 Meta-analyses and narrative reviews mapped against the newly developed holistic framework	177
Table 5.2 13 individual studies mapped against the newly developed holistic framework.....	184
Table B.0.1 Search terms and exclusion criteria utilised across three databases and the number of knowledge sharing studies per country.....	259
Table B.0.2 Number of knowledge sharing studies per country retrieved from ABI/Inform Complete, EBSCO and Web of Science	260
Table C.0.1 Data saturation in the UK.....	263
Table E.0.1 Qualitative data analysis methods.....	269
Table F.0.1 Terminology used to describe individuals sharing knowledge.....	273

1 Introduction

1.1 Focus of research and aspired contributions

For more than 2,300 years, humans have contemplated and developed theories surrounding the difficult themes of ‘knowledge’ and ‘knowledge sharing’. At first, the discourse on knowledge was addressed at a philosophical level as recorded by classical works such as the *Theaetetus* by Plato (trans. 2008, p. 107). Since the 19th century, the themes have expanded to the economic domain through theorists such as Marshall (1890, p. 115), Drucker (1959, p. 120; 1999, p. 79) and Nonaka and Takeuchi (1995). Arguing that knowledge provides an economic advantage has led to the claim that the world has now reached the knowledge age where wealth is based on the possession and utilisation of knowledge (Dalkir, 2013, p. 79; Rabie, 2013, p. 36). In order to harness that knowledge, organisations ought to manage it (Mousumi Roy, Chatterjee, & Linnanen, 2012, p. 206).

The activities that need to be considered to manage that knowledge have been extensively explored, as a study by Heisig (2009, p. 8) illustrates. In the period between 1995 and 2003 alone, the author¹ found 117 knowledge management frameworks that outlined the activities specifically associated with managing knowledge. These activities form a knowledge life cycle generally following the pattern of knowledge creation, identification, storage, sharing, acquisition, and use (Heisig, 2009, p. 10; Lemmetyinen, 2007, p. 17; Salisbury, 2003). The activity in the life cycle written about most frequently is knowledge sharing (Heisig, 2009, p. 10). This suggests that knowledge sharing is an important factor to consider when seeking to manage knowledge within organisations.

Yet knowledge sharing is a complex activity to manage and authors have described a range of categories of influences that they argue shape knowledge sharing perceptions. That is, factors or antecedents that affect individuals’ knowledge sharing attitudes, intentions or practices. At least 30 different categories of influences have been extracted from the systematic literature review executed in Chapter 2. While this may be partially due to different levels of analysis (e.g. individual, organisational or collective levels), the outcome from the review indicates that despite the large accumulation of debates, theories and

¹ The words ‘author’ or ‘authors’ refer to the previously cited reference.

empirical data, the field has not yet arrived at a consensus as to a set of key categories of influences that shape knowledge sharing perceptions.

In addition, in their knowledge sharing frameworks authors have either omitted how context (such as company branches located in different countries) can influence their key categories of influences (e.g. Luo & Yin, 2008; S. Wang & Noe, 2010) or have predominantly limited their framework to a single context (e.g. Zhang, Chen, Vogel, Yuan, & Guo, 2010, p. 109). However, studies conducted by authors such as Chow, Deng, and Ho (2000) or Kumar (2004) and a meta-analysis undertaken by Witherspoon, Bergner, Cockrell, and Stone (2013) indicate that contextual differences can have an effect on key categories of influences.

The importance of moving towards a consensus on what key categories of influences shape knowledge sharing perceptions and establishing whether these key influences are susceptible to contextual differences is based on calls from existing literature. For instance, Beesley and Cooper (2008, p. 50) argued that without 'consensus on the terms used to describe components of KM [a ...] rigorous debate [is] difficult'. This, it is argued, is equally applicable in the area of knowledge sharing, where authors use different terminology to describe key influences. For example, Cummings (2003, p. 1) called two influences source and recipient while Luo and Yin (2008, p. 3) termed them knowledge provider and knowledge receiver. Reading the articles suggests that these terms are identical, however this may not be clear and thus can impede a rigorous debate. Not only is a thorough discussion problematic without moving toward a consensus, a shared understanding cannot be created (Smylie, 2011, p. 182) and therefore guidance for knowledge sharing practices is limited (Wickramasinghe & Widyaratne, 2012, p. 216).

At the same time as authors are calling for a convergence on what key influences shape knowledge sharing perceptions, others suggest further research on how contexts can have a bearing on these key influences. For example, Chow et al. (2000, p. 91) stated that 'future research is needed to "map out" the range and mix of knowledge-sharing situations that arise within and between national contexts, and to use such findings to guide research to the key variables'. Examining the key influences across multiple contexts allows not only to 'capture synergistic effects' (West & King, 1996, p. 156) but will also expose divergences between contexts.

Based on the foregoing discussion there are two complementary areas of research that warrant further investigation. The first is what the key influences could be that shape knowledge sharing perceptions, and the second is whether these key influences are subject to contextual differences.

In regards to the first area of research, this vision of converging towards a set of key influences is incremental. It is similar to the issue faced by Neches et al. back in 1991 when knowledge sharing technology was a vision. Yet the authors argued that 'for this consensus to emerge, we need to engage in exercises [...]' (p. 39) and published their vision via an article. Like Neches et al. (1991), this thesis aims to contribute to a move towards consensus by collecting empirical data and making the findings public for debate. In terms of the second area of research, the aimed contribution of this thesis is to assess the identified key influences in four different contexts and through this illustrate synergies and divergences. The four contexts are branches of a single IT services organisation that are located in China, the Netherlands, the UK and the US. As is elaborated on in Section 3.5, four country branches have been chosen from within that single IT services organisation due to their varying purposes and characteristics. These two aspired contributions above are converted into one research aim and two research objectives, as stated next.

1.2 Research aim, objectives, strategy and scope

Based on the rather fragmented picture in the existing literature as to the key influences, the aim of this thesis is to develop a holistic framework that depicts key categories of influences that shape individual perceptions of knowledge sharing within an organisational setting so a more advanced understanding of the knowledge sharing phenomenon can be generated.

In order to achieve the aim of developing a holistic framework, two objectives are created. The first is to develop key categories of influences that shape individual perceptions of knowledge sharing and the second is to explore if the key influences identified are susceptible to contextual differences. That is, whether interviewees based in the four different country branches have varying views as to the key categories of influences that shape their perceptions on knowledge sharing.

Given that the research aim and objectives on the previous page seek exploration, rather than validation, this study follows an inductive and qualitative approach. More specifically, this thesis adopts a case study strategy of inquiry, focusing on a total of 24 interviewees located in four different country branches of one IT services organisation.

Having alluded to various elements that are presented in this thesis informally in the preceding pages, the following section presents the chapters in which these elements are discussed. In addition, and following Becker and Richards's (2007, p. 52) advice of 'telling readers [in the introduction] where the argument is going and what all this material will finally demonstrate', the below section summarises the key arguments put forward in each chapter.

1.3 Thesis structure and chain of arguments

Following this introduction, Chapter 2 elaborates on the existing body of literature, establishes the area of contribution to knowledge and develops the aim of this thesis, which is augmented by two specific research objectives. The creation of the aim and two research objectives are based on the following sequence of arguments. The world has reached the knowledge age (Rabie, 2013, p. 36) where knowledge is considered to create wealth, economic activity and provide organisations with sustainable competitive advantage (Dalkir, 2013, p. 79; Hislop, 2013, p. 67). Knowledge management is the process to manage that knowledge (Ahmed, Lim, & Loh, 2002, p. 23). Knowledge sharing is a key activity within knowledge management (Heisig, 2009, p. 10). Yet the knowledge sharing field has not reached a consensus as to the key categories of influences that shape individual perceptions to knowledge sharing. Secondly, frameworks that have been developed have either omitted context, explored their framework in a single context, or to a lesser extent in two or three contexts. This thesis aspires to contribute to knowledge by developing a holistic framework in terms of what key influences shape individual perceptions of knowledge sharing and exploring this framework in four different contexts. To reiterate, the four different contexts are branches of a single IT services organisation that are located in China, the Netherlands, the UK and the US and chosen based on their varying purposes. Exploring interviewees located in these varying branches can illustrate synergies and divergences as to what they perceive the key categories of influences are that shape their knowledge sharing perceptions.

The methodology chapter, Chapter 3, then operationalises the two research objectives by making explicit upfront the underlying philosophical worldviews adopted by this research before identifying and justifying a suitable strategy of inquiry, research method and research setting as well as an analysis technique. In short, this research adopts an interpretive approach due to the exploratory nature of the research objectives and tends to subscribe to a constructivist ontology, post-positivistic axiology, positivistic language and inductive methodology. A case study strategy is selected along with a qualitative interview research method which is executed in a single, large IT services organisation with 24 interviewees in total based in the company's branches located in China, the Netherlands, the UK and the US. The constant comparison method is chosen as the interview data analysis technique.

The findings emerging from the constant comparison method are then discussed in Chapter 4. Data from 24 interviews suggest that a holistic framework that depicts key categories of influences that shape individual perceptions of knowledge sharing should incorporate four key influences fundamentally different in nature. The chapter is structured around these four key categories of influences starting with institutions that, as a whole, shape individual perceptions of knowledge sharing. The second key influence centres on relations between individuals that share knowledge while the third key influence concentrates on the individuals themselves (called sharers) and how their attitudes and characteristics can shape their knowledge sharing perceptions. The fourth and last key influence centres on knowledge itself.

Furthermore, findings from the interviews indicate that the four key categories of influences, each being of a fundamentally different nature, not only shape knowledge sharing independently, but that all four key influences are interrelated.

Chapter 5, the discussion chapter, then evaluates the developed holistic framework against existing literature. What emerges is that meta-analyses, narrative reviews and individual studies to date have drawn attention to some of the key influences or depicted some of the interrelationships while this study suggests that knowledge sharing from an individual-level perspective is a more complex phenomenon than currently portrayed.

This leads to the principal argument and contribution that is made in this thesis, as discussed in Chapter 6, in that a holistic framework that depicts key categories of influences that shape individual perceptions of knowledge sharing should take into account not only four key influences, each being fundamentally different in nature, but also their interrelationships.

The foundation upon which the contribution is made is based on the literature review, which is the focus of the next chapter.

2 Literature review

2.1 Introduction

The quest to understand 'knowledge' is deemed to date back to the ancient Greek era in which philosophers such as Socrates, Plato and Aristotle contemplated its meaning (Goodwin, 2009, p. 25). This debate however has not been limited to the Greek sphere but according to Wiig (2000, pp. 25-26) has also been actively discussed by others such as Lao Tzu and Indian philosophers. Socrates, in discussion with Theaetetus, commented that 'knowledge [...] is not attained until combined with true opinion' (Plato, trans. 2008, p. 107). More recently, renewed interest in knowledge has been sparked by theorists including Marshall (1890, p. 115), Drucker (1959, p. 120; 1999, p. 79) and Nonaka and Takeuchi (1995) but the focus has shifted from the philosophical to the economic realm.

This coincides with what Falk and Sheppard (2006, p. 232), Rabie (2013, p. 36), Rylatt (2012, p. 104) and other authors called the knowledge age or knowledge economy where wealth is based on the possession and utilisation of knowledge, not physical capital. The importance of knowledge is generally undisputed (Sallis & Jones, 2012, p. 4), influencing work and economic activity (Hislop, 2013, p. 67) and providing organisations with a sustainable competitive advantage (Almahamid, Awwad, & McAdams, 2010, p. 401; Dalkir, 2013, p. 79; Rutten, 2003, p. 55).

Because of this renewed interest in knowledge during the more recent past, researchers have been encouraged to examine this phenomenon. Among the advocators to explore knowledge is Rutten (2003, p. 2) who stated that 'the importance of continuously increasing our knowledge of knowledge can never be stressed enough'. Due to its perceived importance for current organisations and society and the urge to understand knowledge better, this thesis focuses on the concept of knowledge.

Knowledge is different to other concepts such as data or information as knowledge incorporates ones experience (Aktharsha, 2011, p. 104; Senapathi, 2011, p. 87). Aktharsha (2011, p. 104) defined knowledge as 'information combined with experience, context, interpretation, reflection, intuition, and creativity' and serves in this thesis as the conceptual definition of knowledge. Although there are many other definitions of knowledge (see for example Kebede, 2010, pp. 422-423; Zins, 2007), Aktharsha exemplifies the complexity of

knowledge compared to information which is 'data that are included in a context that makes sense' (p. 106).

But knowledge can be studied from a variety of angles as illustrated in an article by Heisig (2009, p. 8) who found 117 knowledge management frameworks being presented between 1995 and 2003 alone that specifically outlined activities associated with managing knowledge. Sharing, being one activity however was the most stated activity among the 117 frameworks (Heisig, 2009, p. 10). This was in line with Phelps, Heidl, and Wadhwa (2012, p. 1120) who argued that '[m]ost studies examined knowledge transfer (44%), followed by creation (38%) and adoption (17%)'. Although the latter set of authors utilised the term 'knowledge transfer', rather than 'knowledge sharing', they underline the importance that prior studies have given that activity compared to other ones. Thus, knowledge sharing seems to be a central concept in managing knowledge that in turn provides a competitive advantage. Furthermore, effective knowledge sharing increases efficiency in organisations by spreading the knowledge being continuously created and promotes the use of existing knowledge for practical and specific purposes (Susan, Chih-Hsun, Erika, & Yuan, 2006, p. 31) as well as increases product innovation (Utami & Utami, 2013, p. 423). It is argued that knowledge sharing takes less time than knowledge transfer because the sharers simultaneously engage in sharing their knowledge. Based on this, the decision is made to focus on knowledge sharing rather than on knowledge transfer.

As with knowledge, the term knowledge sharing has been defined and interpreted in a variety of ways (see for example Yeşil, Koska, & Büyükbeşe, 2013, p. 218) but the conceptual definition for this thesis is adopted from Boyd, Ragsdell, and Oppenheim (2007, p. 139) who stated that knowledge sharing 'involves social interaction and is a two way voluntary process'. The rationale behind taking on this definition, rather than others, is that it perceives knowledge sharing as an activity that involves interaction with one or more participants on a voluntary basis.

However, knowledge sharing not only has advantages to sharers and organisations, it also can have negative effects. For individuals, perceived loss of power has been cited by many authors (e.g. Nita, 2008, p. 46; Smoyer, 2009, p. 141). Søndergaard, Kerr, and Clegg (2007, p. 431) for instance undertook interviews in a UK owned engineering organisation and found that knowledge sharing was perceived to be negative, as illustrated by one of the interviewees

who stated that '[...] to download your brain, it kind of, lessens your value somewhat'. Knowledge sharing can also negatively influence trust between individuals. This was illustrated by Michailova and Worm (2003, p. 513) who found that trust in Russia was based on non-disclosure of negative information to third parties. In other words, two individuals may know negative information about each other that they did not reveal to others in order to continue a trusting relationship. Should one individual disclose undesirable information to others then the trust-based relationship may be weakened. Another issue is the sharing of incorrect or low quality knowledge. If others perceive the sharer's knowledge to be of low quality or inferior, then that knowledge was less likely to be adopted by the other-sharer² (Kane, Argote, & Levine, 2005, p. 62).

Ford and Staples (2010, p. 406) also suggested that full knowledge sharing risks the receiver being overloaded with knowledge in an area that they might not be familiar with. They argued that partial knowledge sharing reduces the time spent on sharing the knowledge while allowing the recipient to perform their job sufficiently. Hence full knowledge sharing was not always required for colleagues to perform their tasks adequately. This was supported by Olsen, Cutkosky, Tenenbaum, and Gruber (1995, p. 146) who maintained that engineers need to create common ground of meanings, terms and conventions and must be understood to some degree by involved parties, but that this common knowledge 'constitutes only a small fraction of what each knows'.

From an organisational perspective, knowledge sharing can also be detrimental when confidential information is shared. For example Ahmad and Daghfous (2010, p. 159) found, when interviewing a staff member at a hospital in Dubai, that knowledge and information about the hospital was treated as confidential to ensure that the perceived image of the hospital was not compromised by leaking information to external sources.

Despite there being circumstances in which knowledge sharing can be detrimental, literature has pointed towards the importance of understanding this phenomenon further. To reiterate, Rutten (2003, p. 2) stated that 'the importance of continuously increasing our knowledge of knowledge can never be stressed enough'. It is argued that an enhanced understanding includes both advantages

² See Appendix F for further details. In short, the words sharer and other-sharer are utilised to indicate active participation and equal power balance of two or more individuals in the knowledge sharing act.

and disadvantages of knowledge sharing rather than concentrating on one side of the equation. Due to this, this thesis takes an open approach towards knowledge sharing in that both benefits and drawbacks are documented, not only in this literature review section, but also in the findings chapters (Chapter 4).

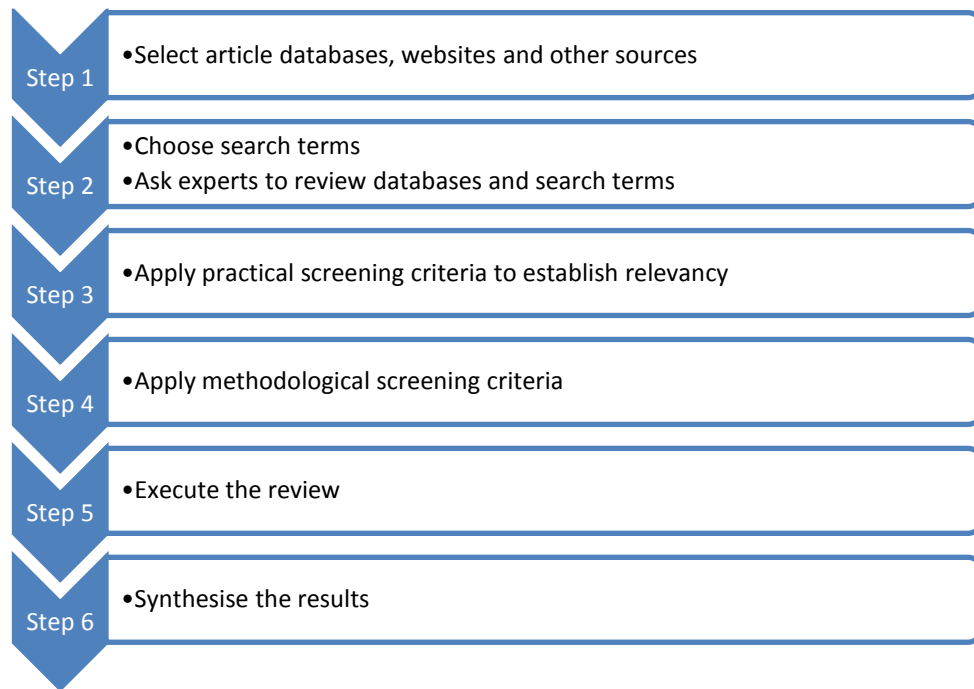
Having provided rationales for concentrating on knowledge and in particular on knowledge sharing, the following section develops a picture of the literature pertinent to knowledge sharing.

2.2 Review of the knowledge sharing literature

The term 'knowledge sharing' has been extensively used throughout the literature as databases such as ABI/Inform Complete, EBSCO and Web of Science confirm. They list approximately 39,000, 7,600 and 4,400 documents respectively. Acknowledging the breadth of discussion, authors have attempted to map the existing literature through narrative reviews and meta-analyses from different perspectives. As H. Cooper (2009, p. 237) and Detrich, Slocum, and Spencer (2013, p. 31) stated, they provide a valuable overview of the existing literature. While narrative reviews are considered to be more associated with qualitative research (Bryman, 2012, p. 111), meta-analyses are commonly linked with quantitative studies (see for example Bryman, 2012, p. 106; Rubin & Bellamy, 2012, p. 62). By incorporating both narrative reviews and meta-analyses in this literature review, the two widely used types of research strategies (Bryman, 2012, p. 19), i.e. qualitative and quantitative studies, are covered and hence provide a larger overview of the literature landscape on knowledge sharing.

The strategy of using narrative reviews and meta-analyses to obtain a summary of the literature before supplementing the review with specific articles where necessary has been used by other authors such as Carcello, Hermanson, and Ye (2011, p. 2). Yet they have not made explicit how they searched and selected their 12 literature reviews or meta-analyses. Fink (2014, pp. 14-15) therefore called these reviews subjective and potentially idiosyncratic and instead advocated reviews that are systematic, explicit, comprehensive and reproducible. By doing so, it allows others to replicate the methods and determine objectively if they accept the findings of the review (2014, p. 14). As it is deemed important to make the review transparent, the steps proposed by Fink (2014, pp. 3-5) are drawn upon for this thesis. However, as the book was written from a medical and public

health perspective, some of the steps are not directly applicable in this study. The ones that are, are shown in the amended flowchart below.



*Figure 2.1. Steps involved in conducting the literature review. Adapted from *Conducting research literature reviews: from the internet to paper* (pp. 3-5), by A. Fink, 2014, Thousand Oaks: SAGE. Copyright 2014 by SAGE. Adapted with permission.*

Although Figure 2.1 above presents the steps as discrete and sequential, in practice they are iterative. For instance after some articles are retrieved, additional search terms are identified that are relevant to the topic under investigation. This in turn triggers further searches and examination of articles. Similarly, discussions with two liaison librarians have extended the list of sources and search terms, requiring previously executed searches to be updated. To make the review transparent however, the final list of all databases and search terms used in Steps 1 and 2 are recorded in Appendix A. In regards to Step 3, two practical screening tests are constructed. The first examines if the articles or documents are dealing in general with knowledge sharing, not information or data sharing for example. The second is a language filter which is limited to English. Aside from that, the criteria are not constrained by other factors listed by Fink (2014, p. 4), such as years searched, sample size or setting. As to methodological screening criteria (Step 4), studies are examined as to whether they listed or summarised prior studies or whether they consolidated them into an abstracted form. If they reiterated findings or frameworks from other studies without summarising them into their own overall framework then they are

excluded from this literature review. The rationale behind this is that reviews and meta-analyses are drawn upon to obtain an overview of the existing body of literature, not to illustrate a select few studies. The documents that are retrieved during the execution (Step 5) number eight in total and are synthesised in the next section (Step 6).

2.3 Reviews and meta-analyses illuminating the knowledge sharing landscape

To reiterate, the goal of the systematic review executed on the previous page is to obtain an overview of the knowledge sharing landscape. Eight articles, ranging from reviews to meta-analyses, comparisons and syntheses, are identified through this process which scans documents in databases, conference proceedings, dissertations and grey literature for the term 'knowledge sharing' or similar as well as for 'a review', 'meta analysis', 'comparison', 'synthesis' or 'narrative review' in their title (see Appendix A for details). Upon examination however, their structure, content, foci, terminology and underlying assumptions varied. S. Wang and Noe (2010, pp. 122-127) for example dedicated half of their article on future research directions and emerging issues. Cummings (2003, pp. 32-39) on the other hand applied the findings from the literature review to evaluate the World Bank's knowledge sharing success. Mitton et al. (2007) concentrated on knowledge sharing from an organisational, regional, provincial and/or federal level perspective, rather than an individual viewpoint as the other two sets of authors did. In addition, the authors utilised differing terminology such as knowledge sharing, knowledge transfer or knowledge exchange. Yet examining the reviews or meta-analyses in detail reveals that they subscribed to the conceptual definition adopted by this thesis that knowledge sharing 'involves social interaction and is a two way voluntary process' (Boyd et al., 2007, p. 139).

In terms of underlying assumptions, two dimensions emerged during the analysis, one referring to approaches to knowledge management and the other concerning the strategy to manage knowledge. According to Empson (2001, p. 813) and Allee (1997, p. 46) there are two main approaches referred to as 'knowledge as an asset/object' and 'knowing as a process'. Some authors including Meese and McMahan (2012) conceptualised knowledge as an asset or commodity that is objective and measurable, while others such as Van Wijk, Jansen, and Lyles (2008) viewed knowledge as being socially created, shared and legitimised (Ellis & Vasconcelos, 2010, p. 133). Similarly there are two key strategies, one called

personalisation/socialisation and the other codification (Apostolou, Abecker, & Mentzas, 2007; Foray & Gault, 2003, p. 21). Again, some authors including Witherspoon et al. (2013) tended to associate with the former where knowledge is shared through social interaction while Contandriopoulos, Lemire, Denis, and Tremblay (2010) followed a codification strategy where knowledge is captured into documents or IT systems.

Despite their different terminology, foci and underlying assumptions, the reviews and meta-analyses (which also include comparisons and syntheses) have one common theme that runs through their discussions, namely categories of influences that shape knowledge sharing. Each of the eight documents summarised the literature and abstracted them into categories of influences and three of them illustrated these via diagrams.

As becomes apparent in the following sub-sections however, the reviews and analyses had varying perceptions as to what constitute categories of influences that shape knowledge sharing. This realisation leads to the development of the aim and objectives set in this thesis (see Section 2.4). Before refining the anticipated contributions to knowledge based upon the finding that perceptions vary as to the categories of influences that shape knowledge sharing, the reviews and meta-analyses are synthesised per Step 6 in Figure 2.1, beginning chronologically with a report written by Cummings in 2003.

2.3.1 Factors that can influence knowledge sharing success and how to evaluate successful knowledge sharing activities

From 1996 onwards the World Bank has pledged to become a global knowledge bank where knowledge between clients, partners and employees of the World Bank can be shared (Wolfensohn, as cited in Cummings, 2003, p. 1). In order to assess how successful the knowledge sharing activities were between the stakeholders, the World Bank Operations Evaluation Department instigated a report on this matter, which was separated into two objectives. The first was to explore the existing literature on factors that influence knowledge sharing success; and the second to develop evaluation questions and provide recommendations to the World Bank as to how they could improve knowledge sharing activities.

Cummings (2003) approached the literature review from a narrative perspective, opting for a subjective selection of literature that he believed informed the

knowledge sharing landscape and kept the period of review and inclusion/exclusion criteria open. After discussing the importance of knowledge the author argued that knowledge sharing success can be gauged by the degree the recipient has internalised the knowledge. In line with the first objective, he then identified five factors (called contexts) that affect knowledge internalisation. They are relationships between source and recipient (called relational context), explicitness and embeddedness of knowledge (called knowledge context), a recipient's learning capability (called recipient context), a source's credibility and learning culture (called source context) and the larger environment in which knowledge sharing takes place (called environmental context). These contexts are depicted in the diagram below.

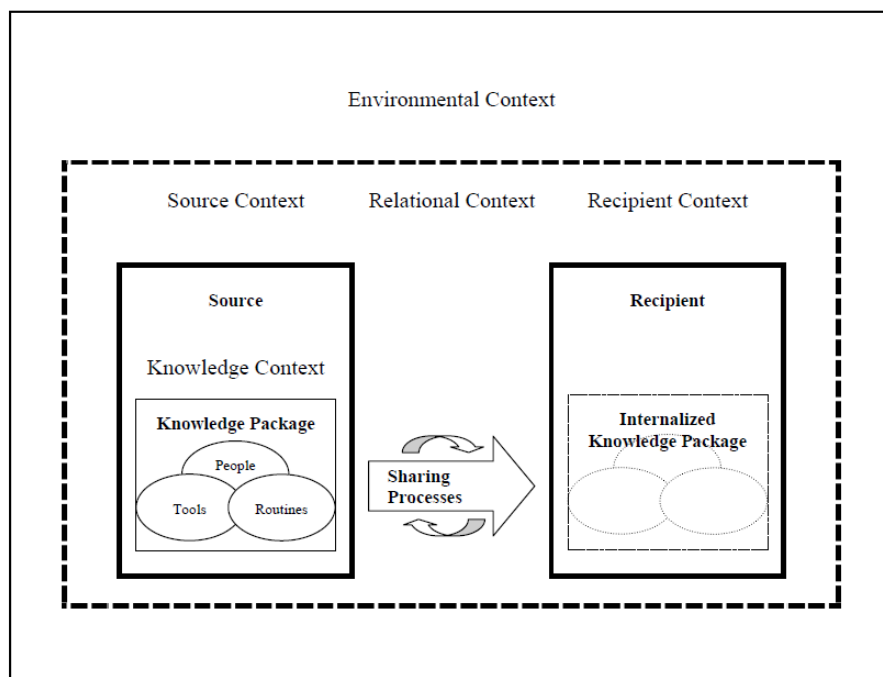


Figure 2.2. Five contexts of knowledge sharing. Reproduced with permission from the Independent Evaluation Group, the World Bank Group, from Cummings, J. (2003), 'Knowledge Sharing: A Review of the Literature.' Washington, DC: World Bank³.

Having established what factors influence knowledge sharing internalisation, the author turned his attention towards the second objective of the report by developing questions that can evaluate how successful the knowledge sharing activities of the World Bank were. These questions are grouped into three aspects. Firstly how the World Bank assesses how explicit or tacit and how embedded the knowledge is that is to be shared. That is, the degree to which

³ Please note that the copyright permission format has been amended per the copyright holder's request.

knowledge can be articulated and where the knowledge is located, such as in people, tools or routines. Secondly how the World Bank manages relationships between stakeholders through rules, goals and norms. Thirdly how the World Bank facilitates knowledge sharing activities. The report concludes that in order to assess how successful the knowledge sharing activities were between clients, partners and employees of the World Bank, all three aspects outlined above need to be taken into account.

Reviewing the report suggests that Cummings (2003, pp. 7-8) examined the knowledge sharing literature from the recipient perspective by arguing that knowledge sharing success depends on the successful internalisation of knowledge packages by the recipient. Although knowledge packages could be interpreted as an asset, i.e. a commodity that is measurable and objective (Ellis & Vasconcelos, 2010, p. 133), the author recurrently emphasised that knowledge requires a learning process and is not a property that can be simply moved from one person to another. This emerges through statements such as 'knowledge sharing involves extended learning processes rather than simple communication processes' (p. 1) or from an example on unlearning some existing knowledge:

For example, when CT scanners were first introduced in radiology departments, their initial implementation was somewhat ineffective because new role structures first had to be negotiated between radiologists and technicians (Barley, 1986). Thus, existing knowledge of the roles of the radiologists and the technicians had to be unlearned to allow for the new technology and related knowledge to be accepted (p. 16)

Describing a negotiation process between professionals and the activity of unlearning knowledge suggests that the author viewed knowledge as a social construct involving creation, sharing and legitimization between radiologists and technicians (Ellis & Vasconcelos, 2010, p. 133).

In addition to perceiving knowing as a process, the author seemed to advocate a socialisation strategy to manage knowledge, rather than a codification strategy. This surfaces through statements including 'complete codification of knowledge as would be contained in a manual could instead effectively preclude a recipient from localizing or taking ownership of the knowledge, since the knowledge could be so predefined to limit its adaptability' (p. 22) or 'too much reliance upon codification might limit a knowledge package's internalization' (p.22).

The quotes on the previous page indicate that although Cummings (2003, p. 22) acknowledged the benefit of some codification, he tended to encourage a socialisation strategy.

While the report is clear on perceptions and provides in-depth discussions on the five contexts, there are two limitations of the article. The first is that the author initially associated the five contexts with knowledge sharing implementations (p. 1), then with knowledge sharing success (p. 2) and subsequently with knowledge sharing internalisation (p. 9). This provides some confusion as to whether the five contexts apply to implementations, success and internalisation or whether these three words are synonymous. Detailed reading indicates that knowledge sharing success can be measured on the degree of internalisation and therefore the five contexts apply to both terms but how knowledge sharing implementations relate to the other two terms remains unclear. The second limitation is that the author elaborated on the five contexts and from this unexpectedly developed three groups of questions to evaluate the success of the World Bank's knowledge sharing activities. There seems to be no explanation as to why or how these three groups of questions were extracted from the five contexts. Despite the limitations, the report provides a valuable summary of the literature on five contexts, i.e. relational, knowledge, recipient, source and environment, which influence knowledge sharing success.

2.3.2 A systematic review of knowledge transfer and exchange studies in the health care policy context

In contrast to the preceding report that concentrated on identifying factors that influence knowledge sharing success and developing evaluation questions to assess the World Banks' knowledge sharing activities, this systematic review aimed at examining and summarising studies discussing knowledge transfer and exchange strategies or processes that could be applied in health care policies (Mitton, Adair, McKenzie, Patten, & Perry, 2007, p. 732). Their rationale behind executing this study was to 'inform the design of a specific [knowledge transfer and exchange] KTE platform for a series of research projects referred to collectively as the "Alberta Depression Initiative"' (Mitton et al., 2007, p. 730).

In order to identify articles, reports and papers that conducted research into KTE, implemented or evaluated KTE between research producers and health policy decision makers, the authors set out a clear literature review process with inclusion and exclusion criteria, specified databases and search terms and

relevancy criteria. Out of an initial 4,250 abstracts 44 studies published between 1997 and 2005 were selected as they scored in their quality review 67% or higher. The results were then separated into three sections. The first dealt with four major themes stemming from commentaries, reviews or surveys that dealt with KTE but not implemented actual KTE strategies. The second section on the other hand covered actual KTE implementations or mechanisms. The third and final section provided material uncovered from grey⁴ literature that supplemented findings from the peer-reviewed papers.

Out of the four major themes within the first section, Mitton et al. (2007, pp. 735, 754) argued that barriers and facilitators for KTE are ‘perhaps [...] the most frequently addressed topic area in the KTE literature on health policy decision making’. The authors grouped them into four categories in Table 2, namely individual and organisational level barriers/facilitators, facilitators and barriers related to communication as well as barriers/facilitators connected to time or timing (p. 737). This suggests that barriers and facilitators are a core theme in understanding the knowledge sharing landscape. The remaining three themes revolved around frameworks to guide KTE strategies, measuring the impact of research conducted on health policies, and stakeholder perceptions on KTE strategies.

As to the second results section, findings from actual KTE implementation studies varied widely in context, topic area and information provided but the authors summarised the KTE strategies into eight major ones, which they then presented in Table 4. In the third results section Mitton et al. (2007, p. 754) emphasised a grey literature report that executed a randomised control trial to assess KTE strategies, arguing that this was the only study in their whole review that used that particular design. The systematic review then integrates the three results sections into a discussion and ends with a conclusion arguing that knowledge transfer and exchange strategies should take into account relationships and institutional knowledge as well as ‘quality interaction with a few individuals, as opposed to a mass barrage of information to many’ (p. 759).

The review provides a well-developed structure, both in terms of the steps taken to execute the literature search as well as the organisation of findings according

⁴ Grey literature includes documents produced by entities such as governments, business or industries; not widely disseminated; and not peer reviewed (e.g. Holly, Salmond, & Saimbert, 2011, p. 130; Rabina, 2010, p. 250).

to commentaries, actual KTE implementations and grey literature. Furthermore, the authors made explicit that they were focusing on KTE studies pertinent to health care policies at 'an organizational, regional, provincial, and/or federal level' (p. 732). Three related concerns however emerge when examining this article. The first is that the authors listed six main barriers and facilitators when introducing the topic on page 735. They stated that they can be classified on 'individual and organizational levels and pertain to relationships between researchers and decision makers, modes of communication, time and timing, and context'. What is indeterminate however is the basis from which these six main barriers and facilitators were created, given that 32 individual barriers and facilitators are listed in Table 2 of their article. The second related concern is that the authors reduced the barriers and facilitators from six, in the introduction, to four in their table by excluding relationships and context. What is unclear however, is how or why Mitton et al. (2007, p. 737) presented only four of the six barriers and facilitators in their table. The third concern relates to an absence of definitions of what is meant for example by 'organisational level' and why the factor 'limited time to make decisions' is not an individual-level barrier. Nonetheless, the review provides a different perspective to that of Cummings (2003) as it, in part, examines the main barriers and facilitators that influence knowledge transfer and exchange.

Another difference between Cummings (2003) and this set of authors relates to the underlying assumptions made in this review. While the former tended to conceptualise knowledge as something that is socially created, shared and legitimised, Mitton et al. (2007) seemed to view knowledge as an asset or a commodity that is objective and measurable (Ellis & Vasconcelos, 2010, p. 133). On the other hand, both sets of authors seemed to advocate a socialisation, rather than a codification strategy. These perceptions surfaced more clearly in the discussion section where Mitton et al. (2007, p. 758) argued that 'much more effort is needed to articulate how knowledge is best transferred from decision makers to researchers and who is responsible for ensuring that this interaction and ultimate exchange takes place'. Describing knowledge transfer as research messages being pushed from one group to another (p. 730) suggests that knowledge was viewed as an asset or property that can be moved between groups, rather than something that is socially constructed. At the same time words such as interaction, interactive interchange of knowledge, or statements including 'the successful uptake of knowledge requires more than one-way

communication, instead requiring genuine interaction' among groups all indicate that the authors subscribed to a socialisation strategy to manage knowledge.

2.3.3 Antecedents and consequences on intra- and inter-organisational knowledge transfer

As indicated in the introduction to this section, Van Wijk et al. (2008, p. 832) directed their meta-analytic review towards investigating how antecedents and consequences differentially relate to intra- and inter-organisational knowledge transfer, rather than looking, as Mitton et al. (2007) did, at knowledge sharing from an individual and organisational/regional/federal level perspective respectively. The rationale behind the quantitative and meta-analytic review, according to Van Wijk et al. (2008, p. 830), is that no study had summarised existing quantitative results on the antecedents influencing organisational knowledge transfer and its consequences.

To achieve that aim, the authors first selected five databases and extracted empirical studies on organisational knowledge transfer published between 1991 and 2005 using a range of keywords. In addition, they drew upon the Social Science Citation Index to identify the three most highly cited studies concerning organisational knowledge transfer. Furthermore, Van Wijk et al. (2008, pp. 836-838) manually examined abstracts from 19 journals listed in their Table 1 to identify appropriate articles. Lastly they scanned the reference lists of all the articles obtained from the prior steps to ensure they did not overlook relevant studies. The congregated articles were subsequently assessed to ensure they reported the results in a comparable manner, they measured team, organisational or network level knowledge transfer and they had independent samples. 75 studies met these three criteria. These formed the basis from which the psychometric meta-analysis method was executed.

The outcome obtained from that method is then presented in two main sections, each with a major table summarising the results. The first concentrates on three main antecedents (i.e. knowledge, organisational and network characteristics) and two consequences while the second section elaborates on what factors moderate organisational knowledge transfer.

Concerning the first section, the results indicate that underlying knowledge is more difficult to transfer if it is more complex, specific and tacit. From an organisational perspective, the size of the firm and its capacity to absorb

knowledge can also positively influence knowledge transfer, while the age of the company or degree of decentralisation does not have an influence. Furthermore, results suggest that a central position in a network, trust, a close relationship between companies and a shared vision and systems all positively shape knowledge transfer. At the same time, the number of relationships does not seem to influence transfer while cultural distinctions between firms can slightly decrease transfer. In terms of the consequences, the results suggest that organisational knowledge transfer has a positive effect on firm performance and innovativeness.

Van Wijk et al. (2008, pp. 840-843) then proceeded to discuss how antecedents and consequences may be affected by contextual characteristics, such as knowledge transfer at an intra-organisational level versus an inter-organisational one. Results indicate that the number of relationships and the central position in a network are insignificant at an intra-organisational level but significant at an inter-organisational level. Conversely, knowledge transfer has a larger effect on firm performance at an intra-organisational level than an inter-organisational one. Another contextual characteristic examined by the authors was the directionality of knowledge where they found that older firms seem to find it easier to engage in two-way transfer processes than in acquiring knowledge. Furthermore, the higher the number of relationships firms have or the more ambiguous the knowledge is the more difficult it can become to acquire knowledge.

A main strength of the article is that the authors clearly explained their aim, method and inclusion criteria and presented the results in a concise manner by utilising comprehensive tables. At the same time the study contains one contradiction and also one potential area of confusion. As to the contradiction, Van Wijk et al. (2008, p. 831) stated that 'meta-analytic evidence can be used to generate a more comprehensive list of attributes and to assess their relative effects on organizational knowledge transfer and, subsequently, important organizational outcomes'. Yet on the subsequent page they limited their investigation of antecedents to ones that have been extensively examined in multiple studies to 'not only to compare antecedents meta-analytically, but also to make sure the antecedents studied are deemed relevant by the research community' (p. 832). For example only one knowledge characteristic, i.e. ambiguity, was investigated although literature has identified other aspects such as confidentiality (Hew & Hara, 2007, p. 2319; Soo, 2006, p. 129) or ownership

(Kamoche, 1996, p. 226). Thus in contrast to what may be expected of meta-analyses presenting a comprehensive list of antecedents, this review provided only a very limited number of antecedents.

In terms of the potential confusion, Van Wijk et al. (2008, p. 840) stated in the first results section that the number of relationships firms have does not influence organisational knowledge transfer. In the second section however, their findings suggest that the number of relationships do have an influence at the intra-organisational level. Although this seeming contradiction can be explained by the fact that the first section combined both intra- and inter-organisational knowledge transfer, this is not made explicit and can lead to misinterpretations. Aside from that, the review provides a valuable contribution by not only examining antecedents and consequences overall but also how they differ when knowledge is transferred within organisations compared to between organisations.

However, articles have more components than just contributions and results; there are also underlying assumptions that shape research (see Section 3.2). Three assumptions emerge when reviewing the meta-analysis in depth. The first is that the authors conceptualised knowledge transfer to be similar to knowledge sharing and flows. Although this view is not unusual (e.g. Heisig, 2009, p. 9; Sedera, 2009, July, p. 5), other authors have clearly delineated between knowledge transfer and sharing (Fazey et al., 2012, p. 20; Niedergassel, 2011, pp. 71-72). This suggests that the review may use knowledge sharing and transfer, which in the strictest sense are incompatible, interchangeably and that this could reduce the validity of their findings for some readers.

The second assumption seems to be that the authors conceptualised knowledge as a process rather than an asset. Considering that they argued that knowledge is 'inherent and irreducible uncertain' and that 'tacitness, specificity and complexity of the underlying knowledge' make transfer difficult and that 'explaining and learning the specifics of the knowledge source takes time' (p. 833) all indicates that knowledge is not a commodity that is objective or measurable but that it is something that needs to be acquired in a longer process over time (Ellis & Vasconcelos, 2010, p. 133). The third assumption surfacing from the article is that the knowledge management strategy is socialisation, rather than codification. For instance the authors concurred with Kogut and Zander that 'organizational knowledge transfer depends on how easily the underlying knowledge sources can

be communicated, interpreted, and absorbed' (p. 843-844), suggesting that knowledge is transferred through social interaction rather than by documents or databases (Ellis & Vasconcelos, 2010, p. 133).

2.3.4 Conceptualisations, processes, benefits and factors influencing knowledge transfer

The fourth synthesis identified through the systematic literature review is that by Luo and Yin (2008). Their aim was to summarise research on four aspects relating to enterprise knowledge transfer.

The first aspect revolves around the conceptualisation of knowledge transfer and the two authors have succinctly restated three views that a) knowledge transfer involves spanning boundaries between one individual or one organisation, b) knowledge transfer provides a competitive advantage, and c) knowledge transfer affects the actions of other organisations. The second aspect Luo and Yin (2008, pp. 1-2) briefly described are process models of knowledge transfer. This included Nonaka's socialisation, externalisation, combination and internalisation knowledge spiral, Gilbert & Cordey-Hayes's achieve, communicate, apply, receive and absorb model as well as Szulanski's initiation, implementation, ramp-up and integration stage model. The third aspect touched upon concentrates on the subsequent benefits stemming from knowledge transfer (such as increased efficiency) and how they can be measured (for instance by analysing the speed and range of transfer).

The authors then spent their largest part of the four page article on factors that shape knowledge transfer. Luo and Yin (2008, pp. 2-3) grouped these influences into organisational culture, knowledge features, knowledge provider and receiver, and other factors. These factors range from having organisational incentives to transfer knowledge, the degree to which knowledge can be expressed clearly, the confidence the sender and receiver have in transferring knowledge to the extent organisations maintain social relationship networks.

Despite the review being rather concise, the authors managed to condense a wide variety of studies into four pages. As such this review could be viewed as a reference point or glossary relating to the field of enterprise knowledge transfer where readers can obtain a list of authors and their main topics. With the focus on providing a high quantity of literature came several limitations in other areas. One of the limitations is that the article can be classified as subjective, according to

Fink (2014, pp. 14-15), as it is not systematic, explicit, comprehensive nor reproducible. It is unclear of why Luo and Yin (2008) selected these four aspects of knowledge transfer and certain authors within each section. For instance they described Nonaka's SECI model, Gilbert & Cordey-Hayes's five stage model and Szulanski's four stage model but omitted Boisot's (1995) i-Space framework. Another limitation is that they did not make explicit the rationale for conducting this review. At no point in the article did the authors state that such a synthesis has not been completed before or that there was an indication that such a review would be beneficial for academia. Furthermore there seems to be a contradiction in that the authors concluded that little research has been conducted on organisational knowledge transfer yet they listed 36 articles that have dealt with that topic. The final limitation is that they almost exclusively drew upon articles published on or before 2000 although the synthesis was published in 2008. According to Van Wijk et al. (2008, p. 849) however, in the time period of 1991 to 2005 43% of their identified studies on organisational knowledge transfer were published between 2004 and 2005. This suggests that there is more recent research conducted in the area than the four out of 36 articles presented by Luo and Yin (2008). Even so, the synthesis is a valuable starting point to explore enterprise knowledge transfer.

Due to the brevity of the article it is difficult to establish underlying assumptions that the authors made in regards to the nature of knowledge and the strategy to manage knowledge. In terms of the former though Luo and Yin (2008, p. 3) stated that the literature has produced many doubtful points including whether knowledge is a character, sort or transfer process. This suggests that the authors are aware of the two broad schools of thought where knowledge is seen as either an asset or a process (Ellis & Vasconcelos, 2010, p. 133) although they have not indicated to which school of thought they tend towards. In regards to a strategy to manage knowledge, no tendencies became apparent and therefore remain unknown.

2.3.5 Existing individual-level knowledge sharing research and future research directions

In contrast to the previous synthesis that concentrated on enterprise knowledge transfer, the aim for S. Wang and Noe (2010) was to gain an understanding of the factors that shape knowledge sharing between individual employees. Furthermore their goal was to create a framework that summarises the existing

knowledge sharing literature and identify emerging issues and future research areas. Their basis for carrying out the review was that studies had examined individual-level knowledge sharing from different perspectives but, according to the authors, 'no systematic review has been conducted to date' (2010, p. 116) to condense the individual-level knowledge sharing literature.

The authors accomplished their aims by executing a narrative review across five academic disciplines using primarily the databases ABI/Inform and Business Source Premier and searching for the terms knowledge sharing, knowledge exchange or variations of these. The retrieved articles and relevant studies listed in the reference sections of the primary articles were then analysed, leading to 79 qualitative and quantitative studies published between 1994 and early 2008 to be included in their review.

The findings from the analysis were then summarised in two main parts. The first describes five areas of emphasis connected with knowledge sharing research as perceived by the authors. The second part discusses emerging issues as well as future research questions that could be explored. In regards to the former, S. Wang and Noe (2010, pp. 116-117) stated that research could be classified into 'five emphasis areas', namely organisational context, interpersonal and team characteristics, cultural as well as individual characteristics and motivational factors. Organisational context, interpersonal and team, and cultural characteristics were then further grouped under environmental factors, as depicted in their diagram replicated in Figure 2.3 on the next page.

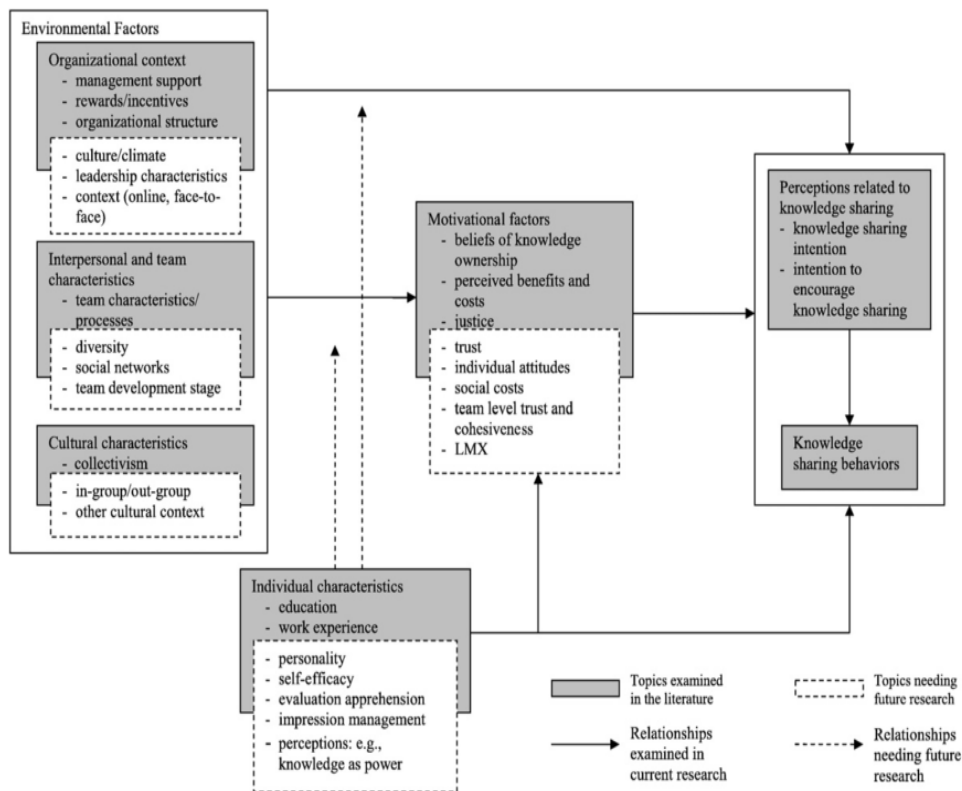


Figure 2.3. A framework of knowledge sharing research. From 'Knowledge sharing: A review and directions for future research', by S. Wang and R. A. Noe, 2010, *Human Resource Management Review*, 20, p. 116. Copyright 2009 by Elsevier Inc. Reprinted with permission.

As can be seen from the figure above, the authors not only summarised and abstracted the existing literature into several key categories of influences (shaded in dark grey), they also examined and drew attention to relationships between the areas of emphasis and any additional research that these relationships and aspects within the five emphasis areas require.

Figure 2.3 thus consolidates both findings from past research as well as some suggestions for future research. The second part of the article however not only covers the topics needing further research shown in the figure above, but the authors also encouraged additional efforts to be put into exploring other theories, such as the theory of social dilemmas, to better understand individual-level knowledge sharing. In addition they suggested that more research could explore the notion that knowledge sharing is a learning process for the person sharing the knowledge as it could deepen their own understanding of what they know.

There are two features in this narrative review that are distinctive compared to the ones reviewed thus far. The first is that the authors explicitly highlighted how different key areas of emphasis are connected via relationships.

As can be seen from Figure 2.3, individual characteristics for example can shape knowledge sharing behaviour. The second distinction is that the review dedicates half of its space to emerging issues and future research directions. Although a discussion of these is present in almost all articles, the depth and variety of topics covered by S. Wang and Noe (2010, pp. 122-127) is extensive.

At the same time, there are several limitations present in the review. One of them is a lack of explanation of how factors were grouped into certain key areas of emphasis. For instance the factor termed 'power perspectives' was classified under the individual characteristics key area. Yet the viewpoint that knowledge is power has been categorised by prior research as an attitude, not as a characteristic an individual has (e.g. Boer, Berends, & van Baalen, 2011, p. 92; Chennamaneni, 2006, p. 89; Goodwin, 2009, p. 172). In a similar vein, the influence 'team level trust and cohesiveness' was grouped under motivational factors although it seems more relevant under the interpersonal and team characteristics/processes area as the latter relates to team aspects, including team level trust. The second limitation is that some of the topics described by the authors needing further research as shown in Figure 2.3 have already been explored quite extensively. For example individual attitudes related to knowledge sharing were investigated between 2002 and 2008 by at least 13 authors⁵ including Sveiby and Simons (2002), J.-T. Yang and Wan (2004, p. 597) and Lemmetyinen (2007). This suggests that either the authors' search strategy omitted a portion of the literature that dealt with attitudes or more likely made an error in their diagram and attitudes should have been listed in the grey shared area (i.e. topics examined in the literature). Evidence of the latter is provided on pages 121 and 122 of the article where the authors discussed individual attitudes before moving towards further research directions.

In addition to the more visible contributions and limitations of the review, underlying assumptions emerge when S. Wang and Noe (2010, p. 117) defined knowledge and knowledge sharing. The first seems to be that they perceived knowledge as being more of an asset that is 'processed by individuals including ideas, facts, expertise, and judgments'. The words facts, expertise as well as processed indicate forms of properties that are acquired and then dealt with in

⁵ Bock and Kim (2002), H.-F. Lin and Lee (2004), B Van den Hooff and Hendrix (2004), Kwok and Gao (2005), So and Bolloju (2005), Bock, Zmud, Kim, and Lee (2005), de Vries, van den Hooff, and de Ridder (2006), Chennamaneni (2006), H.-F. Lin (2007) and Z. H. Li, Li, and Li (2008, p. 2).

the brain, rather than knowledge being socially constructed, created and legitimised (Ellis & Vasconcelos, 2010, p. 133). The second assumption seems to be that the strategy to manage knowledge is through both codification and socialisation. This surfaces from statements such as that 'knowledge sharing can occur via written correspondence or face-to-face communications through networking with other experts, or documenting, organizing and capturing knowledge for others'. While capturing and documenting knowledge refers to the codification strategy, face to face networking is considered a socialisation strategy (Ellis & Vasconcelos, 2010, p. 133).

2.3.6 How knowledge producing institutions, intermediaries and decision making groups influence policymaking or organisational behaviour through collective-level knowledge exchange

Similar to Mitton et al. (2007, see previously), these four authors published their narrative systematic review in the *Milbank Quarterly*, a journal for population health and health policy. In addition, both articles concentrate on policy and decision makers and describe a systematic review. One main difference however is that Contandriopoulos et al. (2010, p. 445) focused on how knowledge producing institutions, intermediaries and decision making groups at a collective level intervene to influence policymaking or organisational behaviour, compared to Mitton et al. (2007) who included both individual and organisational factors. Contandriopoulos et al. (2010, pp. 448-449) argued that there is available evidence on how individuals intervene to enhance the efficiency and quality of delivering care but that there is a lack of understanding on how institutions and groups influence organisational behaviour and policymaking. Based on that rationale the authors' aim was to 'develop an integrated interdisciplinary framework for understanding collective-level knowledge exchange interventions' (p. 450).

Given the rather sparse literature on collective-level interventions, according to the authors, a clear set of keywords to search for relevant articles was not available. Instead they executed a process they called the '*double-sided systematic snowball*' (p. 450). This involved the production of a list of 33 seminal papers which were subsequently used to identify 102 relevant documents that cited these 33 papers. The next step was to enter the full bibliographies of the 102 papers into a database and extract all articles that were listed more than four

times and books more than six times (pp. 450-451). At the end of the process 205 documents were utilised to generate their review.

Following the analysis of the 205 documents, Contandriopoulos et al. (2010, pp. 454-455) synthesised the literature into two main sections. The first section concerns three components of knowledge exchange systems. They consist of roles individual actors play in that system, the type (nature) of knowledge shared and how the knowledge is used. The second section examines how knowledge exchange interventions are part of larger collective action systems, that is 'systems characterized by high levels of interdependency and interconnectedness among participants' (p. 447), comprising of polarization, cost sharing equilibriums and social structuring.

In the first section, the authors explain that the first component of knowledge exchange systems are individuals that work in institutions that produce knowledge or use knowledge or contribute to the knowledge flow by being intermediaries between producers and users. The second component concerns the concept of knowledge and findings suggest that knowledge can be equally evidence based or 'other types of information' (p. 458). The third relates to how knowledge is used and the literature reviewed indicates that knowledge is embedded into arguments to influence others.

The degree to which an individual can influence others is dependent on the larger collective action system and the authors focused their second section on three dimensions. The first is polarisation and means that any given piece of information can be perceived similarly or differently to a group's own opinions or preferences, leading to low or high polarisation. Findings from the authors' review suggest that the literature is 'sharply divided on how knowledge exchange interventions should adapt to variations in issue polarization' (p. 461). While some of the literature suggests that interventions cannot succeed in a polarised context, another view argues that polarisation is normal but that one needs to understand the polarised system when designing knowledge exchange interventions. The second dimension summarises the idea that interventions are only carried out when the benefits outweigh the costs. Benefits may include being able to defend preferences or advancing interests while costs could be time, money and attention. The third and final dimension revolves around social structuring and findings indicate that knowledge exchange interventions are influenced by the interrelationship between interpersonal trust and repeated communication. The

better the interrelationship, the higher the value the transmitted information may be perceived to have.

Acknowledging that the aim to explore collective level knowledge exchange interventions can be difficult when the literature to date has predominantly concentrated on individual-level interventions, the authors provided a novel data collection method by using both a prospective and retrospective snowballing process. Yet there are several limitations, both already stated by the authors and emerging, that can be noted. As to the former the authors themselves questioned their low level of data saturation from the snowballing method, concluding that their review is not exhaustive. Secondly, they made explicit that they refrained from grading articles primarily on their empirical evidence as 44% of the documents they reviewed were informing and insightful from a theoretical point of view but did not have empirical data, leading to an exclusion criterion that was softer than in other reviews.

In addition to the acknowledged limitations, the authors blurred the distinction between findings obtained from the literature review and their own viewpoints in the results section. For example when discussing the first component of knowledge exchange systems, they ended by stating that exchange systems are complex due to the complexity of human actors and that the 'literature is rife with oversimplifications' on this point (p. 456). Although this may be a valid observation, it is not corroborated by existing literature and thus seems better placed in the discussion section of the article than in the results section. Similarly, it is not obvious which of the references in the text refer to the 205 documents extracted from the snowballing method and which ones are additional. Although the authors provided a URL to the complete bibliography, the link is malfunctioning. Thus it is not clear if the discussion advanced stems from the review or not. The final comment also concerns the use of literature in that the authors incorporated references in a non-committed way. For instance they stated that there is:

A widely shared, broader assumption in the literature [...] that producers (Amara, Ouimet, and Landry 2004; Landry, Amara, and Lamari 2001a; Landry, Lamari, and Amara 2003), intermediaries (Austen-Smith and Wright 1992; Carpenter, Esterling, and Lazer 2003; Coglianesi, Zeckhauser, and Parson 2004; Larocca 2004; Olson 1965), and users (Black 2001; Campbell et al. 2009; Harries, Elliott, and Higgins 1999; Jacobson, Butterill, and Goering 2005; Knott and Wildavsky 1980) all invest their energy and resources in knowledge exchange processes to the extent that they perceive this investment to be profitable (p. 462)

Reading the quote on the previous page shows that there are authors that have used the words 'producer', 'intermediaries' and 'users' but it does not suggest that there is literature that has discussed all three words in relation to knowledge exchange processes needing to be profitable. Thus this sentence could be interpreted as being supported by prior literature while in fact it may be the opinion of Contandriopoulos et al. (2010, p. 462).

Moving to the underlying assumptions, it seems that the article subscribes more to an asset centred knowledge approach than a process one. This emerges through statements such as 'knowledge exchange processes are not related to the scientific strength of the message [but that] in no way implies that validity does not matter, for it obviously does' (p. 458) or 'the concept of "knowledge exchange," however, especially in health care, rests on an implicit commonsense notion that this "knowledge" must be evidence based' (p. 456). Utilising words such as message and evidence based suggests more of an objective, measurable commodity than knowledge being constructed through social interaction (Ellis & Vasconcelos, 2010, p. 133). In regards to the strategy to manage knowledge, it seems that the article endorses a codification strategy rather than a socialisation strategy. The authors defined for instance 'collective-level knowledge use as the process by which users incorporate specific information into action proposals to influence others' thought and practices' (p. 459). According to Willis et al. (2013) action proposals are formal written forms where proposed actions are solicited from many different stakeholders. Combined, this indicates that Contandriopoulos et al. (2010, p. 459) conceptualised knowledge as something being incorporated into written documents through codification and through this influencing others, rather than influencing others through socialisation.

2.3.7 Knowledge sharing concepts and research strategies of sustainable development approaches in a civil engineering-related context

Moving from the medical to the engineering field, Meese and McMahon (2012, p. 437) executed a systematic review to identify 'published primary data collection studies of SD [sustainable development] knowledge sharing (KS) approaches in a civil engineering-related context'. From that they aimed to draw out knowledge sharing concepts studied and research strategies utilised to then summarise the key findings obtained from the review.

To identify relevant studies, the authors along with three other academics and two industry subject matter experts defined a search strategy, exclusion criteria and synthesis approach. In short, this entailed establishing an extensive set of search terms, executing the searches in five online journal databases, successively filtering the list of citations from 17,469 to 20 by applying the exclusion criteria created, and synthesising the findings based on lines of arguments, i.e. knowledge sharing concepts.

In total eight knowledge sharing concepts were identified and elaborated on, starting with collaboration, technology transfer, social learning, education, then moving onto social networks, public participation and decision support and concluding with measurement. To gain an overview of each concept, the two authors summarised the key findings into one table as shown below (Table 2.1).

Table 2.1

Summary of studies' KS concepts and main findings. From 'Knowledge sharing for sustainable development in civil engineering: a systematic review', by N. Meese and C. McMahon, 2012, AI & Society, 24 (4), p. 446. Copyright 2011 by Springer-Verlag London Limited. Reprinted with permission.

Concept	Dominant attribute	Main findings	Reference
Collaboration	Cultural	Approach to encourage cross-functional collaboration	Garde-Bentaleb et al. (2002)
	Cultural	Creating successful partnerships with tribes requires significant resources to develop a shared understanding and awareness, and a high level of continuity to develop effective relationships	Lyver (2005)
	Social	Stakeholder commitments and constraints must be explicitly addressed	Margerum (2001)
	Social	Benefits of using a typology to reduce confusion between collaboration efforts	Margerum (2008)
	Social	Approaches to developing a practical and intellectual knowledge partnership between European and Chinese institutions	Yao and Steemers (2009)
	Technical	Electronically mediated approach to tackling the contentious issues of SD, interdisciplinary working, and the design and management of virtual organisations	Cooper (2002)
Decision support	Technical	Emphasises potential process benefits of integrating a decision support tool with a knowledge management environment	Boddy et al. (2007)
Education	Cultural	Approaches to educating different stakeholder groups	Gao et al. (2006)
	Cultural	Universities should remain focused on providing fundamental education in basic sciences and related engineering fields, whilst enhancing students' interpersonal skills necessary for social learning activities	Morgenroth et al. (2004)
	Social	Educational programmes can be important contributors to societal changes	Huisingsh and Mebratu (2000)
	Social	Participation in educational programmes facilitates implementation of long-term activities	Sage (2000)
	Technical	Considerations for employing an e-learning course	Pohl et al. (2009)
Measurement	Cultural	The Green Building Challenge process accelerates KS at a team and national level	Mackley and Milonas (2001)
Public participation	Technical	Technology-aided methods can improve traditional public participation processes	Gonzalez et al. (2008)
Social learning	Social	Impacts of KS in poor communities using sustainable technologies	Al-Jayyousi (2004)
	Social	Social learning can identify and address key constraints to complex SD issues	Measham (2009)
	Social	Search conference format can be adopted to explore diverse perspectives of issues and identify concerns	Selin et al. (2007)
Social networks	Social	Reasons why stakeholders interact in collaborative processes	Lauber et al. (2008)
Technology transfer	Social	Successful technology transfers depend on minimising transaction costs, strengthening collaborative mechanisms, and in maximising public trust and accountability of partnerships	Forsyth (2005)
	Social	The Clean Development Mechanism does contribute to technology transfer by lowering barriers and raising transfer quality	Schneider et al. (2008)

The eight concepts shown in Table 2.1 on the previous page were also correlated in the review to the research strategies used to explore them in the first instance. For the first concept for example, two studies collected data about collaboration via a survey, two via case studies and two via ethnography. Overall, 16 out of 20 studies either used a survey or case study approach to investigate the eight concepts shown in the table on the past page. Furthermore, Table 2.1 indicates that the majority of studies concentrated on either collaboration or education. Together, these two trends formed the key findings of their review.

In line with what is expected of a systematic review in that it makes explicit 'decisions, procedures and conclusions' (Tranfield, Denyer, & Smart, 2003, p. 209), Meese and McMahon (2012, pp. 440-441) provided an extensive and clear process of how they planned the review, identified, selected and assessed studies and why they chose the lines of argument synthesis technique to structure their findings. In addition, each concept is well described using the findings from their identified studies. Due to this, there seems to be only one main limitation in addition to three more general comments. The limitation is that the authors did not provide a clear rationale for undertaking their study. Although they explained the overall need to understand how to effectively share sustainable development knowledge between engineers to achieve harmony between the planet and humans, they omitted why their study was necessary and how it was different to existing research.

As to the general observations, one of them is that the authors acknowledged a concern on page 440 that the lead researcher may have introduced a bias during the selection process. But instead of expanding at this point of how the concern was mitigated, the authors moved onto a new topic. Although they returned to this point under the limitations heading seven pages later, this seemingly unresolved issue early on may reduce the perceived validity of the article to readers. The second observation is that the authors provided an answer to research question two before adequately explaining the concepts found in research question one. A more logical sequence would have been to discuss each of the eight concepts first and then present the matrix showing the concepts and the research strategies. The third and final comment relates to the misalignment between the sequence of the eight concepts described in text and the summary in their table. For instance technology transfer was the second concept discussed in

text but shown last in their Table 4. While this is a minor point, it would have been more logical to structure text and table identically.

In terms of underlying assumptions, the background section of the article provides valuable insights into the authors' conceptualisation of knowledge and how to manage it. Concerning the former, terms such as knowledge asset, knowledge content and combining or exploiting existing knowledge all indicate a subscription to the notion that knowledge is an asset, rather than a social construction process (Ellis & Vasconcelos, 2010, p. 133).

At the same time the authors seemed to advocate a socialisation rather than a codification process of knowledge by describing technology playing 'a role in mobilising information' (2012, p. 438) while repeatedly advocating the importance of 'real-time duplex interpersonal communication' (2012, p. 439). This was substantiated in their conclusion in which they argued that firms cannot ignore the significance of face to face interactions. Thus while they acknowledged that codified knowledge stored in technology can help share knowledge, it is social interactions that are important when sharing sustainable development knowledge.

2.3.8 Antecedents that influence individuals' knowledge sharing intentions and behaviour within organisations

The final article included in this review is a meta-analysis conducted by Witherspoon et al. (2013). Their goal was to quantitatively identify which factors shape individual-level knowledge sharing intention as well as behaviour. Furthermore, they examined where possible how a moderating effect can shape the relationships between factors and sharing intention or behaviour. The authors' rationale behind instigating the meta-analysis was their assertion that none of the literature had conducted a cross-disciplinary analysis in that area.

To detect relevant quantitative research, the authors executed three literature searches in five databases, one in 2009, the second in 2010 and the last one in 2011 using identical keywords for the first two years and a different set for 2011. The initial list contained 8,872 studies but was reduced to 46 as only a small number of articles had relevant and comparable statistical data. Coding of each of the final articles' variables by two independent researchers produced 17 independent factors, one moderating variable (namely individualistic versus collectivistic culture), and two dependent variables i.e. knowledge sharing

intention and knowledge sharing behaviour. The independent factors were then grouped into four categories as shown in the replicated figure below (Figure 2.4).

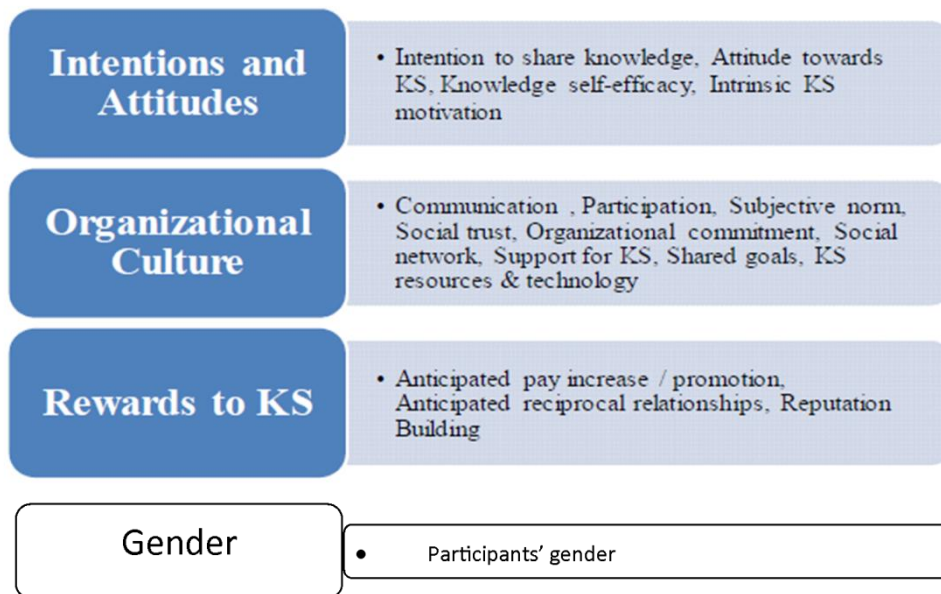


Figure 2.4. Antecedents of knowledge sharing. From 'Antecedents of organizational knowledge sharing: a meta-analysis and critique', by C. L. Witherspoon, J. Bergner, C. Cockrell and D. N. Stone, 2013, *Journal of Knowledge Management*, 17, p. 253. Copyright 2013 Emerald Group Publishing Limited. Reprinted with permission. The gender category is added to this diagram as it is presented in their subsequent diagram and tables but omitted in their Figure 1.

The results revolving around the independent factors shown in Figure 2.4 above were then presented in three main tables, with a figure consolidating the outcomes. The first results table (Table X) focuses on 16 out of 17 independent factors and how they correlate to knowledge sharing behaviour. The second results table (Table XI) depicts the correlation statistics between nine independent factors and knowledge sharing intention. The third results table (Table XII) illustrates to what degree the moderating variable influences the correlation between five independent factors and knowledge sharing behaviour. The reason not all 17 independent factors were analysed across all three tables is that at least two studies were required to produce statistical data for Tables X and XI and five studies overall for Table XII.

To enhance comprehension of the results obtained, the authors summarised them into a single diagram, showing independent factors that were significantly correlated to knowledge sharing intention and behaviour respectively via solid arrows and insignificant ones via dotted arrows. Relationships that were

moderated by culture are denoted by an enclosed 'M' as shown in the replicated results diagram below (Figure 2.5).

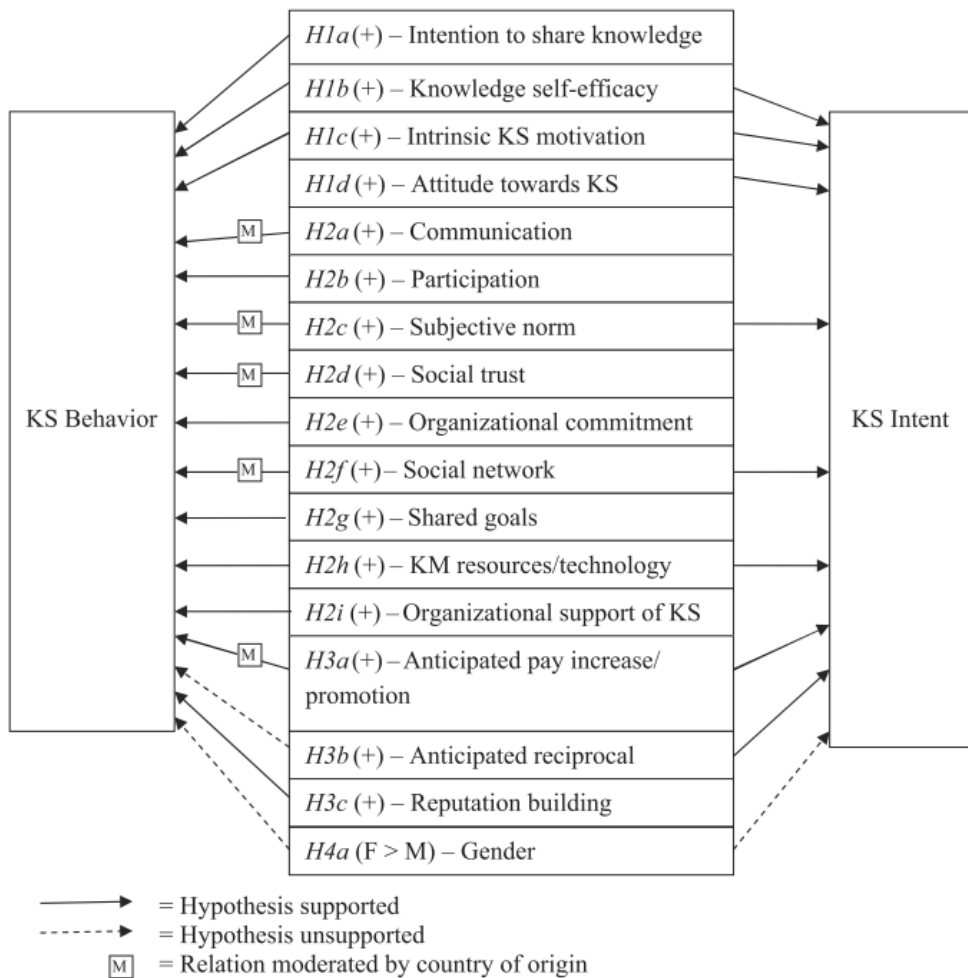


Figure 2.5. Summary of results. From 'Antecedents of organizational knowledge sharing: a meta-analysis and critique', by C. L. Witherspoon, J. Bergner, C. Cockrell and D. N. Stone, 2013, *Journal of Knowledge Management*, 17, p. 267. Copyright 2013 Emerald Group Publishing Limited. Reprinted with permission.

As can be seen from Figure 2.5 above, intention to share knowledge for example is positively correlated to knowledge sharing behaviour while there is no significant relationship between gender and knowledge sharing behaviour or intention. Communication is also positively related to knowledge sharing behaviour but this link is moderated, depending on whether the study is undertaken in a collectivistic culture or individualistic one.

Conducting such a meta-analysis with 17 independent factors, a moderating variable and knowledge sharing intention as well as behaviour demonstrates an extensive effort in evaluating the body of literature. Although only 46 studies remained in the final analysis, 270 other articles were examined before being excluded on grounds of no or inappropriate statistics. In addition, the authors

selected a suitable format to summarise their findings in a single figure. Yet there are several inconsistencies that emerge when analysing the article in depth. One of them relates to the number of independent factors and categories studied.

In the abstract the authors spoke of 16 variables and three categories, then of four categories on page 253 and then depicted 17 factors in the summary figure (see Figure 2.5). The issue seems to be associated with the gender variable that is both an independent factor as well as a category. This may create confusion, especially on page 254 where they listed gender as the fourth category but omitted it in their Figure 1 on the same page.

The second inconsistency relates to their emphasis on generalizability while some results are based on two single studies. That is, the authors stated up front that the article provides 'nomothetic knowledge inferences by demonstrating commonality in the antecedents to KS [knowledge sharing] across heterogeneous disciplines, settings, and participants' (p. 251). Yet examining the findings shows that analyses of some of the independent factors, such as intrinsic knowledge sharing motivation or gender, were based on two individual studies. Thus the argument that results span disciplines, setting and participants should be accepted cautiously as two individual studies provide only limited insights into different disciplines or settings.

Another inconsistency concerns the literature searches executed in 2009, 2010 and 2011. Keywords in the first two years were constant but substituted by others in 2011. The authors did not provide a rationale for this alteration and no clarification of whether the three separate searches only examined the year in question or all literature up to that year. From their Table VI further on it seems that searches date back to 1996 but this then raises the question of why three independent searches were conducted if the search in 2011 could have incorporated all the literature until then. Furthermore the keywords listed on page 251 vary to those described on page 258. Lastly as the search was altered in 2011 no studies with the keywords 'KS', 'KM' and 'knowledge systems' published in 2011 were incorporated into their meta-analysis, contradicting their statement that 'the authors review[ed] the state of the literature as of fixed point in time (i.e. 2011)' (p. 267).

The final inconsistency is associated with the number of independent factors examined with the moderating variable and their results. On the one hand the

authors stated that they excluded seven variables and in the next paragraph six variables out of 16 variables for knowledge sharing behaviour (p. 260) but they depicted five variables in the results section. Yet 16 minus seven minus six equals three, not five.

Based on the latter this presumes that some of the six variables were already excluded in the first step. Furthermore there was one independent factor remaining for knowledge sharing intention but the results from that analysis were later omitted.

Reviewing the meta-analysis by Witherspoon et al. (2013) not only brings to the surface inconsistencies but also the authors' underlying assumptions regarding knowledge and strategy to manage it. Describing knowledge in the introduction suggests that they tend to subscribe more to the notion that knowledge is an asset, rather than a process. This stems from the authors asserting that knowledge is an intangible asset, first exists in individuals, or that it is created, harvested, stored and disseminated (p. 250). This perception harmonises with what Ellis and Vasconcelos (2010, p. 133) described as an objective and measurable commodity, compared to a process that centres on social construction and legitimisation. In terms of the strategy to manage knowledge, the authors seemed to endorse the socialisation rather than the codification viewpoint. Support towards this is found in their definition of knowledge sharing that centres on 'contributions to, and among, individuals', not on 'contributions to, and retrieval from, information systems and knowledge repositories' (p. 252).

2.3.9 Synopsis

In order to gain an understanding of the knowledge sharing literature, a systematic review of existing reviews, meta-analyses, comparisons and syntheses is undertaken. The rationale behind this approach is that there is a large body of literature dealing with knowledge sharing and meta-analysis and reviews can act as a first line of synthesis of the knowledge sharing landscape.

To begin, Cummings (2003, p. 1) seemed to equate knowledge with ideas and that sharing of ideas 'involves extended learning processes rather than simple communication processes, as ideas related to development and innovation need to be made locally applicable'. This notion of sharing being an ongoing process was restated multiple times by the author including when he argued that knowledge sharing 'is but part' of organisational learning (p. 32). Another main

theme advanced in the article is that knowledge sharing is not simply about transferring the knowledge but equally about taking into account the location and form of the knowledge as well as the rules and practices that are adopted by stakeholders engaged in knowledge sharing. This last statement is similar to that by Mitton et al. (2007, p. 759) who argued that relationships and quality interactions with a few individuals are important themes when talking about knowledge sharing. In addition, having knowledge about institutional systems, creating trust over time and tailoring how knowledge is shared with audiences are factors that can influence knowledge sharing. Van Wijk et al. (2008, pp. 844-846) also stated that the form of knowledge can influence knowledge sharing but extended the discussion by arguing that sharing within organisations is less affected by the form of knowledge than when it is attempted to be shared between organisations. Similarly the number of relations between colleagues and having a central network position are less vital when sharing knowledge within organisations than between organisations. This indicates that knowledge sharing is not a black and white concept, but varies depending on other influencing variables.

The next two sets of authors, namely Luo and Yin (2008) and S. Wang and Noe (2010), also considered influencing variables but focused their subsequent discussion on areas of knowledge sharing that require further research. According to the first set of authors theories relating to this area are still at an exploration stage as they lack adequate support and systematisation. Another aspect that is difficult is measuring the quantity of knowledge shared and further research should progress from using proxies to actual, quantitative measures of knowledge shared. In a similar vein, S. Wang and Noe (2010) argued that knowledge sharing research should deepen the range of applicable theories to explore the phenomenon from varying angles. Furthermore they argued that there is a difference between sharing knowledge face to face and through knowledge management systems but that research focused on one or the other but not on comparing the two within a single study. Identical to Luo and Yin (2008) the latter set of authors also stated that more research is needed that utilises objective measures of knowledge sharing. Combined, this suggests that the knowledge sharing phenomenon continues to offer a wide spectrum for research.

While Luo and Yin's (2008) and S. Wang and Noe's (2010) discussions concentrated on additional research areas, Contandriopoulos et al. (2010, p. 447)

stepped back at first to argue that knowledge sharing processes ‘can occur at two complementary levels that should be analytically distinguished’. This is to say that knowledge sharing can either be aimed at autonomous individuals who will react independently, or at a collective system where the knowledge shared needs to be first digested and discussed before the knowledge can be translated into practice. Another theme advanced in the review is that sharing of knowledge involves costs, such as time, resources and prioritisation, and that these costs can either be borne by the producer or the user of the knowledge or divided between the parties. This indicates that knowledge sharing does require effort and is mainly done when producers and users perceive their investment of time and resources to be profitable.

The last⁶ meta-analysis that acts as a first line of synthesis of the knowledge sharing landscape is that by Witherspoon et al. (2013). According to the authors knowledge sharing is a ‘ubiquitous’ issue that transcends disciplinary boundaries. They illustrate this by listing 17 disciplines that publish knowledge sharing related literature and emphasise that this is not an exhaustive list. Moreover, knowledge sharing is a term that can be further classified into knowledge sharing intention and knowledge sharing behaviour. Although they are related, the former examines individuals’ expectations of knowledge sharing while the latter investigates the actual sharing of knowledge. Another aspect accentuated by the meta-analysis is that there seems to be a difference between collectivistic and individualistic cultures when it comes to motivating individuals to share knowledge. The authors’ analysis indicates that individuals in collectivistic cultures are easier to motivate than counterparts in individualistic cultures. Witherspoon et al. (2013, p. 250) also highlighted that research to date has predominantly focused on participants that are willing to share their knowledge but that more studies should investigate ‘knowledge hoarding, withholding of knowledge to gain personal advantage, and “contributing” worthless information to gain (through gaming) personal payoffs’. This seems to coincide with observations made earlier that knowledge sharing is not a black and white phenomenon and that it offers further areas of research.

⁶ Please note that the systematic review conducted by Meese and McMahon (2012) is excluded in this part of the discussion as the authors limited their literature review to sustainable development within a civil engineering context, compared to the remaining seven meta-analyses/reviews that executed a generic literature review (see subsequent discussion for more information).

At the same time as the meta-analyses and reviews covering some common themes concerning knowledge sharing, they do vary (at a high level) in five dimensions, namely context, focal point within knowledge sharing, level of analysis, underlying assumptions and categories of influences. The first three dimensions are summarised in Table 2.2 below.

Table 2.2

Summary of reviews/meta-analyses and their context, focal point within knowledge sharing and level of analysis

Author(s)	Context	Focal point within KS ^a	Level of analysis
Cummings (2003)	Global institution	KS success	Individual recipient
Mitton et al. (2007)	Health care policy	KS barriers and facilitators	Organisational, regional, provincial, and/or federal level'
Van Wijk et al. (2008)	General management issues	KS antecedents and consequences	Intra- and inter-organisational
Luo and Yin (2008)	Enterprises	Conditions and factors influencing KS	Organisational? ^{bc}
S. Wang and Noe (2010)	General KS literature	KS research	Individual
Contandriopoulos et al. (2010)	Health care?	KS systems	Collective
Meese and McMahon (2012)	Sustainable development within civil-engineering	KS categories	Individual?
Witherspoon et al. (2013)	Multiple disciplines	KS antecedents	Individual

Note. ^aKS = knowledge sharing. ^bSee Section 2.3.4 for a discussion on the inconsistency between the level of analysis stated and seemingly executed one. ^c? = uncertainty as the article does not specify the context or level of analysis.

As can be seen from column two in the table above, the eight reviews and meta-analyses have utilised literature pertaining to knowledge sharing to make recommendations for different contexts. For instance Cummings (2003) examined the general knowledge sharing literature and then used the findings to make

specific recommendations for a global institution (i.e. the World Bank). Similarly Mitton et al. (2007) and Contandriopoulos et al. (2010) explored general knowledge sharing studies and documents concerning knowledge transfer and exchange that could subsequently be applied to the health care sector. In fact seven out of the eight meta-analyses and reviews begin with a broad exploration of the knowledge sharing literature before making recommendations for a specific field. The exception is the systematic review conducted by Meese and McMahon (2012, pp. 440-441) who solely included knowledge sharing literature that focused on sustainable development within a civil engineering context. Thus one needs to be cautious when comparing this systematic review with the other seven meta-analyses in terms of the categories of influences (discussed subsequently) as the former is field-specific while the others synthesise the knowledge sharing literature on a general basis.

The second distinction is the focal point they investigated. The third column in Table 2.2 illustrates that two reviews directed their attention on knowledge sharing antecedents whilst S. Wang and Noe (2010) and Meese and McMahon (2012) concentrated on knowledge sharing research and categories respectively.

The level of analysis is the third dimension in which the reviews differ, as shown in Table 2.2 on the previous page. Half of them examined knowledge sharing from an individual perspective, two across multiple levels and the remaining two from an organisational and collective viewpoint respectively. What transpires from this is that knowledge sharing is researched from several levels and that a choice has to be made in this thesis as to which one or ones are selected – a topic discussed further in Section 2.5.

Underlying assumptions made by the authors in terms of the approach to knowledge management and strategy to manage knowledge also vary as described in the eight preceding sub-sections. To reiterate the two main approaches are called 'knowledge as an asset' and 'knowing as a process' where the former conceptualises knowledge as being an objective and measurable commodity while the latter views knowledge as being socially created, shared and legitimised (Ellis & Vasconcelos, 2010, p. 133). Likewise there are two key strategies, one called personalisation/socialisation and the other codification meaning that knowledge is either shared through social interaction or captured into documents or IT systems (Apostolou et al., 2007; Foray & Gault, 2003, p. 21). Considering that the two approaches and two strategies are related, according to

Ellis and Vasconcelos (2010, p. 133), a diagram is created and the eight meta-analyses and reviews mapped onto the four resulting loose peripheries.

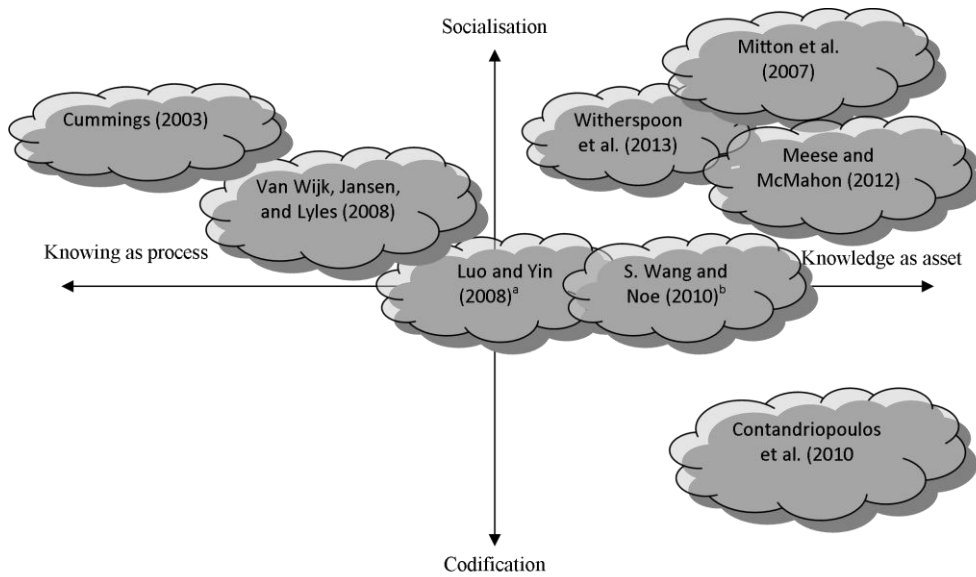


Figure 2.6. Summary of underlying assumptions surfacing from the eight meta-analyses and reviews. ^aInsufficient data to uncover which tendencies the authors followed. ^bInsufficient data to reveal the authors' underlying assumption regarding strategy to manage knowledge.

What transpires from Figure 2.6 above is that the majority of authors writing the meta-analyses and reviews tended to conceptualise knowledge as an asset and subscribe to a socialisation strategy. Yet this seems to be a contradiction in terms, as knowing as a process and socialisation are usually considered to be related, like knowledge as an asset and codification are generally considered to be linked (Ellis & Vasconcelos, 2010, p. 133; Senaratne & Sexton, 2008, p. 1304). To summarise, knowing as a process is often perceived as a social construct while knowledge as an asset can be understood as 'an objectively definable commodity' that is measurable (Empson, 2001, p. 812). At the same time a socialisation strategy is suggested when the knowledge is not an objective commodity compared to a codification strategy when the knowledge is objective and measurable (Edvardsson & Gudmundur Kristjan, 2011, p. 9). One potential reason for this inconsistency in the meta-analyses and reviews in perceiving knowledge as an asset while concurrently advocating a socialisation strategy could be that these are underlying assumptions, unconsciously made by the authors, without considering how the two interact.

The fifth and final dimension in which divergences are apparent is in regards to categories or categories of influences that shape knowledge sharing. As can be seen from Figure 2.7 below, there are only marginal overlaps in terminology.

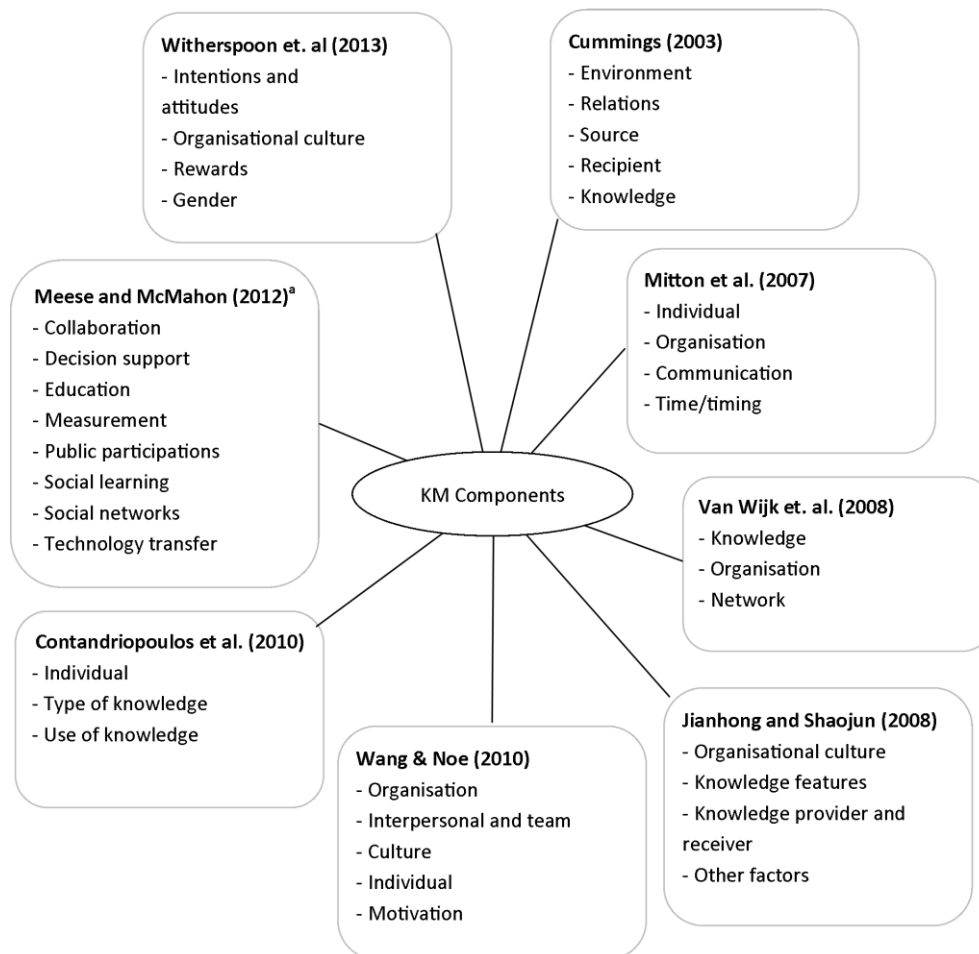


Figure 2.7. Summary of categories of influences that shape knowledge sharing according to the eight reviews. KS = knowledge sharing. ªThese categories are specific to sustainable development within a civil engineering context, compared to the other seven meta-analyses and reviews that are generic.

The words that occur more than once in the above figure are knowledge, individual and organisation. In other terms the authors diverged. This is not to say that in all other instances the categories or categories of influences are fundamentally different but rather that there is no consensus as to the exact terminology to be used to describe categories. For instance, source and recipient match the terms knowledge provider and knowledge receiver but it may not be obvious that they are equal.

Because of this lack of consensus as to the categories or categories of influences that shape knowledge sharing, this thesis can provide a contribution to knowledge by consciously identifying key categories of influences that shape knowledge

sharing. The difference between a category of influences and a key category of influence becomes apparent in Chapter 4 where the former is a factor or category that has certain properties but may or may not be fundamentally different in nature to another category while a key influence entails being fundamentally different in nature to another key influence.

This section identifies categories and categories of influences as conceptualised by reviews and meta-analyses and acknowledges the lack of consensus among them. A similar picture emerges when investigating individual studies (compared to meta-analyses or reviews), as elaborated on next and leads to the development of the research aim and first research objective.

2.4 Categories of influences shaping knowledge sharing as perceived by individual studies

As stated previously, the words knowledge, individual and organisation have been listed as categories or categories of influences by the meta-analyses and reviews identified in this systematic review more often than other terms. The use of the words as categories of influences that shape knowledge sharing is further corroborated by individual studies. For example C. Yang and Chen (2007, p. 97) grouped multiple elements influencing knowledge sharing into three categories, which they called knowledge, individual and organisational levels. Westphal and Shaw (2005, pp. 77, 80) also utilised these three categories of influences, but added a fourth category, namely acquisition integration characteristics. When Bi and Yu (2010, July, p. 123) conceptualised the whole knowledge sharing process they also addressed the three categories of influences but classified knowledge as one category and grouped individual and organisational as a second category of influence and added means and environment as two additional categories.

A second group of authors have concentrated on the individual and organisational categories of influences and omitted the knowledge category. Amongst them is Nita (2008) who focused on individual and organisational factors and how these can promote knowledge sharing. Other authors used the two categories of influences to examine knowledge sharing technology (Hauck, 2005, p. 11), project team members' knowledge sharing behaviour (Ismail, Nor, & Marjani, 2009, p. 35) or knowledge sharing processes (Rahab, Sulistyandari, & Sudjono, 2011, p. 120).

A third set of authors have included individual and organisational categories as part of a larger framework that represents categories of influences shaping knowledge sharing. Bhaskar and Zhang (2007, p. 45) and N. Evans (2012, p. 179) for instance argued that individual and organisational as well as technological categories need to be taken into account for successful knowledge sharing. Similarly, Borges (2013, p. 89) classified influences that shape tacit knowledge sharing, in the context of IT professionals, into individual, organisational and environmental categories. In a synthesis of literature Bock et al. (2005, p. 89) found that motivational factors that influence knowledge sharing stem from individual, group and organisational forces. In a similar vein, Jewels and Ford (2006, p. 112) argued that knowledge sharing could be encouraged by aligning 'individuals with the goals of their project team, the objectives of their organization, or the policies and practices of their professional discipline'. This suggests that individual, team, organisational or industry elements represent categories that can influence knowledge sharing, depending on their alignment. Lastly, Michailova and Hutchings (2006, pp. 398-399) investigated national cultural differences regarding knowledge sharing in Chinese and Russian companies at the individual, group, organisational and country levels. So again, this indicates that the four levels may be categories that influence knowledge sharing.

Taken together, a commonality between the authors identified in the preceding sub-sections is that they classified influences into individual and organisational categories. As to the remaining categories, these vary as summarised in Table 2.3 on the next page.

Table 2.3

Knowledge, individual, organisational and other influences shaping knowledge sharing

Author(s)	Influence	Knowledge	Individual	Organisational	Other
Bhaskar and Zhang (2007, p. 45)			X	X	Technology (in organisation)
Bi and Yu (2010, July, p. 123)	X		X	^a X	Means (communication channel) Environment (in organisation)
Bock et al. (2005, p. 89)			X	X	Group
Borges (2013, p. 89)			X	X	Environment (social)
N. Evans (2012, p. 179)			X	X	Technology (availability)
Hauck (2005, p. 11)			X	X	
Ismail et al. (2009, p. 35)			X	X	
Jewels and Ford (2006, p. 112)			X	X	Team Professional discipline (industry)
Michailova and Hutchings (2006, pp. 398-399)			X	X	Group Country
Nita (2008)			X	X	
Rahab et al. (2011, p. 120)			X	X	
Westphal and Shaw (2005, pp. 77, 80)	X		X	X	Acquisition integration characteristics
C. Yang and Chen (2007, p. 97)	X		X	X	

Note. ^aThe authors grouped individual and organisational influences into one category of influence.

As can be seen from the table on the previous page, some other categories of influences perceived by authors are technology, environment and means. However, after closer examination Bhaskar and Zhang (2007, p. 45) and N. Evans (2012, p. 179) for example focused on technology within an organisation or Bi and Yu (2010, July, p. 123) on the environment within a company. Although social environment, according to Borges (2013, p. 94), differs fundamentally from organisational culture as it concentrates on perceived relationships between employees rather than formal organisational behaviour patterns, the focal point is still relationships within an organisation. Lastly, Bi and Yu (2010, July, p. 123) provided examples of knowledge sharing means, such as computer networks, communication platforms and communication technology. While these terms may seem general in nature at first, the authors later clarified that they relate to organisational computer networks or communication technology. Therefore these can be considered to be a sub-aspect of the larger organisational category of influence. The last point is in line with other authors who grouped organisational technology and organisational as well as social environment under the organisational category of influence (Carla & Choi, 2010; C. Yang & Chen, 2007, p. 97).

While organisational technology and social environment within a company can be conceptualised as concepts of the organisational category of influence, industry and country influences have been classified by some authors as aspects of the broader environment (Michailova & Hutchings, 2006, p. 385; C. J. Scott, 2010, p. 30; Sun, Zhao, & Yang, 2010, p. 782; Zimmerman & Chu, 2013, p. 79). Several other authors on the other hand have stated that the industry environment is separate from the broader macro environment (e.g. S. E. Chang & Ho, 2006, p. 354). In this thesis however it is argued that both industry environment and macro environment can form part of the environmental category of influence as they operate beyond an individual or organisation. This is in line with X. Huang and Gardner (2007, p. 2) and York and Miree (2012) who stated that the environment includes both the industry and macro environment.

The remaining two influences in column five in Table 2.3 are 'acquisition integration characteristics' and team/group. According to Westphal and Shaw (2005, p. 80) the former influence revolves around how processes and levels of integration between the acquiring organisation and target company can influence knowledge sharing. As two organisations are involved in this process, the concept

is deemed to fall outside the organisational category of influence discussed on the previous page. Nonetheless it is argued that while this influence may be of importance in the context of mergers and acquisitions, it is less relevant as a category of influence shaping knowledge sharing from a general perspective. The team/group influences are also considered to be distinct from both the organisational and individual categories of influence as they focus on more than one individual but not on the organisation as a whole. This conceptualisation as a separate category of influence is consistent with that of Bock et al. (2005, p. 89), Jewels and Ford (2006, p. 111) and Michailova and Hutchings (2006, p. 385).

Based on the preceding discussion there is an indication that categories of influences that shape knowledge sharing could be knowledge, individual, group, organisation and environment. These categories are almost identical to the entities described by Nonaka and Toyama (2003, p. 5) in their socialisation, externalization, combination and internalisation (SECI) model of knowledge creation (see Figure 2.8 below).

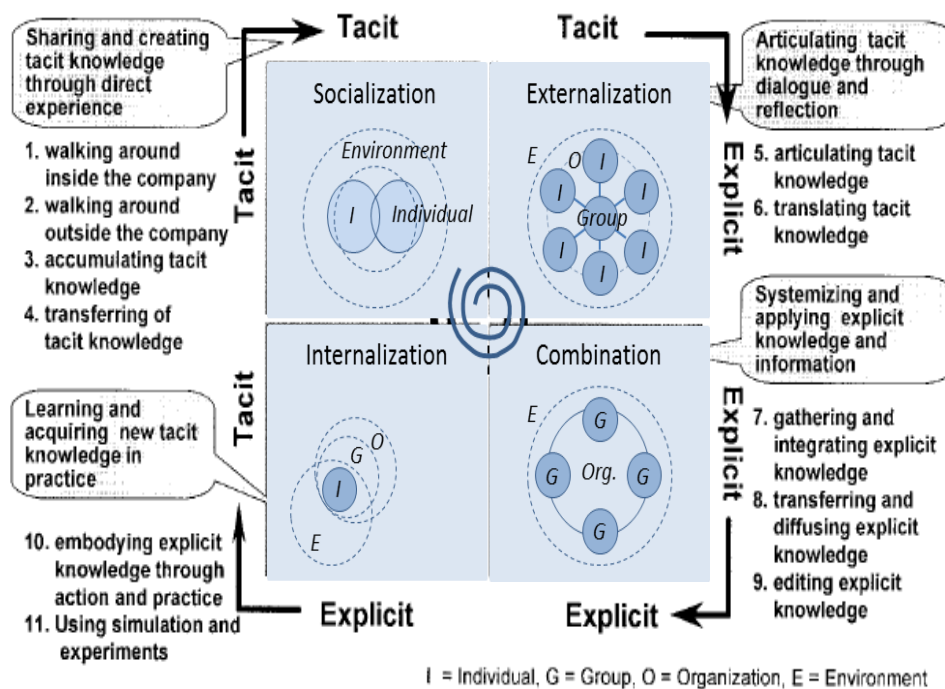


Figure 2.8. SECI model of knowledge creation. From 'The knowledge-creating theory revisited: knowledge creation as a synthesizing process', by I. Nonaka and R. Toyama, 2003, *Knowledge management research & practice*, 1, p. 5. Copyright 2003 Palgrave Macmillan Ltd. Reprinted with permission.

The SECI model above aims to explain how knowledge in organisations is created through an interplay between the organisation's internal resources and the environment. Internal resources are employees whose actions are influenced by

the environment but also define and reproduce the environment by their actions. Actions can either stem from rationalising consciously or following unconscious routines (Nonaka & Toyama, 2003, p. 4). According to the authors, the former produces explicit knowledge while the latter generates tacit knowledge. Figure 2.8 on the previous page illustrates how unconscious routines can be shared between individuals (through socialisation), then converted to something that is rationalised consciously (called externalisation) and combined with other knowledge (termed combination) to then be applied and used in practice (through internalisation), which over time creates new unconscious routines in individuals. Yet as Nonaka and Toyama (2003, p. 6) emphasised, this process is not circular but rather spiral in nature as new unconscious routines can be shared with other individuals in different groups or even organisations. Due to this, 'organizational knowledge creation is a neverending process that upgrades itself continuously' (Nonaka & Toyama, 2003, p. 6).

Another feature of Figure 2.8 is different entities that are involved in the knowledge creation process, namely individuals, groups, organisations and the environment. During socialisation individuals share direct experiences with each other by being in the same environment. These experiences may then be rationalised consciously and articulated within their group to form new knowledge, such as documents or concepts. Contradictions between an individual's tacit knowledge and the environment or other members of the group are made explicit and synthesised (Nonaka & Toyama, 2003, p. 5). With organisations constituting multiple groups (Z. Li, Zhong, & Wang, 2010, p. 254), new knowledge in forms of concepts or documents are then collected from different groups and combined in the organisation (situated within the environment) and subsequently distributed among employees. Employees (who are part of a group, an organisation and the larger environment) then internalise the concepts, documents or ideas by applying them in their day to day routines. The knowledge creation process continues when that individual shares direct experiences with a new person.

As the foregoing discussion illustrates, the categories of influences identified from the literature review are nearly synonymous with the entities described by Nonaka and Toyama (2003). Yet there is one major difference between them and that is that Nonaka and Toyama (2003, p. 5) used the words individual, group, organisation and environment to describe how knowledge is created through an

interaction between these entities while this thesis seeks to explore categories of influences that shape knowledge sharing. In short, the article by Nonaka and Toyama (2003, p. 5) looked at knowledge creation, while this study investigates knowledge sharing.

Other authors have also drawn upon the words individual, group, organisation and environment in the sphere of knowledge management, either in full or partially. C. C. Lee and Yang (2000, p. 789) for example argued that knowledge creating entities include individuals, groups and organisations. Mentzas, Apostolou, Young, and Abecker (2001, p. 98) differentiated between four levels of knowledge networking - individual, team, organisational and inter-organisational levels. According to Susan et al. (2006, pp. 43-44) knowledge intensive teamwork consists of multiple levels: individual, team (or network) and organisational level. Lastly, Ditzel and Ebner (2007, p. 251) stated that carriers of knowledge can be an individual, team, organisation or the environment.

The words have also been used in regards to knowledge sharing. For example Aizpurúa, Saldaña, and Saldaña (2011, p. 511) stated that knowledge sharing can occur at multiple levels including the individual, group and organisation. Another set of authors argued that the sharing of knowledge can be investigated at the individual, group and organisational level (Javadi, Zadeh, Zandi, & Yavarian, 2012, p. 213). Others again have used the words when discussing knowledge sharing activities (Shankar & Gupta, 2005, p. 260).

Based on the literature reviewed however, none of the studies explored if the categories of influences identified earlier (i.e. knowledge, individual, group, organisation and environment) could be applicable in practice. Instead, the literature to date has provided a range of influences that shape knowledge sharing instead of arriving at a consensus as to the key categories of influences that shape knowledge sharing. The overall aim of this thesis is therefore to develop a holistic framework that depicts key categories of influences that shape knowledge sharing so a more advanced understanding of the knowledge sharing phenomenon can be generated. To reiterate, a category of influence has certain properties but may or may not be fundamentally different in nature to another category while a key influence entails being fundamentally different in nature to another key influence.

Before converting the preceding discussion into a research objective however, one further aspect needs to be clarified, which is the level of analysis.

2.5 The level of analysis and first research objective

Table 2.2 in Section 2.3.9 illustrates that meta-analyses and reviews examined knowledge sharing from different levels of analysis. The term level of analysis 'refers to the level to which the [...] analysis will apply, i.e. group level, national level, [...], company level' (Louche & Baeten, 2006, p. 173). Four out of eight reviews chose the individual perspective, two the organisational/collective viewpoint and the remaining two reviews multiple levels of analysis. Although there is no 'correct' level of analysis (Dahler-Larsen, 2002, p. 17) as it depends on the aim of the research (Haw & Hadfield, 2011, p. 44), it should be cognisant and explicitly stated (Agle & Caldwell, 1999, p. 375) 'to obtain meaningful results' (Wimbush, Shepard, & Markham, 1997, p. 1714).

The difficulty in investigating a phenomenon, such as knowledge sharing, from the team, organisational and/or environmental level has been well documented. For instance, to gather results about the team level, the majority of the team members need to be included in the research (Mohammed, Hamilton, & Lim, 2009, p. 324). This issue is likely to be amplified at the organisational or environmental levels. Also 'developing appropriate measures to capture cognitive, affective, and behavioural processes' at the team level analysis can be challenging (Iszatt-White & Saunders, 2014, p. 147). From an organisational perspective, issues relating to knowledge sharing can take some time before they become apparent, in contrast to individual and team levels where problems may surface faster (D. Cooper, 2010, p. 114). Studying knowledge sharing from an environmental (institutional) standpoint is also problematic as variations within the environment are expected to influence the results (Michailova & Hutchings, 2006, pp. 399-400).

In addition, authors have argued that knowledge sharing, even within teams or organisations, is fundamentally between individuals as it depends on the willingness of the individuals to share their knowledge with colleagues (e.g. Chiri & Klobas, 2010, p. 246; Yi, 2009, p. 67). In their view, and subscribed to in this study, knowledge sharing should therefore be investigated at an individual level of analysis. Taking into account the potential issues identified above in using team, organisational and/or environmental levels and the stance that knowledge sharing

occurs fundamentally at the individual level, this study analyses knowledge sharing at the individual level. To make this explicit, as Agle and Caldwell (1999, p. 375) suggested, it is incorporated into the first research objective stated below.

Research objective one:

Develop key categories of influences that shape individual perceptions of knowledge sharing.

To reiterate, the overall aim of this thesis is to develop a holistic framework that depicts key categories of influences. In order to generate a framework, these key influences need to be first established. Whether the five categories of influences (i.e. knowledge, individual, group, organisation and environment) identified from the foregoing literature review could be applicable in practice to represent key categories of influences is investigated in Chapters 4 and 5 as part of research objective one.

The second aspect that guides the development of this holistic framework is contextual differences. Results in Witherspoon et al. (2013, p. 266) indicate that influences that shape knowledge sharing can be affected by country of research origin (see Section 2.3.8). This has been corroborated by other authors, such as Chow et al. (2000, pp. 89-90) and Kumar (2004, pp. 18, 48), who found that contexts can affect categories of influences, as elaborated on in the next section. Due to this, this thesis has broadened the research to four different contexts. The four contexts are branches of a single IT services organisation that are located in China, the Netherlands, the UK and the US. As is elaborated on in Section 3.5, four country branches are chosen from within that single IT services organisation due to their varying purposes and characteristics. The Chinese branch has been rapidly expanding, the Dutch branch hosts the European distribution centre, the UK branch is the headquarters for Europe and the US branch accommodates global headquarters. Examining each of the branches and comparing them allows a holistic framework to be developed that takes into account synergies and divergences between these contexts.

The purpose of the next section is to review existing knowledge sharing literature in the area of multiple contexts and to present the second research objective.

2.6 Contextual variations affecting categories of influences and the second research objective

The analysis undertaken by Witherspoon et al. (2013, p. 266), as summarised in Section 2.3.8, was the only meta-analysis or narrative review identified in this systematic literature review that examined if influences were susceptible to contextual differences.

Although they only had a limited volume of quantitative data to investigate if national culture (measured by country of origin of the various studies) was moderating the influences, two of the five influences measured differed significantly between individualistic and collectivistic countries. They were 'anticipated pay increases/promotion' and 'social network' (p. 266).

The remaining seven meta-analyses and narrative reviews omitted how context can affect categories of influences. A similar trend exists in primary research on knowledge sharing. That is, many studies seem to have concentrated on one context in particular and less on how contextual differences can influence knowledge sharing. This observation is in line with other authors who stated that single study countries (Durst & Edvardsson, 2012, p. 897; Jiacheng, Lu, & Francesco, 2010, p. 221; Ryan, Windsor, Ibragimova, & Prybutok, 2010, p. 140), single organisations (Boh, Nguyen, & Xu, 2013, p. 40) or a single key influence (Nita, 2008, p. 36) are more dominant than studies that have assessed multiple countries, organisations and/or key influences. However, studying an aspect such as individual perceptions of knowledge sharing in various contexts 'provide[s] multiple chances to capture synergistic effects' (West & King, 1996, p. 156) as well as divergences and "map out" the range and mix of knowledge-sharing situations' (Chow et al., 2000, p. 91).

This becomes apparent in studies that have moved beyond a single context as they reported on some influences that are susceptible to contextual differences. Amongst them are Chow et al. (2000, pp. 89-90) whose quantitative findings suggest that Chinese and US participants differed in their knowledge sharing habits due to national culture and contextual factors. In addition, results from a Chinese and Indian cross-country study indicate that network density (i.e. the strength of relationships an individual has in his or her network) differs between participants in these two countries (Kumar, 2004, pp. 18, 48).

At the same time, some influences seem to be stable across multiple contexts. From an individual perspective, position and education levels were not found to be significantly different between Chinese and Indian survey participants (Kumar, 2004, p. 48). Similarly, individual competencies were seen by both Hungarian and Bulgarian managers at medium- and large-sized enterprises as a key enabler for knowledge sharing (Antonova, Csepregi, & Marchev, 2011). Furthermore, and from an organisational viewpoint, the authors observed that the Hungarian and Bulgarian managers had similar perceptions as to key motivational incentives that were important at an organisational level. At the broader environment Hutchings and Michailova (2006, pp. 28-30) for example argued that institutional influences on knowledge sharing were very similar in China and Russia, because they both had Communist socio-political institutions.

What emerges from the preceding discussion is that influences are not necessarily stable across different contexts. Given the mixed findings earlier, the key categories of influences investigated in this thesis may also be subject to contextual variances. So instead of exploring research objective one in only one context or ignoring the possibility of contextual effects, the emerging key categories of influences are investigated in four contexts. The rationale behind this is threefold. Firstly, it can provide a different perspective as it broadens the understanding (C.-H. Lee & Jang, 2012, p. 383) of the knowledge sharing phenomenon that to date has predominantly focused on a single context per study. Secondly, it makes explicit in which contexts the holistic framework can be applicable. This is in contrast to several other authors who have remained implicit about in which countries they executed their investigation (e.g. de Vries et al., 2006, p. 121; Holste & Fields, 2010, p. 132; Z. H. Li et al., 2008, p. 3). Thirdly, it illustrates where synergistic effects (West & King, 1996, p. 156) or differences exist between the multiple contexts. As stated three paragraphs previously, contexts can be countries, organisations and/or key influences. This thesis concentrates on four branches of a single IT services organisation that are located in China, the Netherlands, the UK and the US (see Section 3.5 for further details) and multiple key influences.

Grounded in the foregoing discussion, the second objective of this study is as follows.

Research objective two:
Explore if the emerging key categories of influences are susceptible to contextual differences.

As with the first research objective, the above objective feeds into the overall research aim to develop a holistic framework that depicts key categories of influences. By exploring how the key categories of influences react to varying contexts, the holistic framework developed can illustrate synergies and differences between contexts and through this investigate the applicability of the framework in multiple contexts.

2.7 Summary

The goals of this chapter are to examine the existing body of literature, establish an area of contribution to knowledge, and develop a research aim and specific research objectives based on the findings from the literature. The main arguments leading to the two research objectives are summarised as follows. Knowledge is considered to create wealth, economic activity and an organisational sustainable competitive advantage (Dalkir, 2013, p. 79; Hislop, 2013, p. 67; Rabie, 2013, p. 36). Knowledge management is the process to manage that knowledge (Ahmed et al., 2002, p. 23). Knowledge sharing is a key activity within knowledge management (Heisig, 2009, p. 10). Although there is a large volume of literature in regards to knowledge sharing, it does not seem that the field has yet arrived at a consensus as to the key categories of influences that shape knowledge sharing (Section 2.4). Yet incrementally moving toward consensus is important in order to create a shared understanding (Smylie, 2011, p. 182) so a rigorous debate (Beesley & Cooper, 2008, p. 50) about the phenomenon can occur and guidance for knowledge sharing practices can be created (Wickramasinghe & Widyaratne, 2012, p. 216). Due to this, this thesis aims to develop a holistic framework that depicts key categories of influences that shape individual perceptions of knowledge sharing so a more advanced understanding of the knowledge sharing phenomenon can be generated.

In order to achieve this aim, the first objective of this study is to develop key categories of influences that shape individual perceptions of knowledge sharing.

However, influences can be susceptible to contextual differences (Kumar, 2004, p. 48; Witherspoon et al., 2013, p. 266). So instead of exploring research objective one in only one context or ignoring the possibility of contextual effects, the emerging key categories of influences are investigated whether they are susceptible to contextual differences. This notion is captured in the second research objective. The rationale behind this is that various contexts 'provide multiple chances to capture synergistic effects' (West & King, 1996, p. 156) as well as divergences and "map out" the range and mix of knowledge-sharing situations' (Chow et al., 2000, p. 91).

As is elaborated on in the next chapter, the context in this thesis represents four branches of a single IT services organisation that are located in China, the Netherlands, the UK and the US. Before expanding on this topic however, the following chapter discusses philosophical worldviews, the strategy of inquiry and research methods.

3 Methodology

3.1 Introduction

The purpose of the last chapter was to assess the existing body of literature in regards to knowledge sharing, and influences shaping knowledge sharing more specifically, establish an area of contribution and generate specific research objectives. The contribution of this thesis is in developing a holistic framework that depicts key categories of influences that shape individual perceptions of knowledge sharing within an organisational setting. Two objectives feed into this aim, namely the development of key categories and the exploration of whether the emerging key categories of influences are susceptible to contextual differences.

The aim of this chapter is to operationalise the two objectives. However, before discussing the selection of a qualitative interview research method (Section 3.4), a single organisation and four contexts within that organisation (Section 3.5), this chapter begins with clarifying the philosophical worldview taken in this research and the chosen strategy of inquiry (Section 3.3). This sequence follows Creswell's (2009, p. 5) chapter structure. At the same time, this chapter draws on other books such as Bryman (Section 3.3) and Creswell's first edition from 1994. The rationale for utilising Creswell's first book, rather than the third edition to describe philosophical worldviews, is that the author delineated five aspects of philosophy, including axiology and rhetoric, while in the later edition he seemed to have combined these into one type of worldview. As is argued subsequently, some of these aspects can operate independently however and researchers may subscribe to different schools of thought within the five aspects of philosophy so merging them into four types of worldviews seems limiting.

3.2 Philosophical worldviews

As outlined above, Creswell (2009, p. 6) termed the first aspect of research design 'philosophical worldviews', and explained that it revolves around general orientations that researchers have 'about the world and the nature of research' (2009, p. 6). Although these grand philosophical theories such as epistemology and ontology seem to be abstracted from practical scientific work, they do play an important role as they influence how a researcher perceives reality and how knowledge is constructed (Klenke, 2008, pp. 14-15). This in turn 'can lead to different views of the same social phenomena' (Grix, 2001, p. 28).

As indicated in the introduction to this section, Creswell's (1994, p. 5) first book considers five philosophical aspects, namely epistemology, ontology, axiology, rhetoric and methodology. The following paragraphs explain each of these philosophical facets and how this research identifies with them.

3.2.1 Epistemological worldview

Socrates commented that 'knowledge [...] is not attained until combined with true opinion [...]' (Plato, 360BC). Whether this translates into 'justified true belief' as outlined by Faucher, Everett, and Lawson (2008, p. 3) or whether the concept of knowledge was developed by Kant (1781, p. 17) will be left to philosophers and historians to be deliberated on; the point is that history shaped and encouraged many epistemological debates since (Alavi & Leidner, 2001, p. 109). The word epistemology has its roots in the Greek words 'episteme', meaning knowledge, and 'logos', which translates into theory, thought or reason (Jelavic, 2011, p. 2). Epistemology is concerned with the nature of knowledge and more specifically with the question: 'How do we know what we know?' (Klenke, 2008, p. 16). According to Nonaka (1994, p. 15), early epistemology centred on the 'truthfulness', that is the 'absolute, static, and nonhuman nature of knowledge' while more recently the emphasis has been placed on 'justifying personal beliefs as part of an aspiration for the "truth"'. This shift has stemmed from two opposing epistemological positions termed positivism/post-positivism and interpretivism.

Positivism argues that knowledge symbolises objective truth (Goodwin, 2009, p. 25), in other words that knowledge can only be acquired by observing and measuring phenomena that one experiences. In the field of knowledge management, this positivist view can prove to be challenging, especially in the social dimension of knowledge management where one's thoughts cannot be readily measured using empiricist measures of manipulation and observation (Trochim, 2006).

An altered view to positivism is post-positivism, which suggests that observations and measurements cannot be conducted without the chance of error; that is, the 'truth' or certainty cannot be claimed as argued by positivism. Critical realists, who represent a school of post-positivist philosophy, assert that science should continue to strive for the 'truth' but accept at the same time that life experiences differ from person to person and that complete objectivity cannot be achieved (J. M. Lawson, 2006, p. 4).

To overcome this, they propose triangulation of data and critical peer review. Triangulation refers to the process in which data are collected during different time periods and using different methods, while peer review allows critical analysis of someone else's work (Trochim, 2006).

In contrast to positivism and post-positivism is said to be interpretivism (Decrop, 2006, p. 46). Interpretivism rejects the notion that social reality can easily be measured and stresses that 'multiple realities [...] need to be understood in context' (Klenke, 2008, p. 23). That is, people are substantially different to natural sciences and hence call for a different set of research procedures. The aim of interpretivism is the empathic and interpretive understanding of human behaviour rather than the analysis of the driving forces that impact on society as aspired to by positivism (Bryman, 2012, p. 28). However, this method has its own limitations in that the researcher's interpretation is influenced by the frame of prior life experiences, their own subjective views and views obtained by interacting with others (Gale & Beefink, 2005, p. 353).

Therefore the epistemological worldview that a researcher consciously or unconsciously subscribes to directly influences the strategies of inquiry and methods. While an individual with a post-positivist view sees the world objectively and attempts to measure it accordingly, individuals with an interpretive perspective view the world as subjective and attempt to understand and interpret human behaviour.

This research adopts an interpretive stance primarily because the exploration of multiple contexts suggests multiple realities that ought to be understood. As discussed in the literature review, categories of influences can be susceptible to contextual differences, which suggest multiple realities. Secondly the objectives seek exploration, rather than validation, so the understanding of human behaviour has a higher priority than measuring the impact the categories of influences have on society. In short, this thesis subscribes to an interpretive epistemological worldview.

3.2.2 Ontological worldview

A philosophical debate related to epistemology that is explored is social ontology. Ontology originated from the Greek words 'onto' meaning 'of or relating to being or existence' and 'logia' which means 'names of sciences or departments of study' (OED Online, 2014). Finnegan (2005, p. 46), Goodwin (2009, p. 67) and other

authors have interpreted this as the debate on the nature of reality. There are two opposing and dominant schools of thought, although the terms differ between authors. The first ontological position is objectivism; also referred to as realism. It suggests that social entities should be considered as objective entities that have an independent existence and reality from their social actors (Bryman, 2012, pp. 32-33; Finnegan, 2005, p. 46). This theory supports the notion that social entities are pre-given and that social actors are unable to form and influence reality. As such, a social entity 'has the characteristics of an object and hence of having an objective reality' (Bryman, 2012, p. 33).

At the other end of the continuum is constructivism or subjectivism. It challenges the classical conceptualisation and argues that reality is subjective and that human actors substantially influence the reality in which they live (Obembe, 2007, p. 86). This suggests that social entities are not static but rather shaped and moulded unremittingly. If this is the case, then research conducted only takes a snapshot of this social entity or reality at a particular point in time, making knowledge indeterminate as Bryman (2012, p. 33) noted.

This last point however can be debated, depending on the researcher's epistemological orientation. David and Sutton (2011, pp. 75-76) suggested that positivists would agree that ontological objectivism exists and that individuals have no influence on that reality. Meckler and Baillie (2003, p. 280) however argued that social worlds can be ontologically constructive and at the same time epistemologically objective. They elaborated on this by saying that a 'property is ontologically subjective if it is essentially dependent on mentality' and 'epistemologically objective when its truth holds independently of any individual's thoughts or feelings about it' (2003, p. 299). An example was provided in the form a \$5 note in an individual's pocket. It was epistemologically objective as the paper physically existed in the pocket. At the same time this paper represented currency that could be exchanged for products and services which resulted from the collective mentality of individuals assigning a function to this paper. This suggests that there is no clear relationship between positivism and objectivism and that it is legitimate for researchers to follow their own assumptions and commitments as long as they state their underlying beliefs.

What emerges is that ontological considerations play an integral part when undertaking social research as they affect the researcher's question formulation and subsequent research methods.

As Bryman (2012, p. 34) pointed out, objectivists tend to highlight formal properties, beliefs and values of social entities that impact on individuals. On the other hand, constructivists tend to formulate questions that emphasise the importance of involving social actors to form reality. This study follows a more constructivist ontological worldview as the holistic framework to be developed is perceived to be formed by subjective interpretations of reality, rather than a pre-given reality.

3.2.3 Axiological worldview

Axiological worldviews or assumptions are concerned with the role of values. Creswell (1994, p. 43) noted that positivists utilise impersonal language and focus on perceived facts to provide an unbiased and value-free account of the issue under investigation. Interpretivists on the other hand acknowledge that research cannot be undertaken without bringing into the study underlying values or biases (T. Evans & Hardy, 2010, p. 26). They reason that as long as these values and biases are made explicit in the study, research results are valid. In regards to axiological assumptions, it is argued that the importance of making values and biases explicit depends on the strategies of inquiry and methods. For example, ethnographic analysis and observations involve active detection of actions which are then processed, analysed and interpreted.

This multi-step process, it is argued, is more susceptible to researcher biases and values than more post-positivist strategies and methods, such as semi structured interviews. This is due to the fact that the level of values and biases is limited to analysis and interpretation of results. This reasoning is similar to A. B. Thomas (2004, p. 166) who argued that structured schedules reduce interviewer bias. However, this perception is not shared by some other authors who stated that multi-step processes or unstructured interviews can reduce the bias, rather than increase it (Klenke, 2008, p. 126; Oxhorn, 2010, p. 341). The varying perceptions indicate that there is no correct answer. This research though follows a more post-positivist axiological worldview.

3.2.4 Rhetorical worldview

The fourth assumption that Creswell (1994, p. 5) proposed is rhetorical in nature. It relates to the language that is used throughout a study. Positivists use formal language with an impersonal voice and explicit definitions (Creswell, 1994, p. 43). Interpretivists utilise a more informal language and personal voice and adopt definitions based on emerging data (O'Connor & Netting, 2011, p. 143).

It is argued that rhetorical tendencies are not only influenced by positivism or interpretivism but also by academic fields and their preferences. As the Information School at the University of Sheffield favours a more positivistic rhetorical stance, this study adopts a more formal, impersonal language.

3.2.5 Methodological worldview

The fifth and final worldview is methodological and Creswell (1994, p. 5) argued that there are two broad types of research methodologies which are associated with the positivistic and interpretive view respectively. For positivists, the methodology focuses on analysing cause and effect deductively while for interpretivists the aim is to analyse themes that emerge during an investigation using an inductive process. The formulation of the two research objectives suggests that this research adopts an inductive methodological worldview, rather than a deductive one.

3.2.6 Summary

Considering that philosophical worldviews influence strategies of inquiry and research methods (Creswell, 2009, p. 5), the aim of the preceding section is to make these explicit. Five aspects are described, namely epistemology, ontology, axiology, rhetoric and methodology. Within each of the aspects, there are multiple schools of thought. The ones adopted by this research are summarised in Figure 3.1 on the next page.

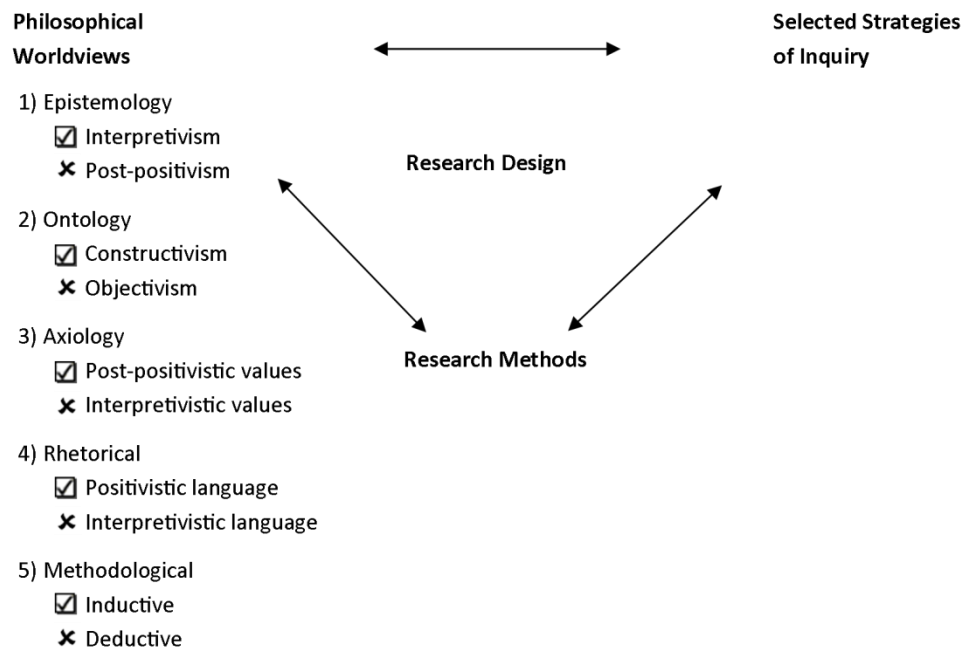


Figure 3.1. Selection of philosophical worldviews. Adapted from *Research Design: Qualitative, Quantitative, and Mixed Methods Approaches* (p. 5), by J. W. Creswell, 2009, Thousand Oaks: SAGE. Copyright 2009 by SAGE Publications. Adapted with permission.

Having discussed the present study's viewpoints in regards to philosophical ideas, Creswell's (2009, p. 5) second aspect is strategies of inquiry. The types of strategies available for consideration are expanded upon next.

3.3 Strategies of inquiry

The term 'strategies of inquiry' was consistently used in Creswell's (2009) book and refers to the specific procedures chosen for a research study. The author illustrated two quantitative, five qualitative and three mixed method strategies of inquiry. They are experiments and surveys; ethnographies, grounded theory, case studies and phenomenological and narrative research; and sequential, concurrent and transformative procedures respectively. Bryman (2012, p. 35) on the other hand associated research strategies with qualitative or quantitative research and termed Creswell's (2009, p. 11) strategies of inquiry 'research designs'.

What transpires is that multiple authors utilise different sets of terms to describe the interrelatedness between philosophical worldviews, overall procedures and specific methods. But not only do the terms vary between the authors, in some instances they differ as to what is perceived to be a strategy/design or method or whether they are associated with qualitative or quantitative research, as shown in Table 3.1 on the next page.

Table 3.1

Term comparison of Creswell (2009) and Bryman (2012)

Terms	Creswell (2009, p. 12)				Bryman (2012, pp. 76, 387, 584)			
	QL	QN	S/D	M	QL	QN	S/D	M
Case study	X		X		X	X	X	
Comparative	-	-	-	-	X	X	X	
Concurrent	Mixed		X		-	-	-	-
Cross sectional		X	X		X	X	X	
Ethnographies	X		X		X			X
Experiment		X	X			X	X	
Grounded theory	X		X		X			X
Longitudinal		X	X		X	X	X	
Narrative research	X		X		X			X
Phenomenological research	X		X		-	-	-	-
Sequential	Mixed		X		-	-	-	-
Survey		X	X			X		X
Transformative	Mixed		X		-	-	-	-

Note. QL = qualitative research, QN = quantitative research, S/D = strategy or design, M = method.

In Table 3.1 above, four terms, namely ethnographies, grounded theory, narrative research and survey, were classified by Creswell (2009, pp. 12-13) as strategies but by Bryman (2012, pp. 76, 387, 584) as methods. It is argued in line with Bryman (2012) that these four terms should be seen as research methods, rather than strategies, and are therefore removed from the following discussion on potential strategies of inquiry. The rationale behind this is that they are seen as approaches within a strategy, for example grounded theory within a case study strategy, rather than strategies on their own. This is in line with Mäkelä and Turcan (2007, p. 141) who argued that case studies can provide the data necessary to execute grounded theory.

In addition to removing grounded theory, ethnographies, narrative research and surveys as types of strategies, Creswell's (2009, pp. 14-15) mixed method strategies are extracted as it is argued that these are qualitative plus quantitative strategies combined. Considering that the research objectives are exploratory in nature, a qualitative over a quantitative approach is chosen (see Section 3.4) and hence making the mixed method strategies less appropriate. Finally, phenomenological research is eliminated as a strategy as Creswell (2009, p. 13) viewed it as a philosophy and strategy while Bryman (2012, p. 31) purely referred to it in philosophical terms.

It is argued, in line with Bryman, that phenomenology focuses on how individuals make sense of the world (Bryman, 2012, p. 30) and is therefore an epistemological consideration, rather than a strategy of inquiry consideration. Each of the remaining strategies is elaborated on beneath.

3.3.1 Case study strategy

Case studies are generally associated with an intensive and detailed analysis of a phenomenon such as a country, institution or individual (G. Thomas, 2011, p. 3). The aim of a case study is to ‘catch the complexity [... and] look for detail of interaction with its contexts’ (Stake, 1995, p. XI). Creswell (2009, p. 12) suggested that case studies fall under the qualitative research approach, while Bryman (2012, p. 76) argued that case studies often employ both qualitative and quantitative approaches. Their different viewpoints may be explained through the terms validity, reliability and replicability⁷.

Broadly speaking, validity refers to ‘whether the researchers in fact see what they think they see’ (Flick, 2014, p. 483). Richards (2009, p. 152) explained this as follows: ‘Good qualitative research gets much of its claim to validity from the researcher’s ability to show convincingly how they got there, and how they built confidence that this was the best account possible’. Reliability on the other hand is chiefly concerned with audiences being able to rely upon, depend on and put confidence in the qualitative research results (Richards, 2009, p. 150). Finally, replicability, as the word suggests, focuses on the ability of other researchers to replicate the findings of previous studies (Rubin & Babbie, 2011, p. 357). As this is difficult to achieve in qualitative research (Merriam, 2009, pp. 220-221), it is important that researchers provide in-depth descriptions of how the study was conducted (Bryman, 2012, p. 177).

If a case study aims to analyse complexities with a qualitative orientation, ‘writers [...] tend to play down or ignore salience of these [reliability, replicability and validity] factors, whereas [...] quantitative research [strategies] tend to depict them as more significant’ (Bryman, 2012, p. 69). This suggests that Creswell (2009, p. 12) was less concerned with validity, reliability and replicability and more

⁷ There is an interesting discussion offered by Drummond (2009) who argued that science should aim for *reproducibility* of results by using different approaches rather than *replicating* the same approach multiple times as repeating experiments should not be about uncovering fraudulent studies but rather uncovering differences that enhance science.

focused on analysing the complexities while Bryman (2012, p. 69) proposed a more balanced perspective.

3.3.2 Comparative strategy

In contrast to case studies which look at a single phenomenon or entity, comparative studies investigate two or more contrasting cases while employing similar or identical methods (Bryman, 2012, p. 74). According to Hantrais (1995, p. 1), this type of strategy has a history of being utilised 'in cross-cultural studies to identify, analyse and explain similarities and differences across societies' and hence obtain a clearer understanding of other nations. Creswell (2009) did not specifically state comparative research as a strategy and hence did not categorise it as qualitative or quantitative but Bryman (2012, p. 76) argued that this strategy can be used in both approaches.

In regards to validity, reliability and replicability, comparative strategies generally suffer threats to internal validity as causation cannot be established (Wallen & Fraenkel, 2001, p. 332). External validity, or the degree to which the results can be generalised beyond the single study, depends on sample selection and is strong when randomisation is employed and weaker when non-random methods are utilised (Rovai, Baker, & Ponton, 2014, p. 503). In regards to reliability and replicability, similar issues as outlined in the case study strategy apply. That is the quality of the study is dependent on the consistency of the measures and depth in which the researcher has spelled out the procedures employed (Bryman, 2012, pp. 59-60).

3.3.3 Cross sectional strategy

Comparative strategies, as outlined above, contrast multiple cases using consistent methods. In effect, they use two or more cross sectional strategies to analyse phenomena or entities (Bryman, 2012, p. 74). Put simply, cross sectional strategies collect data from two or more cases concurrently using more than one independent variable to examine associations between dependent variables (Adler & Clark, 2008, pp. 160-161). However these descriptions make comparative and cross sectional strategies seemingly interchangeable and Bryman (2012, p. 74) did not clearly distinguish between them explicitly. Indirectly though, the author noted that cross sectional studies select a large number of cases in order to measure variation in the data.

Creswell (2009, p. 12) argued that the cross sectional strategy is a type of survey design used within a quantitative approach.

Bryman (2012, pp. 45, 59) acknowledged that cross sectional strategies are frequently associated with survey designs but also highlighted that other methods such as diaries, content analysis and structured observation are employed with cross sectional designs. This suggests that cross sectional strategies should not only be associated with purely quantitative approaches but also qualitative ones. As to validity, reliability and replicability, the same issues as delineated in comparative strategies exist in cross sectional strategies, says Bryman (2012, p. 59). That is, replicability and reliability depend on the degree the researcher has spelled out the procedures and the quality of the measures respectively. External validity is strong if randomisation is selected while internal validity is generally considered weak (Bryman, 2012, pp. 59-61).

3.3.4 Experimental strategy

In comparison to the aforementioned strategies, experiments are less common in social sciences (Ackland, 2013, p. 40) due to the difficulty in manipulating independent variables (Giannatasio, 2008, p. 111) such as gender or social class groupings. Experiments are undertaken to test causal influence between an independent and dependent variable (Wallen & Fraenkel, 2001, p. 517). This implies a quantitative approach, which was supported by both Creswell (2009, p. 12) and Bryman (2012, p. 76).

In terms of validity, reliability and replicability, true experiments are regarded as demonstrating high internal validity due to the presence of control groups in which the independent variable is not manipulated. On the other hand, external validity, or generalizability, can be limited in experiments if the sample selection is narrowed to a particular region, gender or organisation (Mitchell & Jolley, 2012, p. 389). Interestingly, Bryman (2012, pp. 50-58) excluded a discussion on reliability for experimental strategies, although they were present for all other strategies described in the book. Similarly, Creswell (2009, p. 190) described reliability at a general level but not in relation to experiments. Therefore it is inconclusive as to whether reliability is generally high or low when employing experimental strategies. As to replicability, the same detailed procedures and measures as with the previously stated strategies are required in order to replicate the initial study.

3.3.5 Longitudinal strategy

As the name suggests, in longitudinal studies data are collected over two or more time periods and use the same variables and sample. According to Elliott, Holland, and Thomson (2008, pp. 228-234), longitudinal studies are becoming more widespread in social sciences despite issues of time and attrition as they can provide some insight into social change and causal influences over a longer period of time. Similar to cross sectional studies, Creswell (2009, p. 12) classified longitudinal strategies as a type of quantitative survey design while in Bryman's (2012, p. 76) point of view they are attributable to both qualitative and quantitative approaches. In terms of validity, reliability and replicability, this strategy can be viewed as a cross sectional research conducted over a time period and hence it displays the same issues as a cross sectional strategy (Bryman, 2012, p. 63).

3.3.6 Discussion

The prior section demonstrates that there are multiple strategies of inquiry that can be drawn upon when conducting research, depending on the aim of the study. Based on the research aim and objectives, it could be argued that a case study strategy is appropriate, considering that the literature reviewed has not yet explored key categories of influences shaping knowledge sharing in practice and in-depth. Similarly, this research could be classified as having a comparative strategy due to the exploration of the emerging key categories of influences in various contexts. It is argued that a cross sectional study is not appropriate as large scale, exploratory and qualitative data collection across four contexts is outside the realm of a three year research degree. An experimental strategy is also thought inappropriate as the research is at an exploratory stage. Finally, a longitudinal study is not viable due to the considerable costs involved and time required to collect data across four contexts and the uncertainty about access to an organisation for follow up investigations.

Therefore, two strategies seem appropriate, that is either a case study strategy or comparative strategy. In order to select the most suitable strategy, the focus is directed towards Bryman's (2012, pp. 67-76) detailed discussion on case studies versus comparative strategies. The author's main argument centred around whether the case 'is an object of interest in its own right' or 'backdrop to the findings' (Bryman, 2012, p. 69).

This corroborates with G. Thomas's (2011, p. 3) description that case study research 'concentrates on one thing, looking at it in detail, not seeking to generalise from it. [...] you are interested in that thing in itself, as a whole'. A comparative strategy on the other hand was described by G. Thomas (2011, p. 141) as a comparison of several individual cases with each other. In that instance, the case itself is less important than its comparison with other cases. In his words: 'The key focus would not be on [... one case], but, rather, on the nature of the differences between one and the other' (2011, p. 141).

This then raises the question about what constitutes a case. If a company is considered a case then investigating knowledge sharing within it could be considered a case study strategy. However, if a case represents a branch of the company in a particular country and multiple branches in different countries are compared, then it could be considered a comparative strategy. G. Thomas's (2011) description of a case does not contribute to an answer as it included both organisations and countries as subjects of inquiries. Further on however, the author stated that a comparative strategy 'is about the "guts" of the case, seen in its wholeness. There is a platform, though, on which sets of wholeness are compared' (G. Thomas, 2011, p. 141).

Although this study compares four branches of a single IT services organisation that are located in China, the Netherlands, the UK and the US (see Section 3.5), it is argued that the platform is the company under investigation, not the branches themselves. This is conceptually similar to G. Thomas's (2011, p. 153) nested case studies or Yin's (2009, p. 50) embedded case studies. In both instances, the two authors argued that the units of analyses are part of a greater or wider case. In this thesis the branches are considered to be subunits to the wider organisation. Therefore the study follows a case study strategy, rather than a comparative strategy. The selection is presented graphically on the next page (Figure 3.2).

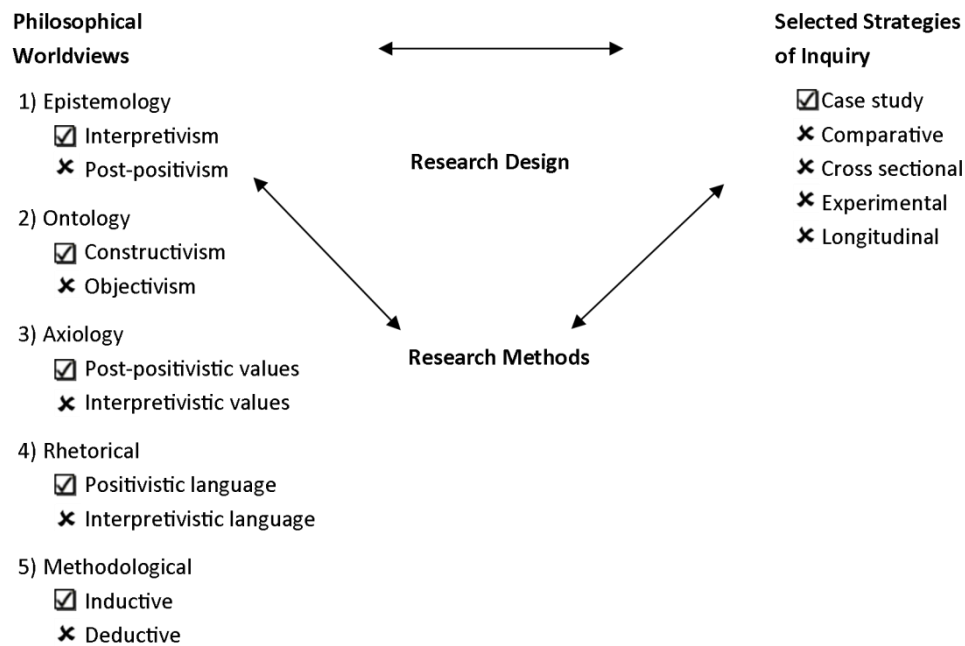


Figure 3.2. Selection of a strategy of inquiry. Adapted from *Research Design: Qualitative, Quantitative, and Mixed Methods Approaches* (p. 5), by J. W. Creswell, 2009, Thousand Oaks: SAGE. Copyright 2009 by SAGE Publications. Adapted with permission.

Having justified the strategy of inquiry, the next aspect, according to Creswell's (2009) framework, are the methods of research. Denzin and Lincoln (2003, p. 36) argued that strategies of inquiry influence the methods available to researchers, so in line with that reasoning, methods suitable for the case study strategy are examined below.

3.4 Research methods

Bryman (2012, p. 77) suggested three typical research methods for case study strategies. They are survey research, ethnographic research and qualitative interviews, each discussed in turn beneath.

3.4.1 Survey research method

The term 'survey', according to Brace (2013, p. 2), refers to a method in which data are collected via self-completion questionnaires or interviewer administered instruments. Furthermore, Bryman (2012, p. 59) stated that the term is set aside for cross sectional strategies only but contradicted himself when using the word in comparative and case study strategies (2012, p. 77). This demonstrates that not all methods can be uniquely allocated or associated with a specific strategy. Given the elusive boundaries, survey research is accepted as a data collection method for the case study strategy.

In addition, survey research is considered to be faster and cheaper than other methods, such as ethnography (see next section, Pole & Morrison, 2003, p. 53) How this method can be administered is depicted in Bryman’s (2012, p. 186) book and replicated in Figure 3.3 below.

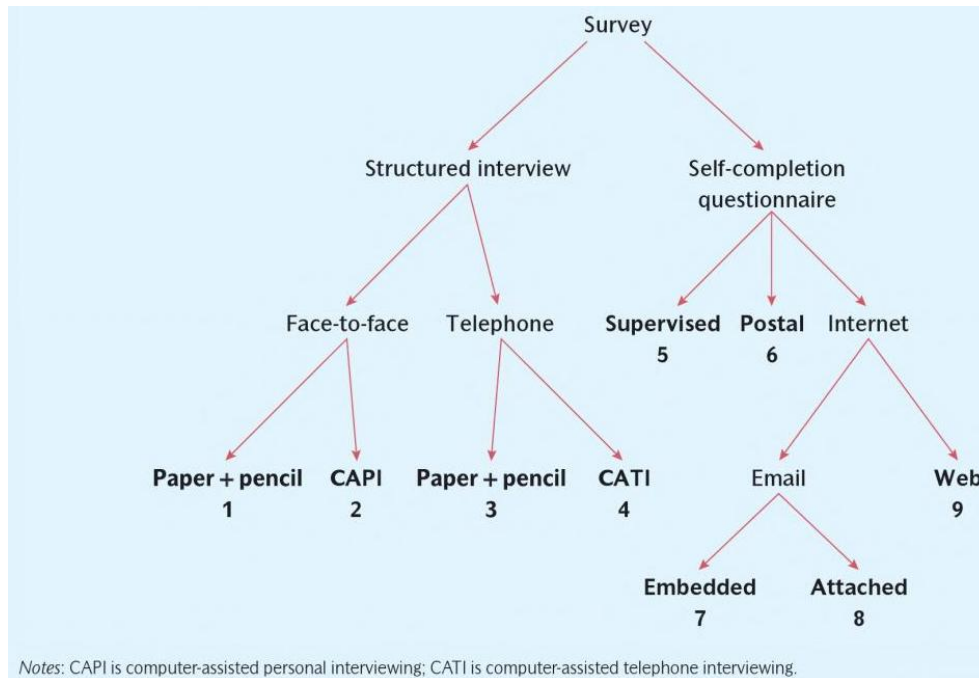


Figure 3.3. Main modes of administration of a survey. From *Social Research Methods* (p. 186), by A. Bryman, 2012, Oxford: Oxford University Press. Copyright 2012 by Alan Bryman. Reprinted with permission.

The decision tree above demonstrates that there are multiple avenues for researchers to conduct their survey. Factors that affect the choice include availability of sample, location of researcher and participants and intention of generalizability (Bryman, 2012, p. 188). In short, generalizability refers to the process of applying findings from one study to groups beyond the ones actually studied (Adler & Clark, 2008, p. 102). Additional factors that influence the choice for or against a certain survey research method are time zone differences, time allocated for data collection and monetary constraints as well as access to the internet.

When conducting a survey, many researchers opt to investigate a portion of people, called a sample, due to time and resource constraints (de Vaus, 2014, p. 80). At the same time, sampling brings certain limitations with it (Babbie, 2012, p. 235). One of these is sampling bias, meaning that some members of a population are intentionally or unintentionally excluded from being selected in the sample. Another limitation is that of sampling error. It means that the findings obtained

from the sample differ to that of the population and therefore do not represent the issues or situation in the population. Although this can be mitigated by the use of probability samples, researchers should aim to investigate the population rather than a sample if possible. It should be clarified at this point, that while the term population is generally associated with a nation's population, within the context of research this is usually a group of people (Babbie, 2012, p. 119), such as all members of one organisation.

Taken together, it is argued that if the population of a study is defined as an organisation and a survey can be conducted throughout the organisation then sampling bias and error can be minimised as no members of the organisation's population are excluded from the survey and the results from the survey are more likely to mirror the situation in the organisation's population.

3.4.2 Ethnographic research method

Ethnography originates, according to Erickson (2007, p. 189), from two Greek words, namely 'ethnekos' and 'graphein'. The first refers to people other than Greeks while the second term translates into writing. Combined, this means that ethnography is the writing of people to gain insights into their 'lifeways' that are different to the mainstream cosmopolitan living (Erickson, 2007, p. 189). A distinctive feature of ethnographic studies is that the researcher immerses himself or herself for an extended period of time observing, listening, probing and interviewing and collecting documents from members of that setting (Hammersley & Atkinson, 2007, p. 3). While it is difficult to pre-define the amount of time that needs to be spent in the setting, external events such as non-availability of resources or deadlines to produce reports can draw the data collection phase to a close (Hammersley & Atkinson, 2007, p. 94). In the absence of these events, ethnographic studies can take 'weeks, months or even years in specific communities' (Svasek & Domecka, 2012, p. 111).

3.4.3 Qualitative interview research method

Interviews as a research method are used both in the qualitative as well as in the quantitative domain. However Bryman (2012, p. 470) highlighted several points of differentiation. Interviews associated with qualitative research tend to be less structured, less concerned about reliability and validity, and put more emphasis on the interviewee's viewpoint and depth of answers compared to quantitative interviews. Qualitative or in-depth interviews can further be delineated into individual or group levels, the latter involving two or more participants.

Another dimension of qualitative interviews relates to the structure, namely semi structured and unstructured interviews (Svasek & Domecka, 2012, p. 56). In the former, the researcher generates a list of questions or specific topics that need to be covered at some stage during the interview but allows sufficient freedom to add additional questions if required. Generally however, the standard set of questions is applied to all interviewees consistently. In contrast, in unstructured interviews only the range of topics are pre-defined and the questions are generated directly during the interview, allowing maximum flexibility. This flexibility however can also be limiting when attempting to compare interviews or groups (Kalof, Dan, & Dietz, 2008, p. 130).

3.4.4 Discussion

Three case study research methods are discussed previously, namely surveys, the ethnographic method and qualitative interviews. Although the survey research method, and in particular the self-completion questionnaire, seems appropriate at first due to cost efficiencies, the research objectives are exploratory in nature and do not lend themselves for structured analysis. This reduces the choice to either ethnographic research or a qualitative interview method in order to obtain a detailed understanding. It is argued that while it would be possible to conduct ethnographic research in one or two country branches as part of a three year research degree, it is unfeasible to conduct ethnographic research in four country branches of a single IT services organisation within the allocated time period. Therefore, a qualitative interview technique is chosen. More specifically, a qualitative, semi structured approach is selected as depth of answers is sought. In addition, semi structured interviews are appropriate as the topic is fairly defined and interview data need to be comparable. The choice for qualitative interviews can again be mapped onto the diagram on the next page (Figure 3.4).

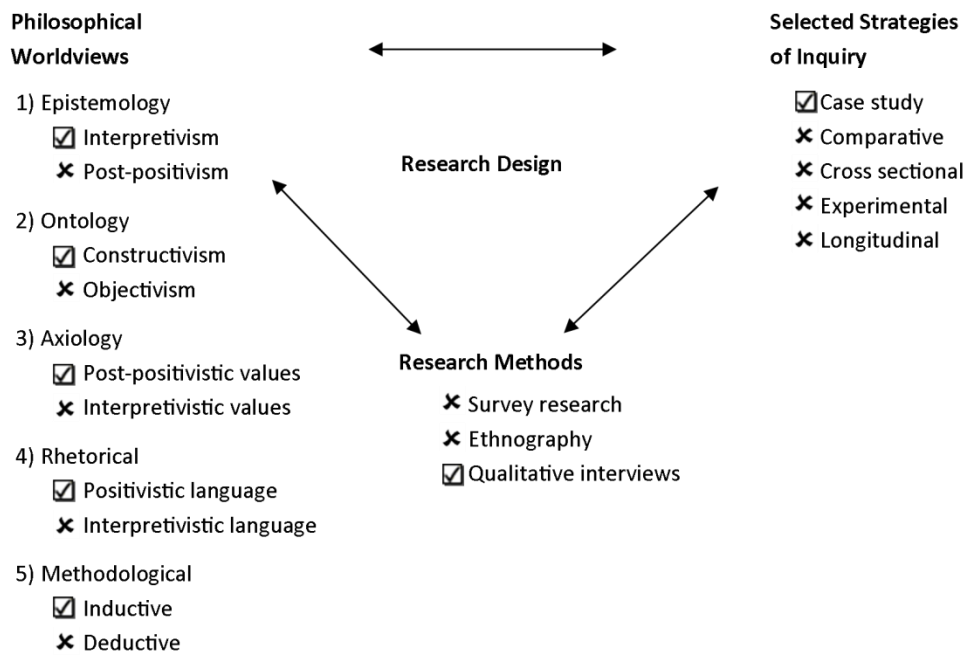


Figure 3.4. Selection of a research method. Adapted from *Research Design: Qualitative, Quantitative, and Mixed Methods Approaches* (p. 5), by J. W. Creswell, 2009, Thousand Oaks: SAGE. Copyright 2009 by SAGE Publications. Adapted with permission.

Having made explicit the research study’s philosophical worldviews, justified a strategy of inquiry and research method, the remaining five sections deal with the research setting and particularly the rationale behind selecting the four country branches within one organisation (Section 3.5), practical aspects associated with the pilot study (Phase I, Section 3.6) and main study (Phase II, Section 3.7) as well as data analysis (Sections 3.8 and 3.9). The key points are then summarised in Section 3.10.

3.5 Research setting

As elaborated on in Section 3.3, a case study strategy is selected as a company is perceived to be the platform from which the holistic framework is developed. That is, a single organisation is chosen on purpose to explore multiple contexts within that single company, rather than exploring one context in different companies or different contexts in multiple companies. The rationale behind investigating multiple contexts rests with prior research that indicates that different contexts can influence individual perceptions of knowledge sharing (Chow et al., 2000; Kumar, 2004; Witherspoon et al., 2013) so studying one context in different companies would ignore these findings. Although investigating multiple contexts in multiple companies (i.e. a cross sectional study) would alleviate this issue, it is argued in Section 3.3.6 that qualitative data

collection across four contexts in more than one company is outside the realm of a three year research degree.

In order to select a single organisation, 30 companies listed on the German stock exchange (DAX30) are primarily drawn upon due to their general openness to research and innovation (Wurzel, 2005, p. 28). In addition to the 30 listed companies on the DAX, PricewaterhouseCoopers's global 100 software leaders report (Chitkara & Marty, 2010) is utilised as the expected rate of return for knowledge assets in the software industry is amongst the highest, with at least 10.5% (Rivette & Kline, 2000, p. 62). As knowledge assets are 'grown' through knowledge sharing, according to Aktharsha and Anisa (2012, p. 14), focusing on companies that thrive on knowledge assets and sharing seems logical.

In addition to a focus on research and/or on knowledge sharing, the 130 companies listed need to be globally dispersed with a presence in at least 10 countries to select contexts with unique characteristics. Another criterion is that companies have to have more than 1000 employees worldwide to ensure a sufficient number of employees per country to select relevant interviewees (see Section 3.6.2 for more information).

Out of the 130 companies listed, 27 organisations are initially approached as contact details of relevant staff members can be located from websites, documents or social media. Of those 27, three are enthusiastic to participate in order to advance the understanding of knowledge sharing in their own organisation. One of the three firms has to decline subsequently due to their complex legal structure and lack of resources to support the study. The second firm indicates that they have their own organisational development agenda and this therefore limits the independent collection of data for the study. The third and chosen organisation is a large sized IT services company headquartered in the United States of America. In order to meet confidentiality requirements (see subsequent discussion for details) this company is called ITSC, short for IT services company. According to their fact sheet, the organisation is among the top storage vendors in the world with sales in more than 80 countries. They help clients to store and manage their information and provide tools to access and search for existing information across varying sources.

The rationale behind selecting ITSC, rather than continuing to contact other companies for cooperation, is twofold. Firstly ITSC embraces a knowledge sharing

culture where the vice president responsible for corporate learning and development actively seeks to improve the knowledge of employees. This is not a recent phenomenon, having used distribution lists 'year ago' where questions could be posted and knowledge shared through this in-house written system (UK-03)⁸. This allows key categories of influences to be developed (research objective one) in a company where knowledge sharing is not a new phenomenon. Secondly ITSC has a global presence in which the emerging key categories of influences can be explored as to their susceptibility to contextual differences (research objective two). As stated in the previous paragraph, ITSC has sales in more than 80 countries and thus provides a large diversity of contexts.

As alluded to already in the abstract and introduction chapter, the context in this thesis represents four country branches located in China, the Netherlands, the UK and the US. The choice of these four branches is both pragmatic and theoretical, a practice advocated by Okazaki, Mueller, and Diehl (2011, p. 84). From a theoretical perspective each of the four branches has a unique characteristic. The Chinese branch has seen rapid expansion in human resources in order to support a very fast paced growth of 'new business units and new product portfolios' (CN-02). The Dutch branch hosts one of three worldwide distribution centres that ship ITSC products to end clients, in this case across Europe, Middle East, and Africa (the others two distribution centres are in the US and Singapore). The UK branch is the headquarters for Europe, Middle East, and Africa and is responsible for sales and operations across these regions. Finally the US branch accommodates global headquarters from which ITSC is strategically managed. These different characteristics, it is argued, provides varying perspectives in which the emerging key categories of influences can be explored.

The second theoretical reason for selecting these four country branches is that there is a sufficient body of knowledge sharing literature and theory that allows the developed holistic framework to be evaluated against, which is a requirement for a discussion of findings (Karp, 2009, p. 177). Appendix B describes the meta-analysis carried out to gauge the number of knowledge sharing studies per country. The results suggest that the top three countries in which knowledge sharing studies have been undertaken are China, the UK and the US. The Netherlands also scores between rank five and 11, depending on the databases

⁸ This code refers to one of the seven UK ITSC employees interviewed.

utilised. This indicates that findings emerging from this case study can be evaluated against other studies conducted in these countries.

From a practical perspective, the four country branches have a sufficient number of employees to conduct interviews and are willing to participate. In addition the UK branch is located in the same country as the researcher, permitting multiple returns to the branch if required and language barriers are minimal. Lastly, the US branch is asked by the cooperating company to be included by default due to it being the company's headquarters.

In addition to the request to include the US branch by default, the company wants to remain confidential. To ensure this, several steps are put in place. These include that all generated documents are encrypted, that pseudonyms are used for ITSC and that all associated staff and technical information are masked. Therefore, this thesis uses the abbreviation ITSC (IT services company) to ensure that the findings cannot be linked to the actual organisation. Furthermore, a non-disclosure agreement between the University of Sheffield and ITSC's legal counsel is signed and the guarantee given that all draft reports and presentations are submitted for review before being used for academic purposes.

Following the signoff of the non-disclosure agreement, the organisation is involved in varying degrees and at different time periods, as explained in the next two sections.

3.6 Phase I - pilot study of the qualitative interviews

The objectives of the pilot study are fourfold. Firstly, it provides an opportunity to test the research instrument as a whole and resolve any reoccurring problems that emerge during the interviews (Roberts-Holmes, 2005, p. 35). In addition, it allows the researcher to judge their level of confidence and gain more experience in conducting qualitative interviews (de Vaus, 2014, p. 117). Thirdly, it assesses whether questions produce a degree of uneasiness, loss of interest or misunderstanding among interviewees.

Finally, it tests the interpretation of the instructions given to respondents as well as question flow (de Vaus, 2014, pp. 116-117).

3.6.1 Interview data collection methods

According to Adler and Clark (2008, p. 233) there are two broad avenues to conduct qualitative interviews. These are face to face or telephone interviews.

Generally researchers utilise the former in qualitative interviews (Bryman, 2012, p. 488) but there is also evidence provided by Sturges and Hanrahan (2004, p. 113) that there is no significant difference 'in the quantity, nature, and depth of responses' between face to face and telephone interviews. However, de Vaus (2014, p. 122) states that telephone interviewing allows 'skilled interviewers to build rapport'. As the pilot phase is designed to build the skill of interviewing, face to face interviews are selected. In addition, individual over group interviews are opted for as the research objectives deal with the individual perspective, not group or team perspectives (see Section 2.5). In addition, some participants might feel uncomfortable in stating their opinions freely in group interviews. Given that the research objectives are reasonably defined, the pilot study and subsequent Phase II interviews are constructed based on a semi structured interview style.

3.6.2 Sampling and location

Piloting the research instrument has several advantages, as stated two sections ago, including resolving reoccurring problems and amending questions that are being misunderstood by interviewees. This suggests that interviews conducted during the pilot phase are intermitted by phases of reflection and alteration of interview questions. Executing the pilot phase in the UK branch permits the researcher to return to the office multiple times if required as travel expenses associated with commuting between the University and the ITSC office are limited. Due to this the UK branch is chosen out of the four possible country branches.

The selection of interviewees within the branches is primarily based on their tenure of three or more years with ITSC. To recall, ITSC is chosen, in part, because the company has been advocating a knowledge sharing culture for years. Employees that have been with the company for longer periods of time are exposed to this culture more than staff that have just joined the organisation. This is not to say that all employees are automatically sharing their knowledge, but rather that they have been immersed in a culture that supports knowledge sharing and thus may provide more depth as to the categories of influences that shape employees' perceptions of knowledge sharing within this particular organisation.

The second selection criterion is that interviewees are based in different departments with the aim to obtain a broader view of key influences that shape their perceptions. The third criterion set for the selection process is that

interviewees occupy varying hierarchical positions within ITSC ranging from individual contributors⁹ to vice presidents, again with the purpose to elicit a broad view of key influences that shape their perceptions of knowledge sharing.

These three criteria are communicated to the ITSC contact, who then progressively sources potential participants that match these criteria and are willing to be interviewed as well as available during the data collection period. Each potential interviewee put forward by the ITSC contact is evaluated against these three criteria before being formally invited to participate in the study (see next section for further details).

To determine the number of potential interviewees that need to be progressively sourced by the ITSC contact, a concept called data saturation is drawn upon. While in quantitative studies the sample size is finalised before beginning with the data collection, in qualitative studies 'sampling continuously evolves throughout the research process, and the researcher continues to sample (and collect data) until these opportunities are maximized or until patterns in the data continuously emerge' (Jones, Torres, & Arminio, 2014, p. 133). This approach is also adopted in this study where an interview is conducted and analysed using constant comparison (see Sections 3.8 and 3.9), before another interview and analysis take place, until a regular pattern in the data emerges. In the UK, this process continues over a two month period from September to October 2011 (with up to one week between two interviews) until key categories of influences stabilised in the final three interviews to four key influences, as shown in Appendix C.

Yet the chosen selection criteria of interviewees may introduce potential biases. According to Babbie (2012, p. 204), sampling bias refers to selecting interviewees that 'are not typical or representative of the larger populations they've been chosen from'. In terms of tenure a conscious decision is made to exclude employees that have been with ITSC less than three years. By excluding them however, their perceptions of knowledge sharing are omitted from the study. Another sampling bias concerns the number of interviewees per department to the overall size of the department in the organisation. As will be illustrated in Table 4.1, three out of 24 interviewees belong to the academic department, while the actual size of the academic department accounts for less than 1% of employees. Similarly, five of the 24 interviewees are senior directors or vice

⁹ This seems to be an American term to describe employees without management responsibilities.

presidents, while these positions represent less than 10% of ITSC's headcount. However, this study consciously accepts the potential biases outlined in the previous page in order to obtain a broad range of perceptions across hierarchical positions and departments.

3.6.3 Administration

As stated previously, with the support of the ITSC contact, seven UK staff members are progressively sourced that have been working for the company for three or more years while taking into account their department and hierarchical position as well as their accessibility and willingness to participate. Once candidates confirm participation a suitable date and time is set up. One week before the interview the date and time with the interviewee is confirmed and in preparation for the discussion one participant information sheet, two participant consent forms and one interview guide printed.

At the start of the interview, the interviewee is asked to read the participant information sheet and then the consent form and acknowledge agreement with these by signing two copies of the consent form. One of the signed forms is returned to the interviewee along with the participant information sheet. The other is collected and electronically scanned as well as physically archived. The actual interview is tape-recorded with the permission of the interviewee. Following the discussion, interviewees are asked to complete a one page document with eight demographic questions. Once the interview is concluded, the interviewee is thanked for their time and support in the study.

The audio file is uploaded onto a secure web server hosted by the transcription company Dictate2us. Subsequently it is transcribed by one staff member at Dictate2us and validated by another, usually within 48 hours, and the resulting Word document made available on their server for download.

Once transferred onto the local computer, the content of the document is validated through simultaneously reading the text and listening to the original audio file. After the document is confirmed, it is imported into NVivo 9.0 for analysis.

3.6.4 Instrument

As explained in Section 3.4.4, semi structured, qualitative interviews are selected as the data collection method for both the pilot and main study (Phases I and II). As stated in that section, this implies a fairly defined set of questions while also

providing the opportunity to ask spontaneous, additional ones if appropriate. The set of questions (also called the interview guide) is arranged to 1) ease the interviewee into the topic of knowledge sharing and 2) explore it in a guided fashion to answer the first research objective. Taking these two issues into account, the interview guide is broken down into four broad segments, as shown in Figure 3.5 below.



Figure 3.5. Interview guide topics. Q = question number e.g. Q1 means interview question number one.

The first four questions are created to progressively focus the interviewee on the central theme of knowledge sharing and its importance. The subsequent questions are then adapted or adopted from previous studies such as Lemmetyinen (2007), Ford (2004) and Barreto (2003).

In addition, eight demographic questions are asked such as period of time working for ITSC, age and level of completed education as summarised in Appendix D.

3.7 Phase II – execution of qualitative interviews in branches located in China, the Netherlands and the US

Following the pilot study and minor revision of the interview questions, this phase is primarily concerned with executing the interviews in the remaining country branches and analysing the findings.

3.7.1 Interview data collection method

The method employed in this phase is identical to Phase I in that qualitative, semi structured, individual interviews are conducted.

3.7.2 Sampling and location

The sampling strategy in the pilot phase (Phase I) concentrates on employees that have been working at ITSC for three or more years, come from different departments and hierarchical positions and this is continued in Phase II. To reiterate, the rationale behind selecting interviewees that have been with the company for longer periods of time is that they have been exposed to a greater extent to the company's supportive knowledge sharing culture and hence may provide more depth as to the categories of influences that shape their perceptions of knowledge sharing. In addition, willingness to participate and accessibility are criteria taken into account when selecting the Phase II sample. Furthermore, the sample size is kept almost constant for both phases in order to maintain parity, a recommendation made by Netemeyer, Durvasula, and Lichtenstein (1991, p. 326). Based on the above, six interviews are executed in both the Netherlands and the US and five in China.

3.7.3 Administration

The data collection process in Phase II is identical to that in Phase I. That is, potential participants are approached by the ITSC contact first and if confirmed, a suitable date and time is set up. As before, the interviewee is provided with a participant information sheet and subsequently with the participant consent form for voluntary signature before proceeding with the interview itself. Four interviews are conducted via telephone as two participants are located in Hong Kong, not Beijing, and two are not in the office during the visit in the Netherlands and the US. In those four instances, the participant information sheet and consent form are sent via email before the interview takes place and verbal consent is obtained from participants at the beginning of the telephone call.

In all instances, the discussions are tape-recorded and then transcribed by Dictate2us within 48 hours.

3.7.4 Instrument

The interview guide developed in Phase I is also utilised in this phase which ensures consistency between the interviews.

3.7.5 Timeline

Initially the timeline for Phase II envisaged a sequential data collection process by visiting each participating country branch without intermissions. However, due to organisational peak periods and public holidays (for example Chinese New Year), the Netherlands is visited first for one week in January 2012, followed by China in the last week of February 2012 and the US for one week in April 2012. Identical to Phase I, interviews are spread out throughout the week to ensure an interview can be conducted and analysed, before another one is undertaken and analysed, using the constant comparison method illustrated in the following section.

3.8 Interview analysis techniques

When analysing qualitative data, a range of methods can be drawn upon as demonstrated by Bairstow (2012) who provided an extensive list of 22 techniques. The full list, including a brief description and comment as to the techniques' suitability in the present study, can be found in Appendix E. Of the 22 techniques, three are selected for further evaluation. They are grounded theory (technique No. 2), thematic analysis (No. 9) and phenomenography (No. 20).

As can be seen in Appendix E, Bairstow (2012) listed these three approaches as separate techniques. Gibbs (2011) on the other hand claimed that both grounded theory and interpretative phenomenological analysis fall under the umbrella of thematic analysis. Gibbs (2011) also included template analysis and framework analysis under the umbrella of thematic analysis, arguing that in all four instances the aim is to drive at common passages in the text or core themes emerging from the data. This is confirmed by Braun and Clarke (2006, p. 6) who stated that thematic analysis is '[...] a method for identifying, analysing, and reporting patterns (themes) within data'. Although it seems mainly used in psychology, the authors argued that it is applicable to a wider set of research outside of psychology (2006, p. 2). This is substantiated by Bock et al. (2005) which used thematic analysis when investigating behavioural intention formation in knowledge sharing.

That thematic analysis is an overarching concept, which grounded theory and phenomenographic analysis are part of, is demonstrated through the discussion that follows, starting with one form of phenomenography.

3.8.1 Interpretative phenomenological analysis

Interpretative phenomenological analysis, or IPA, focuses on engaging with reflections individuals make after having experienced a major event in their lives. These can include losing a parent or becoming a family (Smith, Flowers, & Larkin, 2009, p. 3). The other words, IPA 'wants to know in detail what the experience for *this* person is like, what sense *this* particular person is making of what is happening to them' (Smith et al., 2009, p. 3). Once the interviews are transcribed and read, exploratory comments are made. The task then is to transform these notes into concise statements, called themes (2009, pp. 84, 92). The authors stated that the sample should be reasonable homogeneous to allow examinations of similarities and differences between cases.

3.8.2 Grounded theory

Similar to IPA, grounded theory is an interpretational analysis technique but in contrast to the former, grounded theory is more theory-building than descriptive (Tesch, 1990, p. 99). Academics generally agree that grounded theory has been developed by Glaser and Strauss in 1967. According to the two authors, the methodology aims at '[...] the discovery of theory from data [which are] systematically obtained from social research' (Glaser & Strauss, 1967, p. 2). They further wrote that '[a]n effective strategy is, at first, literally to ignore the literature of theory and fact on the area under study [...]' (1967, p. 37). This is in line with Campbell (2009), who commented that grounded theory opposes users immersing themselves into the literature prior to data collection. In this study however, knowledge sharing literature forms the theoretical foundation before data are collected and hence the study is not in line with Glaser and Strauss's grounded theory approach. However, one aspect of grounded theory, called the constant comparative method is applicable to this research as outlined next.

3.8.3 Constant comparative method

The term constant comparative method was coined by Glaser and Strauss 'to aid and abet ongoing analysis' (Bryant & Charmaz, 2007, p. 43) where gathered data could be analysed while continuing the data collection process. This was in contrast to main social research approaches at the time where data were first collected and then afterwards analysed (Bryant & Charmaz, 2007, p. 43).

Hood (2007, p. 152) however warned that using the constant comparative method independently should not be termed grounded theory as it is only one of the three techniques used in Glaser and Strauss's grounded theory. This view is

further substantiated by Holton (2007) who argued that Baszanger (1997) did not employ the complete package of grounded theory when using the constant comparative method. Before discussing the selection of this method in more detail, the last two of Gibbs's (2011) qualitative data analysis approaches, namely template and framework analysis, are reviewed.

3.8.4 Template analysis

According to King (2012, 01:38), IPA, and similarly grounded theory, follow a bottom-up approach while template analysis strikes a balance between an inductive and deductive approach (see Section 3.2.5 for an explanation). This means that template analysis has a broad coding frame before commencing analysis but can be modified during analysis. This initial template with codes could stem from prior literature, depending on the philosophical stance of the individual conducting the study (Gibbs, 2012, 06:01) but is adapted or advanced as new data are being analysed. As Gibbs (2012, 07:46) stated, the advantage is that not all the data have to be read before producing a coding scheme but that some data are sufficient to create an initial coding template in addition to the a priori themes from the literature.

3.8.5 Framework analysis

Framework, which is short for thematic framework, was developed to conduct applied qualitative research with the aim to be grounded or generative, dynamic, systematic, comprehensive, easily retrievable, accessible to others with the option to conduct within and between case analysis (Jane Ritchie & Spencer, 1994, p. 176). The first stage of the process is to conduct a 'thorough review of the range and depth of the data' which provides a long list of seemingly important categories, concepts or themes based on the data (J. Ritchie, Spencer, & O'Connor, 2003, p. 222). Following this, an initial index is created that links the emerged categories, then thematically groups, and finally hierarchically sorts them. The index is then applied to the data before one chart per theme is created. These charts consist of columns in which concepts are placed and rows in which respondents are allocated with the aim to summarise key points of each piece of datum. The charts are then analysed for key characteristics which are mapped using diagrams to help researchers interpret the phenomenon.

3.8.6 Discussion

As outlined in the prior section, Gibbs (2011) argued that grounded theory and interpretative phenomenological analysis are subsets of thematic analysis, not, as Bairstow (2012) listed, separate analysis approaches. Based on the preceding reviews, there is support towards Gibbs' viewpoint as in all four techniques the researcher has to become familiar with the data by reading through the material, detecting and eliciting common passages in the text and taking notes. These are then refined and summarised into statements or themes. This research adopts Gibbs's conceptualisation and therefore the main analysis technique applied in this study is thematic analysis.

Within thematic analysis, grounded theory and phenomenography are suitable candidates in addition to Gibbs's (2011) template and framework analyses. However, four of the five possible alternatives are incongruent with the philosophy adopted by this study, strategy, analysis technique or use of existing literature. At the same time, the constant comparison method is compatible with the study's four aspects and therefore chosen as the analysis technique employed in this thesis. This decision is based on the following four considerations.

Firstly, the philosophical stance in this study is inductive as the research objectives lend themselves to an exploratory approach. This means that the findings are grounded in the data, not in a priori literature. Due to this, template analysis is not relevant for this investigation as it also incorporates deductive approaches.

Secondly, this study examines ITSC branches located in four different countries and that have a unique characteristic. Furthermore, the interviewees within each of the four branches can be heterogeneous apart from having worked at ITSC for three or more years. IPA on the other hand requires a reasonable homogeneous sample. Because of this the IPA alternative is not selected as an analysis technique.

Thirdly, the interview analysis is iterative as interviews are transcribed and analysed before further interviews and analyses are undertaken. It seems that framework analysis requires a sequential approach of data collection and data analysis. As Ritchie and Lewis (2003, p. 221) stated, familiarisation is the foundation that cannot be ill conceived or incomplete as it will impact the analysis. Due to this limitation, framework analysis does not seem to be suited to the current study design.

Lastly, grounded theory in its full methodological package is not achievable as an extensive literature review has been drawn upon to generate the research aim and objectives and create the interview guide prior to commencing with the data collection. Thus, grounded theory in its totality is not adopted as the literature of theory and facts are incorporated in the design of the study.

Constant comparison however, as one aspect of grounded theory, is appropriate as it is inductive, accepts an incomplete data set and has no limitation on sample diversity. Due to this, the constant comparison method is adopted in this research. Although a brief overview of constant comparison is given three pages ago, it is useful to exemplify how the method is applied in practice in the present study and is therefore discussed next.

3.9 Application of constant comparison to this study

According to Glaser and Strauss (1967) constant comparison is a process where facts emerging from the data generate open concepts. These open concepts may then be grouped into conceptual categories¹⁰. The difference between concepts and categories is that the former are directly related to facts in the data while the latter 'stand[...] by itself as a conceptual element of the theory' (Glaser & Strauss, 1967, p. 36) and can have 'many diverse properties' (Glaser & Strauss, 1967, p. 62).

In this thesis, the constant comparison method is extended to incorporate key categories of influences. The difference between a category of influences and a key category of influence becomes apparent in the next chapter where the former is a factor or category that has certain properties but may or may not be fundamentally different in nature to another category while a key influence entails being fundamentally different in nature to another key influence. As the example comparison in the section illustrates, group environment and organisational culture are created as two categories. Although these two categories may at first seem to be different in nature, their commonality is that they both shape individual perceptions of knowledge sharing as a whole or united entity. That is, the objectives of the group as a whole and the culture of the organisation as a whole shape knowledge sharing. This leads to the development of the key category of influence called institution.

¹⁰ See Bryant and Charmaz (2007, p. 607) for an alternative abstraction process of data – categories – concepts.

Therefore it is argued that categories can further be clustered into key categories of influences. This might be similar to Douglas’s (2003, p. 52) viewpoint in that conceptual categories underpin core conceptual categories. But to avoid confusion in terminology, the term key category of influence is used to represent the highest level of abstraction in the constant comparative method in this study. This process of abstraction can be represented diagrammatically, as shown below.

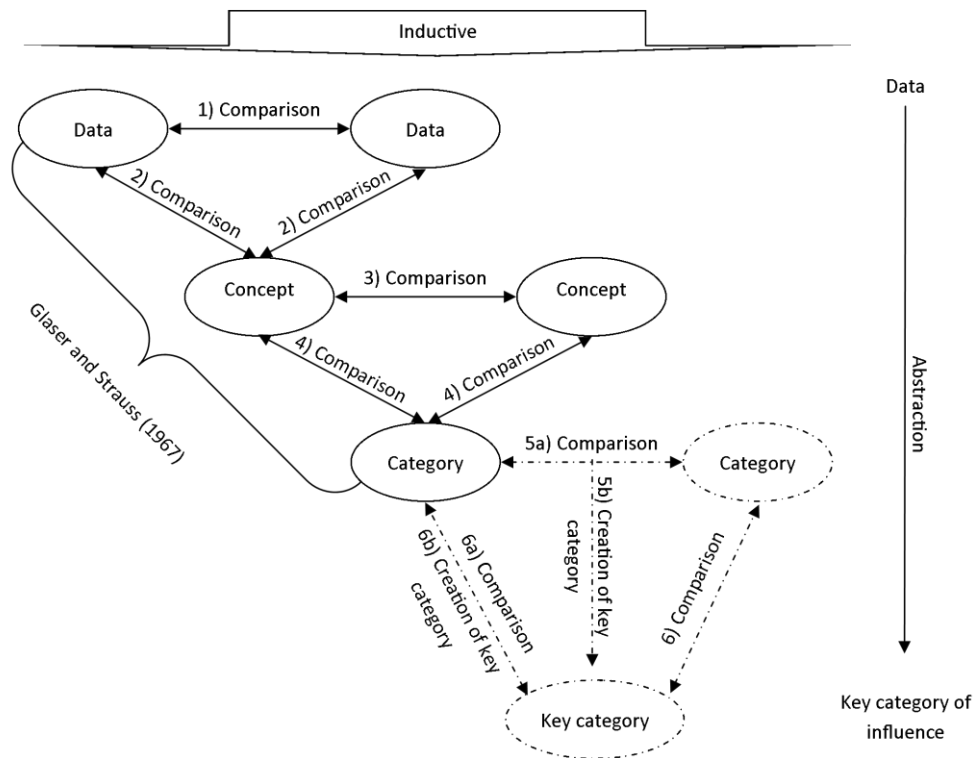


Figure 3.6. Constant comparison data analysis technique- data to key category.

As Figure 3.6 above illustrates, the constant comparison method follows an inductive approach where data are abstracted into key categories of influence. How this process is applied in this research is demonstrated below, starting with the comparison of data with data.

1) Comparison of data with data

The following extracts provide an example of how data are compared with data and the outcome based on this comparison.

One interviewee in Phase I responded to the question on what, if any, encouragements the organisation has to share knowledge with:

All of us work under some kind of a bonus scheme, though they differ in some respects, but essentially, there’s a decent-sized element of that bonus scheme that’s going to be based on the success of the, the financial success of the company. UK-01

Another interviewee in Phase II responded to the same question with:

\$R¹¹: Uh, it could be the country culture. And not, uh, material bonus. It's just the spirit of bonus maybe [laughter].

\$M: What type of spirit or what type of culture?

\$R: Uh, of course just a warm thanks to you. [laughter] Yeah, uh, because the division of the company must support each other.

\$M: Would you like some material benefits as well as a reward or are you happy with, um, a thank you?

\$R: [laughter] Uh, you know, just giving material reward is not practical. Is not practical because it is difficult to assess the knowledge you're sharing, assess the value, maybe to assess the correctness. CN-05

As the examples illustrate, in both instances the issue under consideration is reward. However it is argued that in the former it revolves around financial compensation while in the latter it focuses on rewards in spirit. Constant comparison initiates the evaluation whether the second quote relates to the first quote or not. This is directly interlinked with the second step, described below.

2) Comparison of data with concept

After reading the first quote in Phase I, a concept called 'rewards' was created and the text linked to that new concept. However, comparing the first statement with the second suggests that the rewards concept is not specific enough to accommodate the varying foci. Thus, the rewards concept has been separated into 'financial rewards' and 'non-financial rewards'. This shows that new data are compared to an existing concept and that it may require further refinement.

3) Comparison of concept with concept

Although the two steps outlined above should minimise the creation of multiple concepts that deal with the same or similar aspect, in practice overlaps may occur at the initial data analysis phase. Thus the comparison of a concept with other concepts is important to ensure that they are mutually exclusive. In this study for example, the concept 'other-sharer offence against sharer' was initially created to express an interviewee's observation that she would not share knowledge with a person that has offended her in the past. At a similar time, a concept called 'other-sharer respect' was established to summarise interviewees' statements on how respect an other-sharer has towards the sharer can influence the sharer's perceptions of knowledge sharing.

¹¹ \$R = respondent, \$M = moderator or interviewer

After a second stage of analysis however, it is found that both concepts concentrate on respect and that offending somebody is one aspect of respect. Therefore, the concept 'other-sharer offence against sharer' is integrated into 'other-sharer respect' concept. The process above is also repeated for the other 213 concepts created in the first round of analysis. In the second round of analysis, the number of concepts is reduced to 47 due to overlaps.

4) Comparison of concept with category

Usually, several concepts are combined to form a category. Two of the categories created in this study are 'attitudes' and 'personality characteristics'. The question then arose as to which category the following passage should be assigned to:

SR: Because I think that with experience also, it gives you that confidence of whatever material that you'd like to share, right? So it's, without that confidence, I'm less willing to share anything, right? US-06

As there was no immediate answer as to whether confidence (a concept) should be clustered under the attitude or personality characteristics category, material from psychology was drawn upon. Fleeson (2007, p. 846) associated self-confidence with a situation characteristic, Beattie, Hardy, Savage, Woodman, and Callow (2011, p. 185) argued that it is a 'trait-like characteristic' and Horn (2008, p. 74) stated that self-confidence is a psychological characteristic. This provides support to allocate self-confidence to the personality characteristics category.

5a) Comparison of category with category

Early on in the analysis, a category named 'sharer-other-sharer familiarity' was established. Concurrently, a category called 'socialisation' was created to encapsulate concepts associated with socialisation outside work. At first, this seemed suitable but after a further literature review and refinement of the framework, the categories are integrated into a higher level category called 'social relations' and the original categories converted into concepts (see Table 4.3). At the same time some categories thought to be identical in the first round of analysis are separated in the second round of analysis, resulting in the initial list of 15 categories to be split into 18.

5b) Creation of key category by comparison of category with category

Two categories, namely 'group environment' and 'organisational culture' were created and initially perceived as being mutually exclusive. Comparing the

underlying data however exposed that in both instances their commonality is that they shape individual perceptions of knowledge sharing as a whole or united entity. So although the former is concerned with the group and the latter with the broader organisation, they represent collective effects that shape individual perceptions. Due to this they are grouped under one single key category, called institution.

6a) Comparison of category with key category

From the beginning interviewees raised influences that stemmed from their own attitudes and characteristics such as wanting to help others learn or enhancing their own recognition by sharing knowledge. Based on this, a key category called sharer was created. Subsequently interviewees discussed influences that related to the other-sharer involved in the knowledge sharing act, such as respect of the sharer or interest in what the sharer had to say. This then raised the question on whether attitudes and characteristics of the other-sharer should be grouped under the sharer key category. Comparing the underlying data however reveals that in both occasions the influence relates to attitudes and characteristics pertinent to an individual and thus is similar in nature. Due to this the decision is made to group both attitudes and characteristics of the sharer and other-sharer under the sharer key category.

6b) Creation of key category by comparison of category with key category

The concepts 'knowledge confidentiality' and 'knowledge location' are clustered under the knowledge features category. The question then arose as to whether the knowledge features category forms part of the sharer key category. Reading through the interview transcripts uncovers that, although both confidentiality and location are affecting an individual in the sense that their work or position has an influence on the level of confidential knowledge they possess and where they store it, confidentiality and location concern knowledge itself, not the individuals. Therefore a new key category, called knowledge, is created under which the knowledge features category is grouped. The rationale behind this is that knowledge is fundamentally different in nature to attitudes or characteristics of the sharer and thus warrants a new key category, as elaborated on in the next chapter.

3.10 Summary

Whilst Chapter 1 focused on establishing an area of contribution and associated research objectives, this chapter aims to operationalise the two research objectives by identifying and justifying a suitable strategy of inquiry, research method and setting as well as an analysis technique.

In order to contextualise these decisions, the underlying philosophical worldviews of this study are discussed first. In summary, this research subscribes to an interpretive epistemology, constructivist ontology, post-positivistic axiology, positivistic language and inductive methodology.

Section 3.3 then discusses five possible strategies of inquiry, from which the case study strategy is selected. The rationale behind this is that the organisation, rather than its branches, is seen as the platform from which the two research objectives are explored.

Concurring with Denzin and Lincoln (2003, p. 36) that a chosen strategy of inquiry influences the available research methods, three dominant case study research methods are discussed (Section 3.4). Of these, the qualitative interview method is decided on. The justification for this is that the two research objectives are exploratory in nature and do not lend themselves to structured survey analysis. At the same time, ethnography is unfeasible in four different country branches due to time constraints. The qualitative interview method on the other hand balances the required depth of data collection for exploratory research with the timeframe available to collect the data.

The following section (Section 3.5) outlines the research setting and the rationale behind selecting an IT services organisation (ITSC) and within that organisation four country branches that are located in China, the Netherlands, the UK and the US. The basis for selecting this organisation is that it embraces a knowledge sharing culture and has a global presence in which the emerging key categories of influences can be explored as to their susceptibility to contextual differences. The choice of the four country branches is both theoretical and practical. As to the former, each of the four branches has a unique characteristic i.e. the Chinese branch is rapidly expanding, the Dutch branch holds a distribution centre that ships their products to clients in Europe, Middle East, and Africa, the UK branch is the headquarters for Europe, Middle East, and Africa while the US branch is the company's global headquarters. These different characteristics, it is argued,

provides varying perspectives in which the emerging key categories of influences can be explored.

Sections 3.6 and 3.7 then describe the process developed and executed to collect primary data from interviewees within the different country branches. The UK branch is selected for the pilot phase in which interviews with seven ITSC employees are held in September and October 2011. This is followed by six interviews in the Netherlands in the second week of January 2012, five in China in the last week of February 2012 and six in the US during a one week visit in April 2012. Apart from four individual telephone interviews, all other discussions are face-to-face and follow a semi structured interview approach. Each interviewee is given a participant information sheet and consent form to sign voluntarily (or verbal consent for telephone interviewees) before the actual interview is tape-recorded. The audio files are transcribed by Dictate2us and validated by the researcher before they are imported into NVivo 9.0 for analysis.

Five qualitative interview analysis techniques are presented in Section 3.8, of which the constant comparative method is chosen as it is inductive and accepts an incomplete data set. The final section (Section 3.9) illustrates how the technique is applied in practice in this study.

Having outlined how the interview data are collected and analysed, the next chapter discusses the findings in depth.

4 Developing a holistic framework that depicts key categories of influences – findings from the qualitative interviews

4.1 Introduction

Examining the knowledge sharing literature in Chapter 2 identified that the field has yet to arrive at a consensus as to the key influences that shape knowledge sharing (Sections 2.3 and 2.4). To move towards the goal of increasing our knowledge of knowledge, as Rutten (2003, p. 2) stated, create a shared understanding (Smylie, 2011, p. 182) so a rigorous debate (Beesley & Cooper, 2008, p. 50) about the phenomenon can occur and guidance for knowledge sharing practices can be created (Wickramasinghe & Widyaratne, 2012, p. 216), this thesis aims to develop a holistic framework that depicts key categories of influences that shape individual perceptions of knowledge sharing. Through this it contributes towards reaching consensus on what the key categories of influences are that shape knowledge sharing, taking into account potential contextual variations.

The purpose of this chapter is to present the holistic framework that emerges from the data collected from a total of 24 ITSC interviewees based in the Chinese, Dutch, UK and US branches. Before elaborating on the findings however, the first section of this chapter provides the necessary context in which the findings are embedded. This includes a history of the company, information specific to the country branches as well as demographic data collected from the interviewees. Thereafter there are four sections that describe one key category of influence respectively. Within each section, statements made by interviewees are drawn upon in addition to existing literature where relevant. The first key influence concentrates on institutions which act as a united entity on individual perceptions of knowledge sharing (Section 4.3.1). The second key influence fundamentally different in nature revolves around relations between individuals sharing knowledge. Section 4.3.3 discusses the third key influence which centres on individuals themselves (called sharers) and how their attitudes and characteristics can shape their knowledge sharing perceptions. The fourth and final key influence focuses on knowledge itself and how this can shape individual perceptions of knowledge sharing.

After presenting the four key influences of a fundamentally different nature, Section 4.4 illustrates that the key influences not only shape individual perceptions of knowledge sharing independently but that all four key influences are interrelated and together can shape knowledge sharing. A summary brings this chapter to a close.

4.2 Contextualising the findings

In the previous chapter a single IT services organisation, called ITSC¹², was chosen to collect empirical data in order to develop the holistic framework that depicts key categories of influences. The organisation was established in the 1980s to help clients to store and manage their information and provide tools to access and search for existing information across varying sources. This was initially achieved through mainframes and has developed into complex storage platforms that can control and visualise ITSC's and third party storage facilities as one single storage pool. In addition to selling physical storage units to many Fortune Global 100 companies across more than 80 countries, ITSC offers consulting services to customers to explore their current storage strategy. In addition, educational training courses are provided to clients in order for them to maintain their own storage systems.

Although ITSC has its headquarters in the US, the influence from other cultures is evident, making it a 'kind of strange combination of different corporate cultures' (US-02). Having research and development (R&D) facilities and sales offices in other continents has created a corporate culture with a good working atmosphere where employees want to generally help and support each other (UK-06) and there is an open environment (UK-02, UK-05). Another feature of ITSC is that it is geographically dispersed, not only in having sales in more than 80 countries but also that colleagues that work together are based in different locations and offices across the globe (US-02).

Having recognised that experts are geographically dispersed, ITSC has developed a knowledge management strategy to ensure that employees have the knowledge necessary to perform their best, regardless of their location. To achieve this, the company developed initially their own in-house written system where questions could be posted and knowledge shared between staff. Yet with the growth of the

¹² Please note that ITSC is a fictitious abbreviation in order to ensure confidentiality of the actual company.

company and the diversification of products from mainframes to varying storage platforms and additional services, monitoring and answering questions became too difficult on that single system (UK-03). What followed approximately 10 years ago were company internal web pages where staff would codify their knowledge and share it with others. As one interviewee vividly illustrated:

There was a culture [and] this was catching like a house on fire. It was just really moving fast. And to the point where people were genuinely responding on the phone, why are you calling? It's on the web. UK-02

The company then bought into Groove to share knowledge within project teams where relatively tight security was required (UK-07). Two years ago, ITSC then invested into Microsoft SharePoint, which is not only a good content repository but also has the ability to handle discussion groups and blogs (UK-07). Yet employees perceived it to be not very accessible and one of the potential reasons was given by a UK interviewee:

We've gone through a period of rolling out SharePoint sites and we've not built a corporate-wide strategy for rolling out SharePoint to give it a common look and feel and make sure that it's as user friendly as it possibly could be for the individuals that need to use it. UK-01

Due to this, an additional tool called Jive was sourced which, according to the designers, is a communication and collaboration platform for modern, mobile business (Jive, 2014). An IT infrastructure manager at ITSC explained that the difference between SharePoint and Jive is that the latter adds a social aspect to the already existing mix of tools available for information and knowledge sharing (UK-07). Yet Jive is not without its own limitations. Two of them are that there is a threshold as to the size of documents that can be uploaded and secondly that the documents are less well structured than in SharePoint (CN-02).

However, the KM strategy not only focuses on tools and codifying the knowledge i.e. externalisation, but also on creating a social environment where knowledge can be shared and internalised (see Section 2.4 for an explanation of terminology). One of those initiatives is called 'barn raising'. These are four day offsite events where managers from across the globe and departments come together to 'crowdsource' and then capture and share their latest internal knowledge on new products. This, according to ITSC, overcomes the challenge of introducing more new products than was possible to capture and disseminate information about.

Combining both codification and socialisation into an overall knowledge management strategy has created an organisational culture that has an open approach and environment (UK-07, CN-02) and where knowledge sharing is a 'natural thing' (UK-02).

However, knowledge sharing is not explored across the whole organisation. As stated in Section 3.5, four country branches are selected due to their unique characteristics. One of them is the Chinese branch which has seen rapid expansion in human resources in order to support a very fast paced growth of 'new business units and new product portfolios' (CN-02). This is due to enterprises being privatised in China (CN-03) so many companies seek advanced storage solutions that are cost effective and customised. In order to meet this storage demand, ITSC is actively recruiting staff. But not only is the branch recruiting new staff, it also needs to frequently replace staff that are leaving as employees in China can achieve up to double the current wage when switching employers (CN-01), thus creating knowledge attrition. In relation to knowledge sharing, interviewees stated that Chinese prefer to share their knowledge face to face (CN-01) and in a small group and relationships need to be established before knowledge can be shared (CN-02). Taken together it is argued that this gives a different perspective compared to the other three country branches discussed next.

The Dutch branch, in contrast to the Chinese one, is predominantly focused on building, testing and shipping ITSC products to end clients located across Europe, Middle East, and Africa. This includes not only new equipment but also spare parts to maintain existing equipment (NL-04). The majority of the personnel in the Dutch branch are therefore engineers and logistics professionals. In regards to knowledge sharing, one interviewee felt that sharing within the Dutch branch is open and transparent, yet when speaking to colleagues abroad then mainly good and positive aspects are shared while problems or challenges are omitted (NL-03).

The third branch selected for this study is the UK branch as it hosts the headquarters for Europe, Middle East, and Africa and is responsible for sales and operations across these regions. The branch is therefore staffed with key employees not only accountable for sales but also for internal and external education as well as the IT infrastructure. One peculiarity of the UK branch is, according to one interviewee, that changes requested by US headquarters are more difficult to implement as the Europe, Middle East, and African branches not only report to the UK branch but also to US head office.

When we have compliance changes or process changes coming from corporate, that's going to be distributed out to the countries and it's somewhat harder for us in ITSC because we don't have central control over the [...] organisations in the countries so it's a dotted line matrix organisation. In Americas they own it. So, it's a very straight communication path. So here, you have to sell, not tell. UK-05

Based on the above, it is argued that the UK branch gives a different perspective compared to the Chinese and Dutch branches and the US one described below.

The US branch accommodates global headquarters from which ITSC is strategically managed. It is the largest office within the organisation where vice presidents including operations, global sales and global support are based. In addition to the general office facilities this branch has a museum of products introduced to the market and an executive briefing centre where government officials, corporate leaders and investors can meet ITSC experts and executives. In regards to knowledge sharing, this branch provides insight into individual perceptions of sharing from a global strategic perspective, rather than from a regional or country operational perspective.

Breaking down the context in which the findings are embedded further, the next two paragraphs provide details about the 24 interviewees that are chosen primarily due to their longer tenure within ITSC, but also due to their departmental variety and hierarchical position diversity as well as their accessibility and willingness to participate (see Section 3.6.2). As Table 4.1 on the next page illustrates, interviewees have been working for ITSC between three and 24 years, with an average of over 10 years. This, it is argued in Section 3.6.2, enables the study to draw upon employees that have been immersed in a culture that supports knowledge sharing and thus may provide more depth as to the categories of influences that shape their perceptions of knowledge sharing within this particular organisation.

In terms of departments, interviewees belong to a variety of sections (see Table 4.1 on the next page) such as Finance and IT but several of them require a short explanation. For example, the Academy is the education department for the organisation, serving both internal staff and external customers and partners. Corporate Marketing focuses on demand generation, branding and awareness while Field Marketing develops strategies that support the sales process. The Sales function at ITSC is split into three aspects, where Pre-Sales scopes new work,

Sales manages and builds relationship with direct customers and Sales Operations forecasts sales and ensures revenues are correctly allocated.

GSS stands for Global Solutions Services and their aim is to help customers to define the right IT requirements and IT strategy. Lastly, employees in the Channels department work with resellers or system integrators rather than with end customers directly to sell ITSC products. The remaining selected demographic questions in Table 4.1 below should be self-explanatory.

Table 4.1

Selected interviewee demographics

Demographic	China	Netherlands	UK	US
Tenure in years	4.5	4	8.5	3
	5	5	9	5
	6	6.5	10	7
	6	8	11	14
	7	12	21	15
			21	22
			24	
Department	1x Academy 1x Corporate Marketing 1x Finance 1x IT 1x Sales	2x Finance 1x GSS 1x Logistics 1x Pre-Sales 1x Other	1x Academy 1x Business Development 1x Channels 1x GSS 1x IT 1x Sales 1x Sales Operations	1x Academy 1x Channels 1x Field Marketing 1x Finance 1x IT 1x Other
Position	2 Individual contributors 1 Manager 1 Director 1 Senior director	3 Individual contributors 1 Manager 1 Director 1 Vice-president	2 Individual contributors 4 Directors 1 Senior director	2 Individual contributors 1 Manager 1 Director 1 Senior director 1 Vice-president
Gender	1 Female 3 Males	6 Males	7 Males	2 Females 4 Males
Age range	3x 31 - 44 2x 45- 55	6x 45- 55	1x 31 – 44 4x 45 - 55 2x 56 - 64	4x 31 – 44 1x 45 – 55 1x 56 – 64
Education^a	3 Bachelors 2 Masters	1 High school 1 Trade 3 Bachelors 1 Master	3 Trade 4 Bachelors	3 Bachelors 3 Masters

Note. x = number of interviewees per group. For example, 1x Academy stands for one interviewee belonging to the Academy department. The rationale for summing and

collating the data, rather than delineating the demographic data per interviewee, is to ensure confidentiality of interviewees.

^aThe levels of completed education should be read as level or equivalent, such as Bachelor or equivalent due to the different education systems in the four countries.

Having provided the context in which the findings are embedded and interpreted, the next four sections describe one key category of influence respectively, starting with institutions as the first key influence.

4.3 Four key categories of influences, each being fundamentally different in nature, and their susceptibility to contextual differences

4.3.1 Institutions as first key category of influence

To recall, a key category of influence is different to a category of influence as the former is fundamentally different in nature to another key influence while a category has certain properties but may or may not be fundamentally different in nature to another category. The first key category emerging from the data that is different in nature to the other three key categories concentrates on influences that act as a united whole or entity on individual perceptions of knowledge sharing. These united entities, indicated by interview findings, can be groups, organisations or stem from the environment, such as governments. As these influences represent aggregated or united phenomena, they are conceptualised in this thesis as institutions.

Institutions, according to institutional theory, are social structures that comprise in different degrees of 'cultural-cognitive, normative and regulative elements that, together with associated activities and resources, provide stability and meaning to social life' (W. R. Scott, 2001, p. 48). Cultural-cognitive elements are 'shared conceptions that constitute the nature of social reality and the frames through which meaning is made' (W. R. Scott, 2008b, p. 58). The basis of compliance is shared understanding; and common beliefs and shared logics of action are indicators of cultural-cognitive influences (W.R. Scott, 2001, p. 52). Normative effects 'introduce a prescriptive, evaluative, and obligatory dimension into social life' and outlines what people should or should not do (W. R. Scott, 2008b, p. 54) while regulative elements 'stress rule-setting, monitoring, and sanctioning activities' (W. R. Scott, 2008a, p. 428).

Institutions with its shared logics of action, obligations and rules are above the individual level and cannot be condensed to individual motives and attributes

(DiMaggio & Powell, 2012, p. 8). Instead institutions can be groups (Dawkins, 2010, p. 130; Misani, 2010, p. 738), organisations (Baba, Blomberg, LaBond, & Adams, 2013, p. 80) or parts of the larger environment, including governments (W. R. Scott, 2007). It should be noted however that these institutions do not only affect individuals ‘top-down’, but that individuals can also shape institutions over time (W. R. Scott, 2007).

The following three sub-sections exemplify how interviewees perceive groups, ITSC and aspects of the broader environment as aggregated or united phenomena that, as a whole, influence their perceptions of knowledge sharing.

4.3.1.1 Groups as types of institutions

Findings suggest that groups can create and maintain a social structure containing cultural-cognitive elements. As a Chinese interviewee stated, his team established a common language and a common sense by sharing knowledge.

For a team we needed to work together very well. We need to have a common language and we also have a common sense and so the way we achieve is to share the many, many things and make us everyone know what we have, what is our advantage, what we need to do and what is our target and what we can do for each other and including the knowledge. And make everyone can make progress and become better and better, stronger and stronger. I think knowledge sharing important in a team, in a group. CN-03

Further on in the discussion, the interviewee stated that the team environment, described above, has an influence on individual members and their choice to be open and share knowledge. That language can ‘influence the creation and maintenance of cognitive categories’ (Suddaby, 2010, p. 17) indicates that the common language established in the interviewee’s team is a cultural-cognitive element rather than a normative or regulative one. Combined with the interviewee statements, this suggests that the team environment as a whole, with its common language and common sense, can shape individual perceptions of knowledge sharing.

In addition to groups providing cultural-cognitive social structures, a US interviewee illustrated that groups can also contain normative effects that have a prescriptive dimension on how to behave and share knowledge. As is illustrated in the quote on the next page, moving into a team that has been trained by the big four auditing firms required large adjustments of the interviewee in terms of habits and behaviour.

I mean auditing is very methodical, very structured and most of my immediate team members come from the big four accounting firms. So I was, I think, probably the only one actually that transitioned over from a business area into auditing. So it was hard in the sense that my colleagues have certain behaviours that, I think, they picked up from this big four accounting firms, and here I'm coming more from the business side and so I have my own set of habits and behaviours and so I'm learning how my colleagues work and what I could be doing better and so it's been a pretty big adjustment. US-04

The interviewee then alluded to fact that the auditing firms and the Institute for Internal Auditors create best practices, such as that "Every audit report should contain X, Y, and Z." And, you know, in other words you should share your knowledge of this audit in a particular fashion so that it meets their guidelines' (US-04, see Section 4.3.1.3 for further details). Taken together, the above indicates that groups or teams can establish and maintain a prescriptive dimension that can act as a united entity on individual perceptions of knowledge sharing.

The notion of viewing groups as united phenomena is in line with some of the knowledge sharing studies, although the authors have not utilised this terminology. For instance Bakker, Leenders, Gabbay, Kratzer, and Van Engelen (2006, p. 602) found that group tenure had a significant influence on knowledge sharing between individuals as groups that have been working together for longer shared more frequently than groups that have been created more recently. In addition, group size and member age had an influence where smaller groups and groups where the average age of the members was younger positively influenced knowledge sharing (Brătianu & Vasilache, 2012, p. 390).

In summary, the foregoing discussion exemplifies how interviewees as well as prior literature has conceptualised groups as united phenomena that, as a whole, shape individual perceptions of knowledge sharing. Additionally to groups, interviewees have illustrated how the organisation, in its entirety, can shape their knowledge sharing perceptions.

4.3.1.2 The organisation as type of institution

To recall, institutions comprise in different degrees of 'cultural-cognitive, normative and regulative elements that, together with associated activities and resources, provide stability and meaning to social life' (W. R. Scott, 2001, p. 48). Interviewees identified from an organisational perspective not only how organisational culture (a cultural-cognitive element) as a whole influences their

perceptions of knowledge sharing but also how leadership (normative) and rewards (regulative) on an aggregated level can shape their perceptions.

Each of the influences is discussed in turn, starting with the cultural-cognitive element of organisational culture.

Organisational culture as a cultural-cognitive element

Organisational culture, according to S.-B. Yang (2007, p. 97), is a cultural-cognitive element as it 'is characterized by the shared understanding through which a common framework of meaning is constructed' and is a major concept in an organisation's internal environment (Samson & Daft, 2012, pp. 88, 124). It consists of values, norms and practices (Klopper et al., 2006, p. 27) and guides how employees should behave, communicate or carry out their tasks.

Interviewees at ITSC maintained that the organisational culture exhibits low levels of competitiveness, formality and organisational politics. Instead, one UK interviewee stated that ITSC's culture nurtures camaraderie and openness. This in turn can provide a fertile ground on which employees can thrive, and knowledge sharing becomes a 'natural thing', as that interviewee pointed out (UK-02).

Organisational culture, and in particular openness, was brought up by three other interviewees that participated in China, the US and the UK. The latter highlighted that the implicit assumption that employees should have an open approach is not something that is written down at ITSC but rather a feeling among employees.

The culture, I think, within the organisation generally would be to say that we do have an open approach. Nobody says you must keep information secret. It's more of you share information so that it can be available to those who have need to know. But it's not a kind of a direct instruction as such; it's more of a feeling within the organisation. UK-07

As the above quote indicates, openness is part of the organisational culture that is transmitted by a vibe or feeling among employees. Furthermore, the UK interviewee stated that information is shared so it is available to others, suggesting that this is what ITSC employees typically do, which is a cultural cognitive indicator according to W. R. Scott (2008b). It is argued that the words vibe and feeling provide support towards the notion that openness is an organisational cultural effect.

One could argue that the previous quote also associated openness with knowledge sharing when the interviewee stated in the third sentence that 'you

share information'. This potential association was made more explicit by a US interviewee who said that the organisational culture is very open to sharing.

Actually I think this company is very open. I think there's a lot of information shared. [...] We stood up this social collaboration platform [...] originally with a small number of users and we let it grow organically, just for people to go in and use it. And by default, most of the people are sharing information and the actual adoption of a solution is just continuing to increase. Nobody is making them go in there but the information, they just decided to do it on their own. So [...] if you look at our corporate culture, I think, they're very willing and open to share.
US-01

This exemplifies that an organisational culture which fosters an open approach, as a whole, can influence knowledge sharing. It also suggests that knowledge sharing is a voluntary activity, again supporting the claim that this is a cultural influence on employees (see Section 4.3.1.3 for details on the last point made).

Although the discussion so far has linked openness with organisational culture and openness with knowledge sharing, the above interviewees did not provide a clear rationale on why openness influences their knowledge sharing. This is different to a Dutch interviewee who said that one has to feel confident and feel safe when sharing knowledge. These two elements are influenced by the organisational culture or environment.

I mean sharing knowledge on things that [went] good is very easy and straightforward, of course. Sharing knowledge on things that did not go so well becomes more problematic and then you need to also create an environment which is a way you would at least feel confident that your failures or things that you sort of did not do well are not interpreted or are not being treated as real failures. [...]

It depends on the atmosphere that you're in. I mean if you feel confident and feel safe and you think you can say anything you want to say without feeling threatened in one way or the other, then more knowledge sharing can be done. When you don't feel that confident and you feel maybe that you're in an environment where there's more pressure in one way or the other then only the sort of maybe expected knowledge sharing is done and so it depends on the environment, I would say. NL-03

What transpires from the above statement is that knowledge sharing may be influenced by the extent an organisation has an open culture. If employees perceive the organisation having an open approach, they feel more confident and safe to share not only positive experiences but also instances where experiences were negative. It is argued that in all three quotes the common theme is that of cultural openness being conceptualised as a united entity. Yet interviewees not only discussed a cultural-cognitive element, interviewees across all four country

branches also illustrated how organisational leadership can shape their perceptions of knowledge sharing.

Leadership as a normative element

Normative elements, as stated in Section 4.3.1, 'introduce a prescriptive, evaluative, and obligatory dimension into social life' (W. R. Scott, 2008b, p. 54). According to Jennings and Greenwood (2003, p. 197) and Corina and Taplin (2012, p. 598), this normative dimension is created by leadership within an organisation. How organisational leadership can influence perceptions of knowledge sharing is illustrated by interviewees located across all four country branches. The first revolves around the lack of leadership to create a global knowledge sharing strategy while the second focuses on leadership encouragement. Explanations and quotes are provided below.

Leadership, according to Burke and Litwin (1992, p. 532) is defined as 'executives providing overall organizational direction and serving as behavioral role models for all employees'. Two interviewees, one from the Netherlands and one from the UK, argued that leaders at ITSC could do more to promote a single knowledge sharing strategy. Specifically, they claimed that there is no global strategy on which knowledge sharing tools should be used throughout the organisation. Instead, various departments have different tools and technology to share their knowledge.

Getting consistent tools to be able to say, this is our tool to be able to promote, encourage, reward knowledge sharing I think that would be great right now. We, in Support, have our own tools. Marketing, I'm sure, has their own tools. Everyone has sort of their own processes and tools and I think championing some sort of consistency around that, around the people, process, tools, around knowledge sharing would certainly help provide guidance and direction for all the groups [...]. US-06

As the above quote exemplifies, a global strategy would encourage consistency on tools and knowledge sharing, in particular on promoting, encouraging and rewarding sharing. As the interviewee stated, ITSC leaders should sponsor a unified organisational direction when it comes to knowledge sharing.

An example of where such an overall direction seemed to lack was provided by a UK interviewee who argued that the implementation of SharePoint was disjointed.

Question: You said knowledge sharing is something, it's not ideal in effect, can you be a bit more specific than that?

Answer: We're just adopting a tool that we call the Loop and which I think will help share information and make us a bit more efficient. I think the tools that we used in the past years have not been the most efficient and we've not implemented them in the most efficient way. We've gone through a period of rolling out SharePoint sites and we've not taken a corporate-wide, we've not built a corporate-wide strategy for rolling out SharePoint to give it a common look and feel and make sure that it's as user friendly as it possibly could be [...]. UK-01

Similar to the US interviewee's viewpoint in the first quote, the statement above highlights the lack of leadership when implementing tools, such as SharePoint. This resulted in varying interface styles and reduced user friendliness. In both cases the interviewees called for a global strategy, directed by ITSC leaders, which in their view consolidates tools and increases consistency. This in turn gives employees corporate-wide guidance, including directions on knowledge sharing.

Although guidance and direction by leaders can influence knowledge sharing as suggested above, it is only one aspect of leadership. Returning to Burke and Litwin's (1992, p. 532) second part of their definition, the authors argued that leaders also serve as role models for staff. In the context of knowledge sharing, this could be interpreted as that they should actively participate in knowledge sharing and encourage their followers to do the same. However, based on a discussion with a US interviewee, ITSC leaders seem to be led by customers requesting more knowledge sharing, rather than by serving as role models themselves.

Question: What, if any, encouragements does the organisation have for you to share your knowledge?

Answer: I think there's tremendous encouragement. There's encouragement because we hear it directly from our customers they want to know more about our products, they want to partner closer with us. So, that directly drives the company to support us in, all the way up to our CEO. To want us to share more and more information. [...]

Other than when it comes from the customer, people react to it. It's very much a reactive support to that. But as far as proactively, organisationally saying, "Hey, you know what? We really want a clear focus around knowledge sharing", I would have to say it's certainly an area of improvement. Going back to your question, does the company or management or whatever you want to put it, really support this concept? This type of sharing of knowledge and I don't think it does as much as it should. In other words, it doesn't do too much. US-06

As the interviewee pointed out, there is no clear support from leaders that encourages knowledge sharing. Without leaders proactively promoting and

encouraging sharing, time set aside for staff to engage in knowledge sharing and training is reduced (US-06).

This exemplifies that knowledge sharing can be influenced by the degree that leaders encourage it. This is in line with a Chinese and Dutch interviewee who argued that the environment that leaders create can either encourage or discourage knowledge sharing (CN-03, NL-03).

When reviewing the statements above, it seems that the interviewees concentrated on the overall leadership within ITSC. The first interviewee argued that the organisation's leaders should sponsor a corporate wide strategy on knowledge sharing tools. The second discussed the need for leaders to champion consistency between different groups and proactively encourage knowledge sharing. It is argued that the quotes illustrate how organisational leadership is seen by interviewees as a unified phenomenon that has an influence on their perceptions of knowledge sharing.

The last element, based on Scott's (2001, p. 48) institutional theory, is regulative in nature and again interviewees exemplified how this element operates within ITSC and influences their perceptions, as elaborated on below.

Rewards as a regulative element

At a general level, rewards can comprise of 'monetary and nonmonetary rewards provided to employees in exchange for their time, talents, efforts, and results' (WorldatWork, 2007, p. 4). ITSC seems to follow such a diversified model of rewarding employees, including for sharing their knowledge. It encompasses financial bonuses for creating a case study on a particular issue or client as well as symbolic recognitions for contributing knowledge to their knowledge sharing tool in form of an award.

DiMaggio and Powell (2012, p. 11) and Jepperson (2012, p. 145) described rewards and sanctions as rules or controls, which per Scott's (2008a, p. 428) definition is a regulative element. That is, rewards are given in a regulated fashion governed by organisational rules. It is argued that this is likely to be the case when the company pays bonuses (see first quote on next page) and chooses awards for contributing knowledge to their knowledge sharing tool but more of a cultural-cognitive shared understanding when rewards are informal acknowledgements (see second quote on next page).

In terms of financial rewards, a US interviewee stated that she shares her knowledge to help the organisation to be more successful, which in turn influences bonus payments.

I share knowledge because I think it's the best for the company. Something that everyone can take advantage of. And at the end of the day, I mean, we're a revenue-generating company and all. Everybody wants to participate in bonuses and the growth of the company, so I look at a bigger picture as well. US-05

As the above quote exemplifies, sharing ones knowledge can have an indirect effect on monetary compensation for individuals. This was in line with a UK colleague who stated that:

All of us work under some kind of a bonus scheme, though they differ in some respects, but essentially, there's a decent-sized element of that bonus scheme that's going to be based on the financial success of the company. So we've kind of all gotten interested in making sure that the sales guys sell loads of stuff. UK-01

Another group of interviewees from China and the US however were less concerned about receiving financial compensation from the company for sharing their knowledge. Instead they were seeking a 'thanks sir' (US-02) or as the Chinese colleague described it:

Just the spirit of bonus maybe. Just a warm thanks to you. Because the division of the company must support each other. Just giving material reward is not practical. Is not practical because it is difficult to assess the knowledge you're sharing, assess the value, maybe to assess the correctness. CN-05

This spirit of bonus, presented via a warm 'thank you', gives the energy to keep sharing knowledge, according to the interviewee. This suggests that nonmonetary rewards provided by the overall organisation can influence individual perceptions of knowledge sharing.

The discussion up to this point has concentrated on groups and the organisation being types of institutions or social structures that, as an aggregated entity, can shape individual perceptions. The last sub-section that follows elaborates on social structures stemming from the broader environment that again, as a whole, can shape individual perceptions of knowledge sharing. These are presented in an identical fashion to the previous section in that cultural-cognitive, then normative and finally regulative influences are exemplified.

4.3.1.3 Culture, associations and governments as types of institutions

Regional and national cultures as cultural-cognitive elements

Cultural-cognitive influences on knowledge sharing are less obvious as these represent 'shared conceptions that constitute the nature of social reality and the frames through which meaning is made' and indicate what individuals typically do (W. R. Scott, 2008b, p. 57). Despite them being less obvious, interviewees across the four country branches indicated how cultural-cognitive elements as a whole influence their perceptions of knowledge sharing.

Two Chinese and one Dutch colleague concentrated on nuances in communication styles within their countries. In analysing communication styles, many aspects can be considered, including the degree of directness. This refers to how direct, explicit and verbally expressive one communicates the message (Hofer, Hofer, Eroglu, & Waller, 2011, p. 152). The first Chinese interviewee felt that the degree of directness differs between people living in Beijing and Shanghai. While individuals in Beijing have a communication style that is very direct, people in Shanghai prefer to speak more indirectly.

In ITSC, there is some difference between Beijing people and Shanghai people. People live in different city. People doing things in different way even on communication method, it's different for two city people. Like in Beijing, people used to express the things very direct. But in Shanghai, they don't want to hurt you by words. So they try to communicate with indirect way with you and you have to say, "What, what's this guys talking about?" So that's the difference for the culture within China. CN-01

Similarly, a Dutch interviewee noticed communication distinctions in different parts of the Netherlands where the west is more direct than the south or east.

I think in the Netherlands, people are quite direct. There's also a bit of a difference between the west part of the country like Amsterdam, Rotterdam, the big cities [a]nd the south or the more eastern parts; they are a bit more modest. But in general, Dutch are, I think, fairly direct in their asking and in giving their opinions. I think when you realise that people are very direct and, when you realise that you need to understand a language I think those are the most important ingredients to be able to share. NL-06

In both instances however, interviewees may only have indirectly indicated that the degree of directness influences knowledge sharing. This was made more explicit by another Chinese employee who stated that people from different regions have varying styles on knowledge sharing and communication.

In China such as many south, north, east and west and people also have different style to talking about communication or share knowledge or interesting topics, it's difference.

Question: Which way different when you say communication style?

Answer: Maybe some, maybe some people are more direct, some people are more indirect. CN-03

By combining the quotes above, one could argue that the styles on knowledge sharing include the degree of directness. One potential reason behind varying the directness is exemplified by the first quote and centres on offending the other person. This suggests that knowledge should be shared in slightly different ways to reduce hurting the other person's feelings.

The issue of being offensive in the view of the other person was also brought up by a US interviewee. She noted that Americans do not seem to welcome advice from others that they have not asked for. As the interviewee grew up in another country and culture, she felt it difficult to adjust to the common belief held amongst Americans not to give unsolicited advice.

Question: But also when you see someone that might be relevant to the other person, you also then share knowledge?

Answer: Absolutely, which has the risk. Because sometimes, you end up providing unsolicited advice which is the risk of that, but I'm learning how to control that. And it depends on who you're talking to. It depends. So sometimes Americans, for example, are not very comfortable accepting advice that they're not asking for. And so I have to be careful because in my culture, it doesn't really matter. You're part of it. You're given an opinion. And you're going to listen to me and if it's friends or family, by all means, *by all means*, you say absolutely everything that's on your mind. US-03

What transpires from the statement above is that knowledge sharing can be influenced by the shared understanding Americans seem to have in regards to giving advice to others. This might mean that knowledge is withheld in order to avoid offending the other person.

While the American interviewee above focused on uninvited advice, a UK colleague highlighted how the English culture displayed a 'stiff upper lip' and formality. He argued that these unspoken rules can influence communication and knowledge sharing.

So the example you used is somebody from Japan coming here. So I would expect, certainly the management group at my level would be sympathetic to somebody from Japan coming over here and trying to work within our environment and the unspoken rules that we use to communicate and to share information. [...] *(continued on the next page)*

And I think actually, so again using the Japanese example, the Japanese and English are quite close in, culturally. There's a lot of stiff upper lip and quite formal and friendly, but friendly at the same time. UK-01

As the above statement exemplifies, non-emotionality and formality seem to be part of the unspoken rules that are practiced in the UK on an aggregated level. It is argued that these unspoken rules are associated with the cultural-cognitive element as they represent what individuals typically do, rather than what they should or should not to, which is prevalent in the normative element.

Similarly, it is argued that both the degree of knowledge sharing directness and whether to give unsolicited advice to others are shared logics of action and based on shared understanding. Utilising Scott's (2001, p. 52) definition on what constitute cultural-cognitive effects, directness, unsolicited advice, non-emotionality and formality are grouped under the cultural-cognitive element. More importantly, it is argued that all four concepts described by interviewees above illustrate how cultural-cognitive elements are social structures that, as a whole, can influence their perceptions of knowledge sharing. In addition to the less obvious social structures, interviewees in the Chinese, Dutch and US branches exemplified how normative social structures shape their perceptions.

Professional bodies and associations as normative elements

To recall, normative effects 'introduce a prescriptive, evaluative, and obligatory dimension into social life' and outlines what people should or should not do (W. R. Scott, 2008b, p. 54). This short definition was expanded on in an earlier publication of the same author where he associated normative elements with social obligations, binding expectations or morals which can be governed by certifications and accreditation systems (W. R. Scott, 2001, p. 52). Professional bodies, associations or governments are agents who fulfil this role and who can create normative pressures on organisations or individuals (W. R. Scott, 2007).

An example of a professional body is the International Organization for Standardization (ISO). ITSC is certified in ISO9001, which concentrates on various aspects of quality management. According to the ISO (2014), 'ISO 9001:2008 sets out the criteria for a quality management system and is the only standard in the family that can be certified to (although this is not a requirement)'. This quote highlights two aspects. Firstly, that the ISO promotes a certain level of standard and criteria against which organisations are assessed; and secondly, that the standard is voluntary.

It is argued that these two aspects taken together suggest that the ISO is normative in nature as it provides a framework and guidelines on what organisations should do voluntarily, rather than takes coercive action against them (Brunsson & Jacobsson, 2000).

A connection between the ISO as an external normative body and knowledge sharing was made by a Dutch interviewee. He argued that the ISO has an influence on communication as it gives a structure around how knowledge should be shared.

We have an ISO-9001 certification, and so that's quality. And as part of that you need to have all your processes documented. [It's] a voluntary thing. So you don't have to certify yourself.

Question: Do you think it has an impact on knowledge sharing, this ISO?

Answer: Yeah, because it gives you the structure. How to organise certain things [...] it's more of the framework which gives you more the guidance, how to do it and that communication is part of it. NL-04

In addition to the professional body of the ISO discussed above, other interviewees in the Netherlands spoke about a tax framework based on voluntary 'horizontal control'¹³ (NL-02), the Storage Networking Industry Association (NL-03), commercial networking groups (NL-05) or stock auditors (NL-06) all creating standards that can influence knowledge sharing. In addition, a Chinese interviewee argued that the Certified Public Accountant Body sets standards, such as on knowledge sharing (CN-04).

Similarly to a Dutch tax framework based on 'horizontal control', a US colleague working in internal audits emphasised the normative influence of the Institute for Internal Auditors (IIA) on his knowledge sharing.

Comparable to the ISO, the IIA promotes a range of standards but their focus, on part, is on what audit reports should cover. As the quote below exemplifies, these standards provide recommendations as to what format and structure the knowledge gathered during the audit should be shared in audit reports.

There's the Institute for Internal Auditors. There's a lot of best practices that they encourage. And some of those practices, for example the audit report, will say, "Every audit report should contain X, Y, and Z". In other words you should share your knowledge of this audit in a particular fashion so that it meets their guidelines. And so that regulatory body is influencing the way that we present our audit reports. US-04

¹³ Horizontal control is a voluntary framework where tax authorities work with a company to develop accepted tax procedures and processes rather than retrospectively audit them on a yearly basis. NL-02

Returning to Scott's (2008b, p. 54) definition on what he defined normative influences and re-examining the two detailed quotes from the Dutch and the US interviewee suggest that both the ISO and IIA can be regarded as professional bodies that create standards on knowledge sharing for individuals as well as organisations. In contrast to regulations that can be enforced, professional bodies create standards that are not coercive. Considering that the Dutch interviewee stated that the ISO is 'a voluntary thing' and the US colleague argued that the IIA encourage best practice, the two concepts are classified as normative social structures that, as a united entity, can influence individual perceptions of knowledge sharing. Furthermore to normative elements, interviewees across all four country branches described how regulative effects can shape their perceptions.

Government regulations as a regulative element

According to Scott, the regulative element 'stress[es] rule-setting, monitoring, and sanctioning activities' (2008a, p. 428). One type of sanctioning activity was provided by two Chinese interviewees who stated that government-based censorships can place restrictions on speech.

Question: Do you think that regulating bodies such as local and national governments have an impact on your knowledge sharing behaviour?

Answer: Well, if I think of it, probably yes some sort of impact in the knowledge sharing. Well Hong Kong I think is relatively open, we don't have a lot of this censorship or this sort of restriction on audio and all. You know control on speech, all that. Hong Kong is pretty open on that. But I think that in some other jurisdiction there will be some regulations what you can share, what you can't. CN-04

Although censorship does not seem to play an important role in Hong Kong, according to the interviewee that was based there, she believes that other provinces might have tighter regulations. This was confirmed by another Chinese interviewee but he argued that government constraints are becoming less and less, including those on knowledge sharing (CN-03).

While the responses from the two Chinese interviewees were focused on freedom of speech, one of the Dutch interviewees working in the Logistics department argued that an entity, such as ITSC, has to comply with a broad range of regulations, including environmental and financial rules. Although not all staff have to know about all the regulations, employees need to be made aware of regulations that affect them and which they need to follow.

All regulations which you need to follow cause some knowledge sharing, I think. The law dictates certain things and if you want that everybody here in this facility follows the laws then you can either sit back and hope that they all know it or you need to tell them about it. And that's very broad area because you have so many laws. Environmental, you have financial rules and maybe you don't have to tell the people in the warehouse about the financial rules but some other people need to know. [...] So you need to teach the people by law. You need to follow it. So you need to tell the people what they should do. Because at the end of the day, as an entity you need to comply. And you can only comply when the people who are within that entity are aware and so that means knowledge sharing. NL-04

As the foregoing quote exemplifies, government regulations need to be communicated to staff, which, in the view of the interviewee, requires knowledge sharing.

The above discussions suggest that interviewees could relate to regulative effects that, as a whole, influence their knowledge sharing. Their statements seem to centre on rules and sanctioning activities, such as environmental and financial rules and censorship. As this connects to Scott's definition of regulative social structures, the statements are grouped under the regulative category.

4.3.1.4 Summary

The first key category of influence that is fundamentally different in nature to the other three focuses on influences that act as a united entity on individual perceptions of knowledge sharing. These collective influences are conceptualised in this thesis as institutions or social structures that comprise in different degrees of 'cultural-cognitive, normative and regulative elements that, together with associated activities and resources, provide stability and meaning to social life' (W. R. Scott, 2001, p. 48). Findings from the interviews indicate that institutions can exist at a group, organisational or environmental level and can contain one or more cultural-cognitive, normative and regulative elements.

From a group perspective, interviewees from the Chinese and US branches stated that the overall group environment can shape their perceptions as a common language, sense and behaviour provides a shared understanding and prescriptive dimension within their team.

From an organisational point of view, interviewees based in all four country branches exemplified how cultural-cognitive, normative or regulative elements influence their knowledge sharing perceptions.

This included the organisational culture and its openness, leadership and how a lack of a corporate wide knowledge sharing strategy and encouragement can influence their knowledge sharing, and rewards. In regards to the latter, interviewees had varying opinions as to whether financial or non-financial rewards shape their perceptions. One UK and US interviewee felt that financial rewards shape their knowledge sharing, while another US and Chinese colleagues argued that non-financial rewards encourage their sharing.

In addition to organisational effects, interviewees in all four country branches illustrated how social structures stemming from the larger environment influence their perceptions. Regional and national cultures and their shared communication style, non-emotionality and formality represent cultural-cognitive elements as they provide a shared understanding within that environment. Professional bodies and associations such as the ISO and Certified Public Accountant Body have a normative effect as they certify individuals and organisations to certain voluntary standards. Local and national governments with their potential censorship and environmental and financial rules add a regulative dimension to social life by carrying out monitoring and sanctioning activities.

Reviewing the discussion so far suggests that some of the influences are more dominant in some of the country branches while others have been raised by interviewees across all four branches. In order to illustrate and explore if the first emerging key category of influence is susceptible to contextual differences, the underlying categories and concepts are presented in Table 4.2 on the next page, alongside with which concepts have been discussed in which country branches.

Table 4.2

Interview findings for the first key category of influence - institution

	Category	Concept	CN	NL	UK	US	
Groups	Group environment	Common language	Yes	-	-	-	
		Common sense	Yes	-	-	-	
		Common behaviour	-	-	-	Yes	
Organisation	Organisational culture	Openness	Yes	Yes	Yes	Yes	
		Leadership	Corporate wide strategy	-	Yes	Yes	Yes
	Encouragement		Yes	Yes	Yes	Yes	
	Rewards	Financial	-	-	Yes	?	
		Non-financial	Yes	-	-	Yes	
Environment	Regional and national cultures	Communication style	Yes	Yes	-	-	
		Unsolicited advice	-	-	-	Yes	
		Non-emotionality	-	-	Yes	-	
		Formality	-	-	Yes	-	
	Professional bodies/ associations	ISO	-	Yes	-	-	
		Horizontal control implemented by the Dutch tax authorities	-	Yes	-	-	
		Storage Networking Industry Association	-	Yes	-	-	
		Stock exchange	-	Yes	-	-	
		Certified Public Accountant Body	Yes	-	-	-	
		IIA	-	-	-	Yes	
		Government regulations	Censorship	Yes	-	-	-
			Environmental rules	-	Yes	-	-
	Financial rules		-	Yes	-	-	

Note. CN = China, NL = the Netherlands. Yes = interviewees stated that this concept influences their knowledge sharing. Question mark (?) = interviewees within that branch had differing opinions as to whether that concept influences their sharing. Dash (-) = the concept under analysis did not emerge from the discussions with the interviewees.

Studying Table 4.2 above indicates that interviewees located across all four country branches have described institutions that can shape their perceptions of knowledge sharing. Although interviewees in some branches provided a more diversified set of concepts than others, the findings based on the 24 interviews suggest that there are multiple social structures in each country branch that

shape interviewees' perceptions. Based on that, the first key category of influence overall is not deemed to be susceptible to contextual differences.

In summary, the argument that is put forward here is that groups, organisations and social structures stemming from the larger environment are of similar nature as they represent communities or groups of people that act as a single institution by providing uniform messages to the outside. However as Vanderburg (2000, p. 139) pointed out, an entity can behave as an united entity towards the outside world while inside it comprises different elements that are interrelated and changes initiated by one element may affect others or the entity itself. Thus an institution should not be seen as static but rather something that provides a united face towards the outside world.

Having elaborated on the first key category of influence, the following section concentrates on relations between individuals and how this can shape their perceptions of knowledge sharing.

4.3.2 Relations as second key category of influence

In the previous section it is argued that groups, organisations and the broader environment are similar in nature as they are institutions or social structures that act as a united whole, provide uniform messages to the outside world and on an aggregated level shape individual perceptions of knowledge sharing.

In contrast to institutions, relations (as a second key category of influence) focus on the relationship between the sharer and other-sharer¹⁴ and how the dyad¹⁵ influences sharing. Interviewees located across all four country branches raised dyadic effects that shape their perceptions. They are grouped into three categories – physical, cultural and social, each discussed in turn below.

4.3.2.1 Physical co-location

ITSC, as outlined previously, is a global company with offices in more than 80 countries. Yet not only are the offices distributed, some of the groups are also dispersed among several countries and in some instances even continents. One Dutch interviewee stated that the Finance group he is part of operates in two different countries and that the majority of his colleagues are based in Poland. In his view, this has implications for his knowledge sharing.

¹⁴ See Appendix F for further details. In short, the two words are utilised to indicate active participation and equal power balance of two or more individuals in the knowledge sharing act.

¹⁵ A dyad refers to a 'group of two' (OED Online, 2014).

Question: Do you think that the way your group operates and works with each other and communicates has an impact on knowledge-sharing?

Answer: Yeah, absolutely. Because one of the person is working in another office. So that is already a difficult situation because that other offices has also other responsibilities. Here, it's really a European distribution centre and the other offices is a sales organisation. So, this is already impacting, of course, the way we communicate or so.

Question: Is there anything else about your group and knowledge sharing?

Answer: It also has to do with the fact that you're not always in the same, it's a location thing. That's what I think. Yeah, that's where the difficulty is. NL-02

This opinion was shared by other interviewees located in China, the UK and the US. However, another Dutch colleague in the Finance department argued that regular contact with colleagues is more important than being co-located. When asking whether sitting in the same office would influence his knowledge sharing, his response was:

No, no. I think it's more that people that you are in contact with, and if that is in contact in the same room, or in contact with via the internet, or via the phone, that doesn't make much difference, but sharing a regular contact makes you feel more at home with certain persons and makes it easier to communicate. [...] Internet and telephone offer enough space to share thoughts and information rapidly and frequently. NL-06

As the above quote exemplifies, knowledge sharing, according to the second Dutch colleague, is not related to working in the same office. Thus not all interviewees agreed that physical co-location influences their perceptions of knowledge sharing.

4.3.2.2 Cultural relations

Similarly, interviewees based in different country branches had varying perceptions as to whether cultural background of the sharer and other-sharer has an influence on their sharing.

When asking interviewee UK-07 if culture, such as the other person's cultural background, influences his sharing, he answered 'I'm trying to think of a situation where it would. I'm struggling..... No, no, I can't'.

A colleague also based in the UK branch on the other hand described a group of countries where he felt that cultural background influenced the depth of knowledge they requested in comparison to others. He argued that Germanic

countries would seek detailed knowledge while countries such as Italy would be satisfied with a simple confirmation that something can be achieved.

‘And if they want to find something out, it’s certainly true that Germanic countries would want to understand detail. There’s no good telling you when they tell you, when in the end you can do this. All right, how do I do this? [...] And that’s true with management as well because the managers like to think of themselves as technicians or they have a technical frame of mind. Oh you can do that or how do you do that? Well, what command do you use to do that? And which secrets do you do? Well, if I do this, why doesn’t that work? Well. [...]. But if you’re going to speak to the Italians for example, yeah you can do that. That will do, what’s your next subject?’ UK-03

This is in line with interviewee UK-06 who stated that he may slightly change the way he shares certain aspects of knowledge for people from different geographies and culture. In addition to cultural differences and physical distances interviewees discussed whether social relations can influence knowledge sharing, as detailed beneath.

4.3.2.3 Social relations

Under the category of social relations, prior studies have investigated a range of concepts, such as business ties, which refer to common business tasks and shared goals (Marouf, 2007, pp. 112, 121) and structural relationships, which are the sharer’s and other-sharer’s locus in an organisational hierarchy (Cyr & Choo, 2010, pp. 825, 843). The results from these studies suggest that social relations between two sharers have an influence on knowledge sharing. The findings emerging from the interview data in this study however only partially support the notion that social relations have an influence on knowledge sharing.

On the one hand, interviewees located in China, the Netherlands and the US argued that social familiarity between sharer and other-sharer has a diverse set of benefits, including on knowledge sharing. For instance, social familiarity helps understand why the other person reacts like they react (NL-05) or makes ‘communication a bit less formal and a bit easier’ (NL-06).

Social familiarity can be established by knowing the other-sharer for longer periods of time, as one of the Dutch interviewees stated. In his case, he worked with one of his colleagues in another organisation before joining ITSC. This resulted in:

And so it’s easier then. You don’t need a lot of words to understand each other.

Question: Do you think that has an impact on knowledge sharing?

Answer: Yes. Yes. Knowing each other and having some sort of relation. You know somebody. At a relation it's easy because then you don't have to; you know what somebody knows or how he receives information. Some persons need more words than on others. So that makes it easier.
NL-01

As the above statement suggests, being socially familiar with the other-sharer helps to understand what knowledge should be shared and in which method they prefer to receive it.

On the other hand, when asking another Dutch interviewee on whether he shares the same amount of knowledge with every colleague or whether he would differentiate, he replied that he doesn't distinguish between other-sharers he is socially familiar with or not so familiar with.

Whenever somebody needs certain information, I don't care if it's someone that I know very well or that I know not so well. That's equal to me. NL-06

The above illustrates that social relations between the sharer and other-sharer can influence perceptions of knowledge sharing but that this is debatable, at least between interviewees located in the Dutch branch.

Another concept that attracted different viewpoints is 'socialisation outside work'. In this case interviewees within each of the four country branches had different opinions on whether this influences their work-related knowledge sharing. Four interviewees concurred that it has an influence, an equal number of colleagues disagreed and eight interviewees were unsure or stated that it is dependent on other aspects.

One of the interviewees that agreed that socialisation has an influence was a UK interviewee, who stated that it creates an environment where knowledge can be shared informally.

Question: And do you think that [socialisation outside work] has an impact also on knowledge sharing?

Answer: I think so, yes. I think it creates a lot of informality and you are therefore having conversations through which knowledge rather than purposeful questions and answers. UK-02

As the above quote exemplifies, socialisation provides an informal background where knowledge is shared through conversations, rather than being prompted by specific questions.

Then again, a US colleague argued that socialisation outside work enhances the relationship with the other-sharer, but it does not influence the amount of knowledge she would share with colleagues she sees outside work versus staff members she doesn't.

Question: And do you think that [socialisation outside work] has an impact also on knowledge sharing?

Answer: I mean I don't think it does. I think it provides that deeper relationship. Same with your customers and partners. Just because you go out with them doesn't mean you're not going to share knowledge with them if you sit next to them at work at the same time. The relationship improves so we might talk about other things but in regards to knowledge, I would share the same information that I would share with someone who doesn't go out with me versus someone who does. US-05

In a similar vein, other interviewees maintained that they focus mostly on 'personal stuff' when socialising outside work and not really on the company itself (CN-02). A Dutch interviewee said that they gossip and that he doesn't see that as knowledge sharing (NL-02).

The third group of interviewees observed that work-related knowledge may be shared when socialising outside work but that it depends on the situation. One UK interviewee described it as follows.

You know, when we socialise, if I'm in the city office and I go out for a beer after work, half the conversation is about work and half is not. Then half of the conversation that's about work is probably sharing the experiences and asking questions, answering questions that otherwise we wouldn't get to do. UK-01

As the above statement exemplifies, should work-related knowledge be shared outside the office, it provides an opportunity to share experiences and respond to questions that couldn't be answered during working hours. Another UK colleague argued that socialising helps to feel 'relaxed and comfortable with each other' and that this in turn may increase knowledge sharing (UK-07).

That is, there is a possibility of work-related knowledge sharing to take place outside the office and that this can have an indirect influence on knowledge sharing.

4.3.2.4 Summary

The second key category of influence that is fundamentally different in nature to the other three concentrates on relations between the sharer and other-sharer and how the dyad can shape individual perceptions of knowledge sharing.

Findings emerging from the interview data indicate that there are three types of relations, namely physical, cultural and social. Physical co-location refers to how dispersed individuals within a group are while cultural relations centre on the cultural divergence between the sharer and other-sharer. Social relations encompass both familiarity between the sharers and the degree of socialisation outside work.

Although interviewees across all four country branches discussed different aspects of social relations, the data presented above indicate the same amount of variability as consensus among interviewees as to the categories and concepts associated with the key category. This is illustrated when summarising the findings in the table below.

Table 4.3

Interview findings for the second key category of influence - relations

Category	Concept	CN	NL	UK	US
Physical co-location	Degree of staff dispersity	Yes	?	Yes	Yes
Cultural relations	Cultural distinction	Yes	No	?	Yes
Social relations	Social familiarity with other-sharer	Yes	?	-	Yes
	Socialisation outside work	?	?	?	?

Note. CN = China, NL = the Netherlands. Yes = interviewees stated that this concept influences their knowledge sharing. Question mark (?) = interviewees within that country had differing opinions as to whether that concept influences their knowledge sharing. No = interviewees stated that this concept does not influence their knowledge sharing. Dash (-) = the concept under analysis did not emerge from the discussions with the interviewees.

Examining Table 4.3 above suggests that the relations key category more strongly influences interviewees located in the Chinese and US branches as they discussed three out of four concepts that emerged from the data. In the UK branch, interviewees acknowledged that physical co-location has an influence but are divided as to whether cultural distinction and socialisation outside work shape their perceptions of knowledge sharing. Dutch interviewees had different views on three out of four concepts and disagreed that cultural distinction has an influence on their perceptions.

Although Miles and Huberman (1994, p. 253) cautioned the overuse of numbers in qualitative research, they acknowledged that quantitative data can be helpful in establishing overall trends in a qualitative study. This guideline is applied in this instance where Table 4.3 indicates that there is more support towards relations

being a key category of influence in the Chinese and US branches compared to the Dutch and UK branches where there is more variability than consensus amongst the interviewees. Taken together this suggests that the relations key category is susceptible to contextual differences.

Having discussed the second key category of influence, the next section focuses on the sharer.

4.3.3 The sharer as third key category of influence

In Section 4.3.1 groups, organisations and social structures stemming from the larger environment are conceptualised as communities or groups of people that act as a single institution by providing uniform messages to the outside. The previous section elaborates on the second key category of influence, called relations, and concentrates on dyadic relationships, i.e. effects related to relationships between the sharer and other-sharer that influence the sharer's perceptions. It is argued that both institutions and relations are fundamentally different in nature as the former explores collective effects while the latter investigates influences between the sharer and other-sharer.

The third key category of influence is again different in nature as the focal point is on influences concerning the sharer itself. These influences are grouped into attitudes, personality characteristics and demographic characteristics. Yet when analysing the data, interviewees in some instances discussed their own attitudes or characteristics towards knowledge sharing, while in other cases it was the attitudes or characteristics of the other-sharer that shaped their perceptions of sharing. In order to better distinguish these observations, the sharer key category first focuses on attitudes and characteristics of the sharer and then on attitudes and characteristics of the other-sharer.

4.3.3.1 Sharer attitudes

At first it might seem counterintuitive to discuss attitudes and characteristics of the sharer when the focus is on what categories shape individual perceptions of knowledge sharing. That is, how can an individual influence him- or herself to share knowledge? The partial answer to this lies in psychology and what transpires from the interviewees is that individuals' attitudes can influence their knowledge sharing. Interviewee US-03 for example argued that 'attitude has an influence on how I behave or how I react'. According to the theory of planned

behaviour, which has been applied to knowledge sharing¹⁶, an attitude ‘refers to the degree to which a person has a favorable or unfavorable evaluation or appraisal of the behavior in question’ (Ajzen, 1991, p. 188). According to Hergenrather, Haase, and Rhodes (2013, p. 20) this means that individuals have behavioural beliefs about the likely outcome of the behaviour and evaluate the value of each outcome. The majority of interviewees provided insights into what they thought would be the likely outcome or value of sharing their knowledge. This included ensuring organisational continuity, promoting their department, helping colleagues learn or modifying the communication for best possible outcomes. Each of these concepts is elaborated on beneath.

As stated previously, one of the outcomes interviewees were hoping for when sharing their knowledge is that it would ensure organisational continuity. Two interviewees from the Dutch branch and one from the UK branch shared the concern that if something happened to one person, a knowledge gap would be created that impacts the organisation. So despite ITSC being a large sized organisation, some of the roles individuals perform and knowledge they possess seem unique. This was exemplified by a US interviewee who stated that he was responsible for creating technical documents and training for a particular product while his colleagues were dedicated to other products. With the current organisational structure and separation of roles, this led to specialised knowledge that was not readily shared with other colleagues (US-02). This viewpoint was also shared by one of the Dutch interviewees.

I mean it’s also the danger of not sharing any knowledge because you create islands, and islands work on their own. And if something happens to that particular person and you come to the conclusion, “Oh, he was the only one who had that knowledge. Oh what are we going to do now?” For example. For the continuity, it’s very important to do knowledge sharing.
NL-02

Another Dutch colleague added to the above statement and said that the person in question might suddenly become ill, for example. In other cases the absence is scheduled and predicable, such as annual leave.

I think it is important in any job to share knowledge because nobody really works on his own. And as soon as you leave for a vacation, or are ill for a few days, then it’s important that the work goes on. For the company and for yourself. NL-06

¹⁶ See for example Bock et al. (2005), Chennamaneni (2006) and Katono (2011).

Regardless of the cause of non-attendance, work within the organisation needs to continue. One option to alleviate the issue of knowledge experts not being at work is to train others and share knowledge with others in the group (CN-05). This way, the organisation is not dependent on one person, as a UK interviewee with a manager's role stated below.

I look at all the people in my group as people in that position; I'm not doing it with an ideal deadline when I'm going to pass on my responsibilities or anything like that, but if you're a good manager, you strive to encourage good relations within your group and deliver to results but at the same time create an environment where, should anything happen to anyone, the business is sustainable and it, we will survive. So, nothing depends on one person or one process or one skill and the same applies to me. So, I am very open in sharing my views and experiences and I'm very open in sharing my opinions and thoughts in an educational coaching sort of way. And that's what I do all the time. I have not been asked to do this to a specific person with a view to passing something on to them. UK-02

What transpires from the three quotes above is that the interviewees had an interest in the on-going success of the organisation. In addition, they indicated that knowledge sharing is a contributing factor to ensure organisational continuity. Taken together, this suggests that they have a positive attitude towards knowledge sharing with the aim to create sustainability and minimise knowledge gaps. It is argued that this relates to the attitude that an individual has towards the organisation and that that attitude influences knowledge sharing.

However, interviewees not only described attitudes towards the organisation, but also attitudes that related to their group or team. For instance, four interviewees stated that they share their knowledge in order to promote their department.

One of them focused on the Academy, an education department within ITSC, whose goal is to provide training to internal staff, providers and customers. Although education has been a key aspect for the organisation, the education department was restructured and renamed into the Academy approximately eight years ago. As part of the restructure, new groups were formed and individuals relocated. This created some uncertainty and people from other departments were reluctant to engage with the new department and did not appreciate its value in the organisation (US-02). In order to overcome the hesitation and potential misconceptions, one interviewee has been active to share his knowledge in order to promote his department, the Academy.

I don't have any personal hesitations in being open and sharing because the Academy, we are constantly trying to promote ourselves and constantly trying to bring up the value-add we have to offer. And constantly trying to demonstrate that our offerings aren't stagnant. They grow, they are in response to real learning needs for real know-how; to establish real knowledge in business and I think we have done amazingly well globally and regionally in the last few years to get to that level. So, more and more people reach out to us now back. They still treat us like we are a kid on the block but more and more, they are beginning to realise that this kid is an adolescent now and he has to be reckoned with.
UK-02

This was similar to another UK colleague who felt that employees outside the group didn't necessarily appreciate the output and contribution of the group. According to that interviewee, one of the possible reasons why it hasn't been valued is that the group has not shared their added value in an appropriate way.

That was another conversation we had yesterday; about certain people might not necessarily perceive some of the things we do and that's because we perhaps haven't shared knowledge in the correct way or represented ourselves in a correct way. So we need to understand that there's a better way. I need to think about how we can share the knowledge and the experience and the activity we're doing so that people can actually sort of appreciate what we've done. [...]

Question: Can you tell me what encourages you to share knowledge?

Answer: One of the things that encourages me is how we are perceived by the people. So, it's group perception. UK-06

Therefore, one of the goals for the interviewee was to share knowledge more appropriately so that staff outside the group could appreciate its value. This exemplifies that one of his objectives to share knowledge is to promote the group. As with the organisational example, it is argued that this attitude towards promoting the group can influence knowledge sharing.

In addition to attitudes towards the organisation and group, the majority of interviewees located across all four country branches emphasised their attitude towards helping colleagues learn. For example, a US interviewee argued that he shared his knowledge to help others advance in their career.

Question: Can you tell me what encourages you to share knowledge?

Answer: The biggest thing, I think, is the benefit the people or the receiver will get from the knowledge sharing. So especially, like a coaching or a mentoring scenario. I get encouraged when I see more junior level people take in the information, apply it, leverage it to better their career. So, I think it's probably the best benefit. *(continued on the next page)*

So, I think a lot of people are successful based on the people around them. And so if I can help them be more successful in their career I think that's something that encourages me. US-01

According to the statement above, the interviewee gets encouraged to see that the knowledge he shared is actually absorbed and applied and that this in turn helps other-sharers succeed in their career. Similarly another US colleague stated that her goal is that the other-sharer becomes a broader perspective on issues or processes. Again, it is about helping the other-sharer to learn and grow.

My objective is that it's going to help them. My objective is that they're going to learn something new. My objective is that I'm going to strike a chord like they're going to say, "You know what, that's an interesting point. I'm going to think about it." That I'm going to provide additional insight to a process and so she's brainstorming. She wants people to give an opinion. She wants to hear different reasons or different possibilities. You know, I mean, "Hey, you know what? I figured it out!"; "Let me tell you about it". "Let me share it with you so you're not going to get hurt as I did. Let me share this with you." US-03

So in addition to enhancing an other-sharer's perspective, the above interviewee also would like to prevent others to make the same mistakes as she did. In that sense, she wants to help others learn without experiencing it first-hand. This suggests that the interviewee has a positive attitude towards helping others learn which in turn influences her knowledge sharing.

A further concept that is grouped under the sharer attitude category centres on the modification of communication for best possible outcomes. A Chinese interviewee argued that she is sensitive to the target audience when sharing her knowledge with them.

Question: Are there any instances in which you would be less willing to share your knowledge?

Answer: If I am capable or I actually have an understanding of the subject, I am very happy to share. Of course, I will also judge the sensitivity in terms of the target audience I'm talking to. You've just asked a lot of question about the different audiences who have a different communication and even the style and even the content will be different. In being sensitive to the difference of your target audience, you will be able to communicate more effectively with them. Especially when knowing some of the context maybe sensitive to some cultures and you manage the communication carefully which will avoid any misunderstanding and misperception. And also when communicating with audiences if you understand their thought process and style, you will be able to use the most appropriate communication context, Channels to conduct the communication in driving the best outcome. CN-02

By being sensitive, the interviewee stated, one can communicate more effectively, avoid misunderstandings or misperceptions and thus work towards the best possible outcome. These can be considered likely outcomes from having a behaviour that is sensitive to the target audience. This combination of sensitivity and anticipated outcomes corresponds to the definition of an attitude introduced at the start of this section. Due to this, this concept is classified under the sharer attitude category.

So far four concepts are grouped under the sharer attitude category - organisational continuity, promotion of department, helping colleagues learn and modification of communication for best possible outcomes. Besides these, some interviewees felt that enhancing their recognition, being knowledgeable in an area, reciprocating knowledge, perceiving knowledge as power and being inclined towards the other-sharer can influence their perceptions of knowledge sharing. At the same time, some other interviewees disagreed that these concepts influence their sharing.

In regards to enhancing ones recognition, an interviewee in the UK branch argued that sharing knowledge with others is actually positive, as the knowledge is associated with his name. Thus, the likely outcome or value of sharing his knowledge was perceived to be positive.

It's not just to this organisation, many organisations, there's a feeling that knowledge is power. So, if I've got the knowledge, people have got to come to me. But, that's a very bleak and short-sighted attitude really, because the more you're sharing the knowledge, you're still establishing yourself as someone with the knowledge. The fact that it's being shared, it's got your name on it. More people are potentially aware that you got the knowledge and therefore it's actually a more positive thing than people having a past I think have thought about. UK-07

As the above example indicates, knowledge is shared in order to gain recognition by others for being knowledgeable. This idea also transpires from other interviewees located in China, the Netherlands and the US. According to Guntrip (2011), this need for recognition by others is a psychological attitude individuals possess.

However, another US interviewee disagreed that one shares knowledge to gain recognition. For her it was more important for the whole organisation to be successful.

So now, it's actually being rolled out throughout the Americas for our group. So in those instances, right, I proactively go out and share. Not to give myself credit. But just more of; it's important for all of us to be successful. US-05

Taking the statement at face value it seems, at least with US interviewees, that some seek recognition for sharing their knowledge while others don't. However, as de Vaus (2014, p. 107) indicated, people may provide a 'respectable rather than the true response', which is a phenomenon of social desirability. Whether the last passage above was influenced by this is unclear but may have contributed to the discrepant viewpoints between interviewees.

Another difference between US interviewees focuses on the degree of knowledgeability one has to hold to share knowledge with others. Interviewees in China and the Netherlands agreed with a US colleague who stated that she's very willing to share her knowledge when she knows more than others.

Like twice a month, I have to interact with customers. They come here to the executive briefing centre and I present to them the corporate overview. [...] So it is great because I know a lot about ITSC a lot more than them. Maybe I don't know everything. But I definitely know more than them. And so, it's great to tell them about our tradition with innovation and technology. US-03

When asking another US interviewee if he felt more comfortable sharing knowledge because he was an expert in that area, he replied:

I don't think it really matters for me in terms of if you're an expert or not. It's easier if you're an expert, I think. US-01

What the last quote above suggests is that, according to the interviewee, expertise in an area is not a necessity for sharing his knowledge. This difference to the first interviewee might be the sharer's attitude of needing to be knowledgeable (Bassili, 2008, p. 245).

The third discrepancy between interviewees based in the Dutch and US branches focused on reciprocity. Reciprocity in the sense that the other-sharer in turn shares knowledge with the sharer at some point in the future. As Garfinkle (1999, p. 252) termed it, this describes a 'tit for tat' attitude. Some Chinese, Dutch as well as US interviewees argued that they are encouraged by the fact that the other-sharer reciprocates by sharing their knowledge.

Encourages, I suppose would be if, you know, quid pro quo if I go and ask for something help me and they're responsive and can help me when I need help that would probably be the second. [...] The opposites of that, if I don't feel that what I've shared really has any value to that person then perhaps I would not, you know, I would say I'm not going to waste my time helping that person in the future or if perhaps I'd ask them for help some subsequent time and they didn't reciprocate. US-02

At the same time, other interviewees from the Netherlands, the UK and the US stated that reciprocity is not a consideration when sharing their knowledge. A US colleague exemplified this when saying that he did not expect anything in return from staff outside his group. For colleagues within his group he hoped that they would utilise the knowledge he shared with them.

Question: Do you expect anything when you share knowledge with others?

Answer: Typically depends on the scenario. If it's knowledge sharing just based on information requests from the other individual, then typically I don't expect anything back. If it's knowledge sharing within like my group on a project they were working on, well I would expect that they would absorb the knowledge and apply it and I would see it in the outcome of the deliverable they're working on. US-01

Overall it seems that interviewees based in the Chinese branch are seeking reciprocity, the UK colleague didn't and Dutch and American interviewees are divided on this concept.

Knowledge as power was a further attitude brought up by interviewees. This relates to whether individuals feel that their influence is reduced when sharing their knowledge with others. In the previous seven concepts, differences represented their current state of opinion. For instance, some interviewees felt that reciprocity was important, while for others it was not. But regardless of their viewpoint, they argued their position as they saw it at that particular moment. With loss of power, this was somewhat different. One UK and Dutch interviewee stated that they perceived knowledge as power previously but that this has changed.

As a UK colleague said:

I'm sure I went through the stage seeing knowledge is power. You know, I have this knowledge and you can't have it because that then shows that I'm no value to people and if I give this away, I'm not getting anything for it. UK-03

It is argued that although the interviewees' perspectives have changed over time, it influenced their knowledge sharing in the past. This was different to another UK colleague who acknowledged that knowledge can be power but that this was not a factor for him.

I discussed the Samurai principle of not sharing everything because the feeling was that you always had something back in reserve to beat your pupil. I don't subscribe to that, I love the Samurai culture for lots of other attributes [...] but I don't agree with the lack of knowledge sharing. Because ultimately that will hold you back in the dark ages [...]. Well yeah knowledge is power but at the same time that the power of the individual perhaps I've got an ego that doesn't require that. But for me knowledge is more about community and it enables the community to make progress and grow, not just for me and my career and I have to look good in front of various management types. It's more about the community. UK-04

As the statement illustrates, knowledge sharing is about helping and growing the community rather seeing knowledge as power. As the interviewee suggests, this attitude might stem from the lack of egoistic behaviour (see Section 4.3.3.5 for a detailed discussion on egoism).

The last concept that can be clustered under the attitude of the sharer relates to the inclination towards the other-sharer or others (Deniz et al., 2013, p. 170). Interviewees located in the Chinese, Dutch and UK branches argued that they share more knowledge with a person they like than with ones they don't.

I mean, there are people that you like and the people that you don't like. And the people that you like better are most of the time, you share more knowledge with people that you like than people that you don't like because you normally would sort of go around them in such a way; so you sort of exchange information on maybe a need to know or a bare minimum basis. And that's it and then you, you seem okay. You solve it on your own because I couldn't care less, actually. NL-03

Simultaneously, a Chinese sales colleague stated that liking somebody does not have an influence on his knowledge sharing. According to the interviewee, even if one can't get along with a customer one needs to share knowledge in order to attract them.

I have many, many customer. Everyone is different. Sometimes it's easy to get along, sometimes it's very difficult to get along. A customer maybe bad fellow. We needed to no matter what kind of customer. We all in it together, to get along with them. [...] If you want to attract a customer and make the customer have a good feeling to you, you need to share. Maybe you also need to share knowledge. CN-03

Earlier on in the discussion however, the Chinese interviewee stated that inclination had an influence on his knowledge sharing. This could suggest that the context in which the questions were asked may have influenced the interviewee responses.

Up to now the discussion examines sharer attitudes and how they, it is argued, can influence perceptions of knowledge sharing. Support towards this notion is found in the foregoing statements, which range from ensuring organisational continuity, promoting their department, helping colleagues learn or modifying the communication for best possible outcomes. In addition, some interviewees felt that enhancing their recognition, being knowledgeable in an area, receiving knowledge in return from the other-sharer, perceiving knowledge as power and being inclined towards the other-sharer can influence their sharing. As the quotes on the previous page revolve around attitudes, they are grouped under the sharer attitude category. But the interview data not only reveal attitudes a sharer has, but also how personality characteristics can influence perceptions of knowledge sharing. This is the focus of the next section.

4.3.3.2 Sharer personality characteristics

As stated at the beginning of the previous section, including attitudes of the sharer might at first sound counterintuitive when the focus is on what categories influence the sharer. However, as exemplified in this section, interviewees' attitudes can influence their own knowledge sharing. Similarly, a sharer's personality characteristics can influence their sharing and this section illustrates where interviewees spoke about self-confidence and their extraverted style.

Psychology literature provides in-depth descriptions of these two concepts and several authors, such as Melamed (1996, p. 225) or Carducci (2009, p. 336), stated that both self-confidence and extraversion¹⁷ are part of a person's characteristics. The latter is also supported by interviewees who said that extraversion is a personality type (CN-02). Therefore the decision is made to group the two concepts under the category called sharer personality characteristics. Although the term has been used widely in psychology literature, there seems to be a lack of definition on what constitutes a personality characteristic. This issue seems to date back at least to 1984 when Harzem observed that '[u]ntil behavior-analytic

¹⁷ Some authors seem to utilise both the words extraversion and extroversion (e.g. Henry, 2013). According to Leary and Hoyle (2009, p. 41) however, the preferred spelling in psychology is extraversion.

data suggest new categories and new concepts in this area, a personality characteristic may be regarded as a particular cluster of individual differences- or, in explicit behavioral terms, as a cluster of functional relations between (1) a set of variables and (2) the already-established behavior patterns of an individual' (Harzem, 1984, p. 391). Considering that the term still seems ill-defined, Harzem's description is adopted.

As indicated on the previous page, interviewees made references to their established behaviour patterns such as how self-confidence influences their knowledge sharing. For example, a Dutch interviewee argued that one has to be self-confident in order to share knowledge. He further stated that once the sharer shares knowledge, others will reciprocate equally or more. But to start this process, the sharer has to feel confident in sharing his or her knowledge with others.

I think people have to be intelligent and self-confident to be able to share knowledge. You have to understand that if you share, you will get the same back. [...] But if you're self-confident enough about yourself and you have enough self-esteem that you know what you are and you know why you're the person you are, I think you can continue sharing your things, and that will only come double your way. NL-05

A near identical statement was made by an interviewee in the US branch but he made it more explicit that there is a positive relationship between self-confidence and knowledge sharing. The more confident one is, the more willing one is to share knowledge, or vice versa.

I think that with experience it gives you that confidence of whatever material that you'd like to share. So without that confidence, I'm less willing to share anything. Because of either concerns of accuracy or confidence or whatever you want to call it but I think, with age certainly comes confidence, experience in the material in whatever you're talking about, which then gives you that level of confidence to be able to want to talk to it. US-06

So while confidence may influence sharing, confidence in itself can be influenced by experience and age, according to the interviewee's perception.

The fact that self-confidence is not a given or stable variable was also brought up by two colleagues from the Netherlands and the US. Their focus however was that confidence can change with the communication medium. They stated that they felt less confident in sharing knowledge through electronic media such as Facebook and conference calls, compared to sharing with others face to face.

I find it more different because everything goes by conference calls. I mean, I feel more, most confident in sharing knowledge if you, sort [of are] in the same building in the same rooms and sort of can interact in a dynamic manner. If everything has to go in certain structures for conference calls, you miss the dynamics sometimes that are there when you are at the customer side and you are in between the people that you have to work with. NL-03

While the interviewees above discussed how self-confidence can influence their own knowledge sharing, five others emphasised that the sharer's extraverted personality can also influence sharing. A Chinese interviewee summarised it as follows:

I think you know, first of all I'm actually, well I would say I'm an extravert. That is my personal style. I love to share, I'm very open and I'm very vocal. So that's my personal style or personality. CN-02

The quote exemplifies that personality, and more specifically on whether a person is an extravert or introvert, can influence the degree a person shares his or her knowledge with the other-sharer. According to psychology and organisational behaviour literature (see for example Griffin & Moorehead, 2011, p. 68), extraverts are more talkative, sociable 'and open to establishing new relationships'. Furthermore, research has suggested that they are more likely to occupy sales or marketing roles as they are based on personal relationships (Griffin & Moorehead, 2011, p. 68). This was in line with a US interviewee based in the Sales department, who affirmed that she likes to talk.

I think people have different personalities. I come from the sales background so I like to talk. US-05

What transpires from the two quotes above is that the interviewee's extraversion influences their knowledge sharing.

Overall, it is argued that in all five preceding statements the interviewees discussed how their own self-confidence and extraversion influence their knowledge sharing.

Based on references to psychology, self-confidence and extraversion are grouped under the sharer personality characteristics category. The third and final category emerging from the data relates to demographic characteristics of the sharer, discussed next.

4.3.3.3 Sharer demographic characteristics

Interviewees located across all four country branches stated that age has an influence on their perceptions of knowledge sharing. For instance, a Chinese interviewee argued that with the process of becoming older, one shares different types of knowledge. He suggested that young employees share more specific knowledge or more ground level knowledge, while older employees might share knowledge at the broader level. In his context of being an instructor at ITSC, he stated that younger instructors might focus more on operational skills, such as equipment and services, while more senior teachers tend to be more interested in IT architecture (CN-05).

A Dutch colleague said that when he was younger, he might have been more protective about his knowledge to safeguard his position in the organisation but realised later on that knowledge should be shared, not guarded. So again, age in this instance seemed to have an influence on the interviewee's perceptions of knowledge sharing.

There's more than enough work in this whole organisation. That should not be something like your protection, because that's what you see a lot; when people don't want to share knowledge because they want to protect their job.

Question: Have you felt that yourself previously?

Answer: I experienced that many times. Maybe in my younger years so to speak. When you are young, you probably maybe self-defence type of thing in you. But I learned that it's crazy to have that and you should really share it. It brings you so much more than keeping things to your own. NL-02

Further on in the discussion however, he disagreed that age has an influence on knowledge sharing and that it is rather one's personality that is important. As can be seen below, his response to the question on whether age differences have an influence on knowledge sharing was as follows:

No. I think it's also something you need to have it in your character, I think. Your personality with that is very important. NL-02

The response above seems rather different to the previous statement made, that when he was younger he protected his knowledge more than now. Therefore it seems inconclusive on whether the interviewee perceived age influencing knowledge sharing or not.

Another concept that can be grouped under the sharer demographic characteristics category relates to working location (Reynolds & Anderson, 1992, p. 192). ITSC has a diverse set of roles, such as Sales, Field Marketing and Finance. Depending on the role, employees have varying primary working locations. For example, employees in the Sales department are predominantly working on the road, visiting potential and existing clients. Field Marketing staff visit external stakeholders, such as local media or strategic partners including SAP and Microsoft, but also work in the office. Employees in Finance on the other hand are largely based inside the office. In addition, ITSC advocates a flexible working environment which means that staff can also work from home.

A Dutch and two US interviewees argued that their working location can influence their knowledge sharing.

If somebody's based in Frankfurt or Florida or something like that, they kind of off by themselves. They're really not getting that kind of interaction that I get, where I can bump into people and talk to people and find out what's going on, what's new things are happening (and so forth). US-02

When asked, the interviewee stated that this not only relates to finding out information by speaking to colleagues, but also sharing knowledge with others. As the above quote exemplifies, the working location of the sharer in relation to other staff can have an influence on receiving knowledge as well as sharing one's own knowledge.

Another US interviewee that worked in the field previously however argued that it did not affect his knowledge sharing. According to his statement it would however influence the amount of knowledge received.

My background has been in consulting. So I've always worked in the field before coming here. I call field which is basically not in a corporate office. I think for people in the field, it's much harder to obtain information, capture information, be up-to-date on information, where information is, because they're out in client sites and other things. That's always going to be a challenge for people that are on the road or not within a single location, I think.

Question: But does it affect knowledge sharing as well do you think when you're out in the field that you had more trouble to share knowledge back to corporate?

Answer: No, no. I don't think it's none of it's impacted. Sorry, I noted I forgot the question. None of it has really impacted the amount of knowledge sharing that I would do. US-01

Comparing the two quotes on the previous page suggests that in the first instance, the belief is that working location influences knowledge sharing, while in the second it does not. This might have stemmed from the different roles the interviewees have had. Where the former is aggregating information from different departments and thus has been working internally, the latter was working as a consultant in the field.

Being guided by previous research, both the sharer's age and working location are grouped under the demographic characteristics category (Bordens & Horowitz, 2002, p. 101; Reynolds & Anderson, 1992, p. 192).

4.3.3.4 Synopsis

The third key category of influence concentrates on the sharer itself and encompasses attitudes, personality characteristics and demographic characteristics. Yet the data indicate that these three categories can relate to both the sharer initiating a knowledge sharing act as well as the other-sharer that actively participates in the knowledge sharing act. To differentiate between what influences relate to the former and which to the latter, the preceding sub-section focuses on attitudes and characteristics of the sharer. Overall 13 concepts emerged from the findings, as presented in Table 4.4 on the next page.

Table 4.4

Interview findings for the third key category of influence – sharer sub-section

Category	Concept	CN	NL	UK	US
Sharer attitudes	Organisational continuity	Yes	Yes	Yes	-
	Promotion of department	-	Yes	Yes	Yes
	Helping others learn	Yes	Yes	Yes	Yes
	Modification of communication for best possible outcomes	Yes	No	-	-
	Enhancing ones recognition	Yes	Yes	Yes	?
	Knowledgeability in area	Yes	Yes	-	?
	Reciprocity	Yes	?	No	?
	Knowledge as power	No	Yes	?	No
	Inclination towards other-sharer	?	Yes	Yes	-
Sharer personality characteristics	Self-confidence		Yes		Yes
	Extraversion	Yes	Yes		Yes
Sharer demographic characteristics	Age of sharer	Yes	?	Yes	Yes
	Working location	-	Yes	-	?

Note. CN = China, NL = the Netherlands. Yes = interviewees stated that this concept influences their knowledge sharing. Dash (-) = the concept under analysis did not emerge from the discussions with the interviewees. No = interviewees stated that this concept does not influence their knowledge sharing. Question mark (?) = interviewees within that country had differing opinions as to whether that concept influences their knowledge sharing.

Examining Table 4.4 above illustrates that interviewees located across the four country branches identified attitudes, personality and/or demographic characteristics that they felt influenced their perceptions of knowledge sharing. The following sub-section turns the attention towards the other-sharer.

4.3.3.5 Other-sharer attitudes

As outlined at the beginning of Section 4.3.3, while analysing the interview data two distinct sets of influences emerged that relate to individuals. The first centres on the sharer itself sharing knowledge and the second on how the other-sharer influences the sharer's knowledge sharing perceptions. Influences associated with the former are elaborated on in the foregoing sub-section whereas this section concentrates on influences stemming from the other-sharer. For example whether the other-sharer has an open mind has an influence on how much the sharer is willing to share with that person. Similar to above, the influences are

classified into three categories – other-sharer attitudes, other-sharer personality characteristics and other-sharer demographic characteristics. In regards to the other-sharer’s attitudes, one topic discussed by interviewees located across all four country branches revolved around the other-sharer’s interest in listening to the sharer. One Chinese interviewee stated:

I think it’s happened for everybody and not for you. You have to know the attitude of the listener whether he wants to learn your side. Maybe sometime firstly, you want to hear from you. If you deliver some information to him but he’s eager for some other things, then, you better stop talking to him. CN-01

However, if this concept is to be classified as an attitude, the ‘individual's overall evaluation of the consequences or outcomes’ (Hergenrather et al., 2013) needs to be established. Drawing on this definition of attitude, this quote suggests that listening is the behaviour while the consequence would be that the other-sharer learns more from the sharer. This attitude that the other-sharer portrays in turn can have an influence on the sharer’s knowledge sharing, as argued by the Chinese interviewee.

While the above interviewee focused on other-sharer’s interest, another Chinese colleague argued that one aspect that may influence his knowledge sharing is respect towards the sharer.

Question: Are there any instances in which you would be less willing to share knowledge?

Answer: Well sometime it depends on the environment. Sometimes maybe the environment is not good enough and maybe it’s not good place, a good time to share knowledge. I think I will not do that. [...]. Sometimes you also have no good feel to others. [...]. Maybe [this is due to] personality or image or the style of speaking, how to speak with you or maybe you find that other side don’t respect you. Maybe you no need to talk about it with them. CN-03

This provides an example of where knowledge sharing can be reduced if the other-sharer disrespects the sharer. Respect, it is argued, is a concept of a person’s attitude. To reiterate and summarise, an attitude refers to an ‘individual's overall evaluation of the consequences or outcomes of performing the behavior’ (Hergenrather et al., 2013). In this example, the behaviour is seen as respecting the sharer and the outcome that is hoped for is that the sharer shares knowledge with the other-sharer. That is the consequence of being respectful towards the sharer is obtaining knowledge from the other person. This line of reasoning is supported by Koger and Winter (2010, p. 111), who stated that ‘an

attitude is an evaluative belief about something (Eagly & Chaiken, 1998), like respect for your friend [...]' . Considering that the attitude towards respect focuses on the other-sharer, this concept is grouped under the other-sharer attitude category.

The third concept that can be categorised into the other-sharer attitude category is openness of mind. Two US interviewees discussed whether the other-sharer's open mind to listen to the sharer has an influence on the sharer's knowledge sharing. One of them, who was working in the internal audit department, said that if the other-sharer has a foregone conclusion and is less open to what the sharer has to say, then this may negatively influence his knowledge sharing.

[U]nless I perceive that the person is maybe not listening or they have a foregone conclusion, and I sort of can perceive these things when you're having a conversation. And if you realise they're not open to what you're saying, maybe you don't share as much. So I think you make those judgments at that time and place. US-04

What transpires from the quote above is the behaviour of the other-sharer. That is, the behaviour of not having an open mind to what the sharer has to say. However, if this concept is to be classified as an attitude, the 'individual's overall evaluation of the consequences or outcomes' (Hergenrather et al., 2013) needs to be established. One possible explanation of not wanting to listen is that the sharer has knowledge to share that is not appealing to the other-sharer.

In general, audit findings can affect different business leaders in the company, so you have to interact [with] those business leaders first to share with them what you found and then to agree on an action plan based on those findings. [...] So there's definitely a distinction between what is written in the report and what is said verbally. So what makes it in the report is kind of the most palatable version of the events. And what you may have discussed in person might have been, you might have pointed out something a little bit unappealing or something that maybe doesn't make them look good, but you can phrase it in a way in the audit report that it doesn't sound so bad. US-04

Juxtaposing the definition of attitude by Hergenrather et al. (2013) with the above statement suggests that the other-sharer evaluates the outcome of hearing unpleasant results by listening to the sharer. So in order to avoid these negative news, he or she may have a less open mind to listen to the sharer. Although the sharer might not be aware of the line of reasoning of the other-sharer, the sharer can identify the attitude the other-sharer has towards listening. As the interviewee pointed out, this in turn may influence his knowledge sharing.

For another US interviewee on the other hand, the other-sharer's attitude towards having an open mind to listen was dependent on whether the person directly reports to the sharer. If the other-sharer is outside the supervision of the sharer however, openness of mind might influence knowledge sharing.

If it's one of my reports I'll share everything. Regardless if they are open or close. I'll share everything that I have to share. If it's more personal, then that person is not opening up, I don't either. I'll probably try, but if I see that is not well received then, "Okay, that's it." US-03

As the above statement indicates, the interviewee would continue to share all her knowledge with the direct report, even if that person is not open to listen to her. This then seems to be different to the statement made by the first US interviewee. One of the possible explanations could be that the first US colleague was an individual contributor, while the second interviewee was a senior director and responsible for colleagues in multiple countries. The higher position and responsibility might bring with it a requirement to share knowledge within her group, regardless of whether members want to pay attention. Purdy and Borisoff (1997, p. 338) referred to the ability to listen and being open for what others have to say as an attitude one possesses. So in line with their classification, openness of mind is grouped under the other-sharer attitude category.

Reviewing the preceding statements suggests that interviewees identified concepts that relate to the other-sharer and that can influence their perceptions of knowledge sharing. These consisted of the other-sharer's interest, respect towards the sharer and openness of mind. It is argued that the commonality between the quotes is that they concern an attitude of the other-sharer and hence are allocated to the other-sharer attitude category. In addition to attitudinal concepts, interviewees debated three personality characteristics of the other-sharer, which is the focus of the following section.

4.3.3.6 Other-sharer personality characteristics

Personality characteristics can be defined as established behaviour patterns (see Section 4.3.3.2) and three interviewees, one located in the Chinese, UK and US branches respectively, brought up personality characteristics of the other-sharer and how they can influence their knowledge sharing.

One of the characteristics focused on value systems. According to a Chinese interviewee the values an other-sharer holds can have an influence on his knowledge sharing. He argued that he would modify the mode in which he shared

knowledge based on the other-sharer's values in order to obtain a better outcome.

From most of the people that I deal with, knowledge in this current generation they are quite open already. But again, some of the cultural difference, because of the background maybe, or because the value system is different, I would say that I myself will always like be sensitive to reaction and you have to be ready to adjust the mode that you want to share the knowledge with them in order to give it the best outcome for the better outcome, I would say. CN-04

Bromley (2001, p. 329) stated that values or value systems form part of an individual's personality characteristics in the field of psychology and in line with this conceptualisation, the above quote is added to the other-sharer personality characteristics category.

But an individual's personality characteristics not only consist of values but also established behaviour patterns such as egoism. According to De Vries, De Vries, De Hoogh, and Feij (2009, pp. 635-636), '[e]goism is a personality trait that is associated with self-enriching and self-centred behaviours'. This idea of self-enriching also emerged in the discussion with one UK interviewee.

I think it's more down to what we discussed about individuals and egos. I think if you have an ego in an environment it might on email or on a conference call or whatever, you may be more conscious about how you relate certain things because you know that that person has a tendency to pick up on that or use it for their own purposes or use it against you or whatever the dynamic is that goes on. So, you are more cautious when you have those big egos around. UK-04

As the statement above exemplifies, where an egoist is part of a knowledge sharing activity, be it via email or conference call, the sharer is more careful on how he or she shares knowledge. As stated above, more care is taken to ensure that the knowledge shared is not used for the other-sharer's self-enrichment or used against the sharer. As egoism was perceived by De Vries et al. (2009, pp. 635-636) as a personality characteristic, this concept is grouped under the other-sharer personality characteristics category. In conclusion, the above example suggests that the other-sharer's egoism can have an influence on the sharer's knowledge sharing.

In addition to the other-sharer's value system and egoism, a US interviewee described how differences between a Type A or Type B personality can influence his knowledge sharing. Similar to the UK colleague above, this interviewee argued

that he would take more care when sharing knowledge when he is dealing with a Type A personality. Griffin and Moorehead (2011, p. 180) described a Type A personality as extremely competitive, likely to be aggressive and impatient. This depiction of competitiveness and aggressiveness was also brought up by the US interviewee, who was based in the internal audit department.

So if you, let's say you're a type A personality. You're aggressive, you get things done, you're not afraid to throw people under the bus, you do whatever it takes at all costs. With that person, I may be more careful about what I say to them because I don't want to be the individual that's thrown under the bus. [...]

For example, if I made a mistake in an audit, which is inevitable, you're going to make some mistakes. There may be some mistakes that are insignificant that you might not share, like you might not share that knowledge that you've made this mistake with, let's say my manager, if it's insignificant enough and if in my judgment I think it's insignificant. But maybe if another manager that I was describing as a type A person, he maybe that person, I would definitely not share the small mistakes because I'm again afraid. So in other words, there is kind of a ledger, of pluses and minuses and what you share with someone can affect that ledger, that balance. And so that ultimately can influence your career. US-04

What transpires from the above statements is that in addition to being more careful sharing knowledge with a Type A personality, some insignificant mistakes would not be shared as they are afraid of the other-sharer. Authors such as Baron (2006, p. 115) and Beehr and Grebner (2009, p. 24) regarded a Type A or Type B personality as a personality characteristic so in line with their classification this concept is grouped under the other-sharer personality characteristics category.

The third category relating to the other-sharer centres on demographic characteristics, elaborated on beneath.

4.3.3.7 Other-sharer demographic characteristics

Interviewees not only identified demographic characteristics that related to them and their knowledge sharing (see Section 4.3.3.3), one of them also argued that a demographic characteristic of the other-sharer, namely gender, can have an influence on his sharing. While he made explicit that it wasn't a question of sharing or not sharing depending on the other-sharer's gender, the method of sharing would vary.

In the general sense, it shouldn't. It has some bearing, I think, in terms of the way people like to receive information. I think, and it's very difficult to be general, but I think from my experience, the ladies like to have something explained to them whereas the men are quite often are more happy or quite comfortable with receiving a written instruction [...]. So there are differences. That's not to say you shouldn't share the information but again, that's thinking about method. UK-07

As the quote above exemplifies, gender can have an influence on whether knowledge is shared verbally or in writing. But as the interviewee stressed, it does not have an influence on the quantity of sharing.

Another interviewee in the UK branch and others in the Netherlands and the US branches however disagreed that gender has an influence on their knowledge sharing.

Does gender, um, no I don't think it does within our group. No. Not about knowledge sharing. No, I don't think so. UK-06

Thus within the UK branch, interviewees had different points of view when it comes to the other-sharer's gender and its influence on sharing. Even though there was no consensus on the influence of the other person's gender, the discussions surrounding the topic indicate that it is a concept to be incorporated into the sharer key category of influence.

4.3.3.8 Synopsis

The foregoing three sub-sections exemplify how the other-sharer's attitudes, personality characteristics and demographic characteristics can influence the sharer's perceptions of knowledge sharing. In particular interviewees stated how the other person's interest and respect towards the sharer influences their knowledge sharing.

In addition, the other-sharer's value system, egoism and Type A or Type B personality can influence sharing. In terms of demographic characteristics, one interviewee argued that the other-sharer's gender influences his knowledge sharing method while others disagreed that gender has an influence on their sharing. Similarly, openness of mind was an influencing concept for one interviewee, while another disagreed and for a third it was conditional based on whether the other-sharer was his or her direct report. The seven concepts and the three categories relating to the other-sharer can be summarised into one table, presented on the next page.

Table 4.5

Interview findings for the third key category of influence – other-sharer subsection

Category	Concepts	CN	NL	UK	US
Other-sharer attitudes	Interest	Yes	Yes	Yes	Yes
	Respect	Yes	-	-	-
	Openness of mind	No	-	-	?
Other-sharer personality characteristics	Value system	Yes	-	-	-
	Egoism	-	-	Yes	-
	Type A/B personality	-	-	-	Yes
Other-sharer demographic characteristics	Other-sharer gender	-	No	?	No

Note. CN = China, NL = the Netherlands. Yes = interviewees stated that this concept influences their knowledge sharing. Dash (-) = the concept under analysis did not emerge from the discussions with the interviewees. No = interviewees stated that this concept does not influence their knowledge sharing. Question mark (?) = interviewees within that country had differing opinions as to whether that concept influences their knowledge sharing.

What transpires from Table 4.5 above is that interviewees located across the four country branches identified a range of influences stemming from the other-sharer that shape their perceptions of knowledge sharing.

4.3.3.9 Summary

The third key category of influence centres on the sharer itself and encompasses three categories, namely attitudes, personality characteristics and demographic characteristics. Findings indicate that these three categories can relate to both the sharer initiating a knowledge sharing act as well as the other-sharer that actively participates in the knowledge sharing act. The commonality between the sharer and other-sharer is that they centre on influences pertinent to an individual.

At the same time, it is argued, the influences in this section are fundamentally different to the institution and relations key categories as attitudes and characteristics relate to an individual, not to a united entity or relations between two sharers.

To exemplify how the three categories can shape individual perceptions of knowledge sharing, this section first concentrates on the sharer (Sections 4.3.3.1 to 4.3.3.4) and then turns the attention towards attitudes and characteristics of the other-sharer (Sections 4.3.3.5 to 4.3.3.8). In regards to influences pertinent to

the sharer, interviewees described for example that they are seeking to promote their department within the organisation so shared their knowledge in order to do so. Others wanted to ensure that the organisation continues to operate even when a sharer turns ill or leaves the organisation, which again influences their perception to share their knowledge. Overall 13 concepts emerged from the data that concern the sharer (see Table 4.4).

In addition to sharer influences, interviewees raised seven concepts connected with the other-sharer and how their attitudes and characteristics influence their perceptions of knowledge sharing. For instance one US interviewee argued that if the other-sharer has a foregone conclusion and is less open to what he has to say, then this may negatively influence his knowledge sharing. Other interviewees focused on the other person's value system, degree of egoism or gender (see Table 4.5).

To explore if the third emerging key category of influence is susceptible to contextual differences, Table 4.4 and Table 4.5 are combined into one table, presented on the next page.

Table 4.6

Interview findings for the third key category of influence – sharer

Category	Concept	CN	NL	UK	US
Sharer attitudes	Organisational continuity	Yes	Yes	Yes	-
	Promotion of department	-	Yes	Yes	Yes
	Helping others learn	Yes	Yes	Yes	Yes
	Modification of communication for best possible outcomes	Yes	No	-	-
	Enhancing ones recognition	Yes	Yes	Yes	?
	Knowledgeability in area	Yes	Yes	-	?
	Reciprocity	Yes	?	No	?
	Knowledge as power	No	Yes	?	No
	Inclination towards other-sharer	?	Yes	Yes	-
Sharer personality characteristics	Self-confidence		Yes		Yes
	Extraversion	Yes	Yes		Yes
Sharer demographic characteristics	Age of sharer	Yes	?	Yes	Yes
	Working location	-	Yes	-	?
Other-sharer attitudes	Interest	Yes	Yes	Yes	Yes
	Respect	Yes	-	-	-
	Openness of mind	No	-	-	?
Other-sharer personality characteristics	Value system	Yes	-	-	-
	Egoism	-	-	Yes	-
	Type A/B personality	-	-	-	Yes
Other-sharer demographic characteristics	Other-sharer gender	-	No	?	No

Note. CN = China, NL = the Netherlands. Yes = interviewees stated that this concept influences their knowledge sharing. Dash (-) = the concept under analysis did not emerge from the discussions with the interviewees. No = interviewees stated that this concept does not influence their knowledge sharing. Question mark (?) = interviewees within that country had differing opinions as to whether that concept influences their knowledge sharing.

Analysing Table 4.6 on the previous page suggests that interviewees located across all four country branches have described attitudes and characteristics that can shape their perceptions of knowledge sharing. Although interviewees in some branches provided a more diversified set of concepts than others, the findings based on the 24 interviews suggest that there are multiple attitudes and

characteristics in each country branch that shape interviewees' perceptions. Based on that, the third key category of influence overall is not deemed to be susceptible to contextual differences.

Following the discussion of institutions, relations and sharer as key categories of influence, the next section focuses the fourth and final key category, namely knowledge.

4.3.4 Knowledge as fourth key category of influence

Up to this point it is argued that institutions are different in nature to relations as the former revolve around united entities portraying a unified message to the outside world while relations concentrate on influencing factors stemming from the relationship between the sharer and other-sharer. The relations key category in turn is different in nature to the sharer key category as the second centres on effects emanating from the sharer or other-sharer.

The fourth key category that emerges from the interview data, that again is different to the previous three, is the knowledge key category. The majority of interviewees described how knowledge itself can influence their perceptions of knowledge sharing. More specifically, they explained that confidentiality associated with knowledge has an influence on their sharing. In addition, one interviewee focused on the location of knowledge and how this influenced his knowledge sharing. Each of the two aspects is discussed in turn beneath.

4.1.1.1 Knowledge features

Confidentiality seemed to be a dominant concern for almost all interviewees located across the four country branches and was one of the most discussed concepts during the interviews. One of the reasons is that ITSC is continually developing, testing and releasing products and services to the market.

As a US interviewee stated below, during the process of designing and developing products, only a select number of staff are informed about the upcoming products and their respective details.

I deal with a lot of very extremely confidential information constantly in my job particularly about products that are being designed and developed that I'm involved with. And so I have to be very cognizant of "can I actually speak about this to that person?" *(continued on the next page)*

And so that's probably the biggest thing I have to be most careful about in terms of can I show something with somebody or something else because sometimes peoples ask me questions and I'll say, "Well, I really can't speak about that, that particular thing". US-02

As exemplified above, confidentiality can influence knowledge sharing as employees who are privy to the product details cannot share their knowledge with colleagues until it is released to the wider audience.

While the US interviewee above discussed confidentiality issues within the organisation, a Chinese and Dutch colleague argued that confidentiality can also differ between employees and customers. As the following two statements exemplify, if information is under non-disclosure then knowledge cannot be shared with customers. This can be due to the depth of information or details known inside the company that should not be shared with outsiders.

Because a lot of stuff I share is sometimes non-disclosure information. So only for employees. So you can't share it with customers or it is too detailed or some stuff you don't want to share with customer. NL-01

We can download some materials marked with confidential level. So we know some confidential knowledge. But of course it is not allowed to share with the customers. CN-05

As the Dutch interviewee indicates, one solution to ensure that knowledge is kept confidential is through non-disclosure agreements. According to a UK interviewee, ITSC has two types of non-disclosure agreements. Depending on the type of work an employee performs, they would either sign a blanket agreement or product-specific non-disclosure agreements.

Within IT, for example, just by the nature of the job, we will come across information that is sensitive perhaps on a personnel basis, personal basis, HR-type related, it might be financial information. Just because we are working directly with that data, working on people's machines, so, we would sign a blanket nondisclosure agreement.

Question: When you start at ITSC?

Answer: When you start and that is typically reviewed every so many years, you expect to re-sign that. On the other hand, if I was invited to be a part of a product launch, because I have some specific, specialist knowledge on that particular area, [then] I would sign the product-specific NDA [non-disclosure agreement]. UK-07

According to another UK colleague, this would ensure that knowledge is shared freely only among staff that signed the same level of non-disclosure agreement.

Under certain conditions I might be non-disclosed on information that is sensitive to a particular transaction or projects that we're involved in. Obviously, under those circumstances, I wouldn't talk about it to anybody that wasn't equally non-disclosed. UK-01

As indicated above, in some instances knowledge must not be shared with other employees or customers and non-disclosure agreements aim to prevent this from occurring. However at other times knowledge needs to be shared with a wider audience despite it being classified as confidential. In that case, a UK interviewee suggested embedding it among many other details.

We have loads of information and we need to face up to the problem of trying to contextualise it; trying to make sure that it makes sense to people and relating it to business issues, commercial issues, and that sort of thing. So as they say, the best place to hide a twig is in the wood. The same sort of thing applies to information. If you got stuff, best place to, if [one] had confidential information, I guess, the best place to hide it would be in loads of information. You're imparting just through that. UK-03

Regardless of whether knowledge must not be shared or should not be shared, the above discussions indicate that knowledge itself can influence whether or how a sharer shares knowledge.

Another aspect relating to knowledge itself was brought up by a Dutch interviewee. He stated that most of his knowledge is in his head and therefore can be shared promptly. On the other hand, if knowledge needed to be sourced elsewhere, this could delay the sharing of it.

Most of what is asked in my case is something that I can just provide out of my mind. I don't have to look something up. When it takes more time, I sometimes I'll mark it and leave it for a later moment, and when it's really urgent, then I know that somebody will come back to it before I come back to it. NL-06

This exemplifies that the location of knowledge, that is either stored internally or externally, can influence the timeframe in which knowledge is shared.

Based on the foregoing quotes and discussion, it is argued that interviewees described instances where knowledge itself has an influence on their perceptions of knowledge sharing. These related to confidentiality and location. Supekar, Patel, and Lee (2004, p. 221) referred to these two aspects as knowledge features so in line with their categorisation, they are grouped under the knowledge feature category.

4.1.1.2 Summary

To reiterate, the majority of interviewees located across the four country branches stated that knowledge confidentiality influences their knowledge sharing. In addition, a Dutch interviewee argued that knowledge location influences his sharing where internalised knowledge is shared faster than knowledge that needs to be located externally.

Knowledge is considered to be again of different nature compared to the previous three key categories as it emphasises how knowledge itself can influence individual perceptions of knowledge sharing. It is argued that knowledge is not a united entity, nor a relationship between two sharers, nor an attitude or characteristic of a sharer. Yet the majority of interviewees perceived knowledge to influence their knowledge sharing. This is in line with prior research (e.g. Hew & Hara, 2007, p. 2319; W. Li, 2008, p. 159; Soo, 2006, p. 129) that has also identified confidentiality to influence knowledge sharing.

As stated above, both confidentiality and knowledge can be grouped under the knowledge features category, as depicted in the following table.

Table 4.7

Interview findings for the fourth key category of influence – knowledge

Category	Concept	CN	NL	UK	US
Knowledge features	Confidentiality	Yes	Yes	Yes	Yes
	Location	-	Yes	-	-

Note. CN = China, NL = the Netherlands. Yes = interviewees stated that this concept influences their knowledge sharing. Dash (-) = the concept under analysis did not emerge from the discussions with the interviewees.

Considering that the majority of interviewees identified confidentiality of knowledge as an influence, it is argued that the knowledge key category is important in all four country branches, and thus not susceptible to contextual differences.

After elaborating on each of the four key categories of influences that emerged from the interview data, attention is now turned towards their interrelationships.

4.4 Interrelationships between the four key categories of influences

Up to this point, the institution, relations, sharer and knowledge key categories of influences are presented in separation. That is, they are portrayed as independent influences shaping individual perceptions of knowledge sharing. While this segregated conceptualisation is in line with some authors, such as Witherspoon et al. (2013), the interview data and certain literature point towards an interrelationship between categories. The goal of this section is therefore to expand upon this notion and develop the argument that knowledge sharing is a complex phenomenon, as the four key categories of different nature are interconnected and that they together in turn can influence individual perceptions. In order to substantiate the argument that is put forward here, statements from interviewees are depicted and supported by literature where relevant. In the following sections the key categories are presented in pairs to emphasise that each one is interrelated, starting with the institution – sharer one. Combined however, they form a diamond-like model where all four key categories are intertwined and influence each other.

4.4.1 Institution – sharer interrelationships

Several interviewees discussed the connection between the institution and sharer key categories and how they together can influence individual perceptions. A Chinese interviewee for example observed that different groups tend to have certain types of individual personalities associated with them.

I would say by different group. Definitely the sales guys that's by their personality, their nature but a lot of those are social animals. So definitely there's a bit of social activity but then other groups, say Finance because we do work long hours. We are try to have some sort of functional gatherings but not as often I would say because after a long day I mean you really want me to go home.

Question: So do you think that socialising outside work has an impact on knowledge sharing?

Answer: Oh yeah, I do think so because some of the knowledge sharing is not through very formal channel [...] but a lot of those knowledge sharing is really through the human interaction which there's really coming from after-hours mingling. CN-04

As the quote above suggests, sales groups seem to include individuals with social personalities and participate in more social activities and that this in turn can lead to more sharing. Thus the personality characteristic of the sharer, i.e. being a 'social animal', seems to be connected to the group they tend to belong to which

together can influence knowledge sharing. This could indicate that the group as a whole can be perceived as being socially active which reinforces and is reinforced by individual personality types. In a similar vein, Xue, Bradley, and Liang (2011, p. 307) found that group climate can influence individuals' subjective attitude towards sharing which subsequently influences knowledge sharing.

When there is no congruence between an institution and a sharer's personality, then less knowledge sharing can take place, as was outlined by a UK interviewee.

Then in a different culture such as the company I worked for before here such as []. And I know I'm talking with total discretion and I shouldn't be slagging the competition, but it's a company I worked for that has a completely different culture [...]. [...] And so, like I said at the beginning, you don't reciprocate and then naturally you then realise because I am who I am this is not my environment. UK-02

What transpires from the quote above is that there needs to be an overlap between the sharer's personality and the organisational culture. Abstracted, this indicates that there is a connection between the sharer and institution key categories and that knowledge sharing is influenced by the connection between the two.

4.4.2 Sharer – relations interrelationships

In addition to the connection between the institution and sharer key categories, it is argued that the sharer key category is also related to the relations key category. A US interviewee illustrated this connection when arguing that generational or age differences between the sharer and other-sharer can influence his attitude towards this person and in turn his knowledge sharing.

On the other hand, I can see how generational differences do influence knowledge sharing. How I relate to someone influences the way in which I share knowledge with them. The extent to which I relate to someone, superficially, is influenced by their generation or age. I might feel like I can be more familiar or casual in my interaction with someone my age, whereas with someone that is twice my age I might not feel the same sense of familiarity. By familiarity, I mean how I can relate, as a person, to the other person's life experience. I might expect, right or wrong, that someone in their mid-30s is experiencing or has experienced certain life events (e.g., college, marriage maybe, etc.), and I would relate to them based on this assumption I might make. I think this assumption is further exaggerated in the workplace because it seems easy to expect that someone of your generation has had similar experiences which have led them to working for the same company at the same time in their life. *(continued on the next page)*

I admit this it is a huge and biased assumption that someone of my generation necessarily has had a similar life experience as me; nevertheless I am sure I make these judgments – consciously or not. In other words, if I feel that I can relate to someone’s life experiences, I might more freely share knowledge with them. If I cannot relate to someone, the opposite can be true. US-04

It is argued in line with Hanson (2012, pp. ii, 130) that generational or age differences are a dyadic¹⁸ phenomenon and thus can be grouped under the relations key category while feeling of familiarity can be classified as an individual attitude (Schachtel, 1959, p. 161). Based on the foregoing statement this suggests that the relations key category can influence the sharer key category as generational differences influence the sharer’s attitude and subsequently his or her knowledge sharing.

Besides age differences, a prior study found that relationship strength (i.e. tie strength) has a positive and significant influence on the ease of knowledge transfer as evaluated by the sharer (Reagans & McEvily, 2003, p. 259). As tie strength is conceptualised as a dyadic relationship (Siemsen, Roth, Balasubramanian, & Anand, 2009, p. 431) but ease of knowledge transfer as an individual perception (S. Wang & Noe, 2010, p. 120), this suggests that the relations key category can influence the sharer key category.

4.4.3 Relations – institution interrelationships

In addition to the relations key category being connected to the sharer key category, data indicate that the relations key category is also interrelated to the institution key category. One interviewee located in China elaborated on how the need for relationships between two sharers can be influenced by different institutional norms.

Culture, I think, I do not touch Hong Kong guys, we’re more; but we do have Hong Kong guys in IT team in Hong Kong. But I don’t talk very more with him. I can feel a little bit difference is the Hong Kong people that the way they think is more like the Western people. But in China, sometime like on product, China people used to talk about the relationship maybe with the bidding officer. Anything in China, you have to have a good relationship with your- even with your vendor. But in Western or in Hong Kong, relationship is also important but not important than in China, I think. So sometime they just buy something from a vendor, never co-cooperated before, it’s no problem in Hong Kong maybe. But in China, maybe you got another problem and maybe you got it. CN-01

¹⁸ A dyad refers to a ‘group of two’ (OED Online, 2014).

As the preceding quote illustrates, institutional norms about the importance of relationships are intrinsically linked to the relationships cultivated and maintained by the sharers.

Besides institutions influencing relations, literature also suggests a reverse relationship. Robison and Ritchie (2010, p. 67), paraphrasing Hirschman (1970), stated that the 'maintenance of institutions depends on the maintenance of the linkages that connect people in the network. If individuals leave the network, the influence of the institution has diminished'. This indicates that relationships between individuals have a direct influence on the dominance of an institution. Combining the findings from the interviews and literature signifies that there can be a mutual relationship between the relations and institution key categories, which together can influence individual perceptions of knowledge sharing.

4.4.4 Institution – knowledge interrelationships

While the previous section and Section 4.4.1 expand upon the connections between the institution – relations and institution – sharer key categories respectively, in this part it is argued that the institution key category is also related to the knowledge key category. Support towards this argument is provided in an interviewee statement as well as existing literature. For instance one US interviewee stated that national policies influence the degree of confidentiality associated with knowledge and that this subsequently influences knowledge sharing.

There's some big controls over there in terms of knowledge sharing from my aspect since the information I'm doing is often going through a phase where it's extremely secret and then confidential, eventually get released. However, where countries it gets released to has to go, it's a very defined process. And for example even within the European community France is much more strict about certain things and red tape than say the UK is or Germany is. And generally it takes much longer to get the approval export controls. So that impacts everything even training or sharing information, particularly sharing information. So there could be times like I share information with a colleague in the UK and I won't be able to share that same information with somebody in France. US-02

In the example above, export control regulations are stricter in France than in other European countries which determine if knowledge about a new product has to be kept confidential or could be shared with colleagues in that country.

This indicates a connection between the institutions, such as the French institution, and knowledge.

The fact that institutions can influence the knowledge key category and knowledge sharing is also discussed by other authors. W. Huang, Siau, and Wei (2005, p. 266) for example stated that institutions are commanding authorities that can prohibit or permit knowledge sharing through legal or political principles, of which confidentiality is one. Their statement illustrates how an institution can influence confidentiality surrounding knowledge and how this in turn can influence knowledge sharing.

4.4.5 Knowledge - sharer interrelationships

Moving away from the institution key category being interrelated to the other three key categories, this section focuses on the interrelationship between the knowledge and sharer key categories. What transpires from interviews is that confidentiality of knowledge is not only dependent on institutional laws, as outlined in the previous section, but also on the attitude of individuals. This relates back to Section 4.3.3.1 where some individuals previously felt that knowledge was power and therefore had to be kept private. As a UK interviewee was saying:

I'm sure I went through the stage seeing knowledge is power. You know, I have this knowledge and you can't have it because that then shows that I'm no value to people and if I give this away, I'm not getting anything for it. UK-03

The above statement indicates that a sharer's attitude towards knowledge being power can influence the level of confidentiality that surrounds knowledge which in turn can influence their knowledge sharing.

In addition to the relationship between knowledge as power (i.e. sharer key category) and confidentiality (i.e. knowledge key category), a quantitative survey conducted in Korea found that explicit or tacit knowledge types moderate the relationship between individual-level variables and knowledge sharing (N. Cho, Zheng, & Su, 2007, p. 11). That is, the knowledge key category can influence the sharer key category and together can influence individual perceptions. Combining the findings from both the interview transcript and existing literature indicates that there can be an interconnection between the knowledge and sharer key categories and that they can influence knowledge sharing.

4.4.6 Knowledge - relations interrelationships

The sixth and final interrelationship that can exist is between the knowledge and relations key categories. Interviewees provided examples that illustrate that

knowledge can influence relations and vice versa. When asking one UK interviewee about whether he likes to be contacted for knowledge, he replied that it makes him feel good and helps strengthen relationships.

No, it's good. I think it makes you feel good when you are contacted generally because you feel like that, unless I'm really manically busy. I'm generally happy to help because it's helped people and again it helps reinforce relationships. And the fact that they come to you for that information suggests that they, all that knowledge, they think you can help them; therefore it's part of what you know, business, or if you can't get in the knowledge that they need, you point them in the right direction. UK-06

The statement above exemplifies that knowledge can help other people and reinforce relationships between the sharer and other-sharer. Translated, this indicates that the knowledge key category can influence the relations key category as knowledge possessed by the sharer can help boost relationships with the other-sharer when it is shared.

At the same time, relationships can influence the knowledge key category as was elaborated on by a US interviewee.

Like this one guy I golf with and play basketball with.

Question: Do you think that has an influence on knowledge sharing as well?

Answer: Oh, yeah. Because that impacts your relationship with that individual, so the more conformable you feel with someone, the more willing you are to share knowledge because you develop a trusting relationship with that person. So even if it's sensitive information, if you're my friend, I'm more willing to share it even if it's sensitive because I have trust with you and I know you're not going to go tell somebody that shouldn't hear that. US-04

As the foregoing quote indicates, having a trusting relationship with the other-sharer influences the degree to which confidential or sensitive knowledge is shared, which offers support towards the notion that the two key categories are connected.

Prior literature has provided similar findings in that the knowledge and relations key categories are interconnected. For instance the strength of a business relationship contributes to the sharing of public and private knowledge, according to Marouf (2007, p. 121).

This exemplifies how the relations key category can influence the knowledge key category. Similarly, research undertaken by Jackson and Webster (2007, p. 58)

suggests that the quality of relationships between local stakeholders and government departments can influence the quantity of knowledge shared between the two entities. Together, the preceding literature outlined and the statements made by the interviewees provide support towards the argument that the knowledge and relations key categories are related.

4.4.7 Summary

In contrast to Section 4.3 which presents the four key categories fundamentally different in nature as discrete influences that shape individual perceptions of knowledge sharing, this current section illustrates interview data and literature that indicate that the four key categories are intertwined like a diamond and that they together can influence individual perceptions. Each of the foregoing six sections (4.4.1 to 4.4.6) concentrate on one pair of key categories to emphasise their interrelatedness. For instance the first pair illustrates how sales groups (as an institution) tend to be socially active and include individuals with a social personality (i.e. sharer personality characteristic). This interrelationship, as indicated by a Chinese interviewee, can influence individual perceptions of knowledge sharing. However, the institution key category is also interconnected with the relations one and simultaneously with the knowledge key category. Thus fusing all the interrelationships together forms a diamond model where the four key categories are intertwined and each influences the other.

Considering that the findings from this section and the previous are rather lengthy, the following combines the main points into a concise summary.

4.5 Summary

The literature review concluded that the knowledge sharing literature to date does not seem to have arrived yet at a consensus as to the key categories¹⁹ of influences that shape knowledge sharing (see Sections 2.3 and 2.4). In order to contribute to this area, the aim of this thesis is to develop a holistic framework that depicts key categories of influences that shape individual perceptions of knowledge sharing so a more advanced understanding of the knowledge sharing phenomenon can be generated. In order to achieve this aim, the first objective of this study is to develop key categories of influences.

¹⁹ A key category is fundamentally different in nature while a category has properties that may or may not be different in nature.

Given that literature has pointed towards the possibility that different contexts may influence the key categories, the second objective of this thesis is to explore if the emerging key categories of influences are relevant across four specific contexts. The four contexts are branches of a single IT services organisation that are located in China, the Netherlands, the UK and the US (see Section 3.5).

Within these four country branches 24 interviews in total are conducted and the purpose of this chapter is to present the findings that emerged from the data. The first part of this chapter (Section 4.2) contextualises the findings by introducing ITSC, then the four country branches and lastly the interviewees. In short, ITSC was established in the 1980s supplying mainframes to clients and has developed into an organisation with sales in more than 80 countries to help many Fortune Global 100 companies to store and manage their information and provide tools to access and search for existing information across varying storage platforms. The organisation has a 'kind of strange combination of different corporate cultures' (US-02) being headquartered in the US but influenced by other cultures. In regards to knowledge sharing, ITSC has developed both a codification and socialisation strategy, employing knowledge management tools as well as off-site events to share the latest knowledge between employees.

Of the 80 potential countries in which ITSC is conducting sales, four country branches are chosen due to their varying purposes and characteristics. The Chinese branch has been rapidly expanding, the Dutch branch hosts the European distribution centre, the UK branch is the headquarters for Europe and the US branch accommodates global headquarters.

Within these four country branches, seven interviewees are progressively selected in the UK to achieve data saturation and another 17 interviewees in total in the other three country branches to approach parity, i.e. evenly balanced comparison. Their commonality is that they have been working for the company three or more years. Apart from this, interviewees are predominantly male, are based in a variety of departments and occupy five different positions. Together with the four country branches and the organisation, it provides the context in which the findings are embedded.

Section 4.3 then elaborates on four key categories that emerge from the data, called institution, relations, sharer and knowledge. It is argued that each of the four key categories is different in nature. The institution key category represents

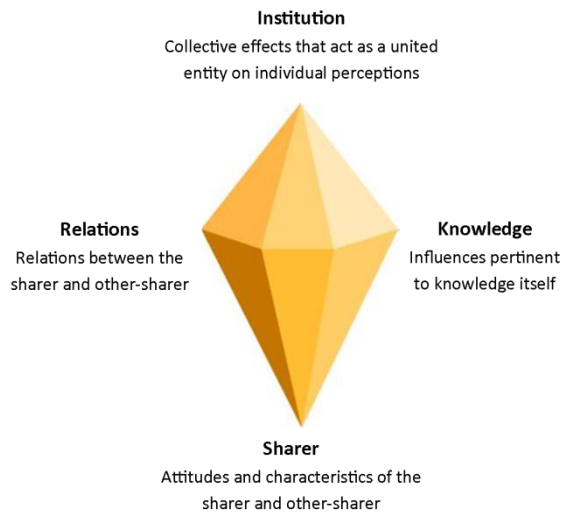
influences that the sharer perceives as a united entity, such as governments and other departments, and that send a unified message to the sharer. The relations key category symbolises influences that arise from relationships between the sharer and other-sharer, for example the degree of familiarity between the two sharers. The sharer key category signifies influences stemming from the sharer and other-sharer and includes attitudes or characteristics. Finally, the knowledge key category corresponds to influences emanating from knowledge itself and that again influence the sharer's knowledge sharing.

In addition to answering the first research objective (i.e. developing key categories of influences), Section 4.3 addresses the second research objective of exploring if the emerging key categories of influences are relevant across four specific contexts. Based on interviewee data, three of the key categories do not seem to be influenced by contextual differences while the relations key category is susceptible to context. As can be seen from Table 4.3 previously, the relations key category more strongly influences interviewees located in the Chinese and US branches and to a lesser extent UK interviewees. The majority of interviewees located in the Netherlands however were divided on whether the relations key category has an influence on their knowledge sharing. Considering the different emphasis among interviewees based in the four country branches it is argued that the relations key category is susceptible to contextual differences.

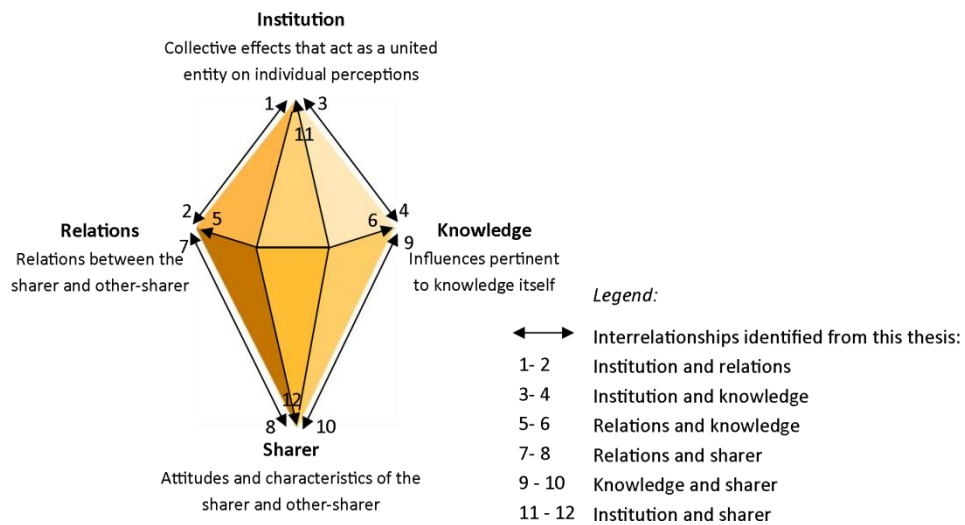
Yet the key categories are not considered by interviewees as influencing their perceptions of knowledge sharing in isolation. Section 4.4 elaborates on these findings by illustrating how pairs of key categories are interrelated and that they together form like a diamond where each of the four key categories are intertwined and influence each other.

What transpires from the foregoing discussion is that individual perceptions of knowledge sharing are not only influenced directly by the institution, relations, sharer and knowledge key categories but also by the interrelationships between the four key categories. This is in contrast to the existing literature presented in Chapter 2 where categories were predominantly conceptualised as independently influencing knowledge sharing or where only some of the key categories were discussed. This, it is argued, provides a new and different understanding of the knowledge sharing phenomenon, as expanded on in the next chapter. Before doing so however, the findings can be presented graphically as illustrated next.

Findings from this thesis suggest that individual perceptions of knowledge sharing are influenced by the following four key categories of influences:



Yet the four key categories of influences not only shape individual perceptions in isolation, they also influence each other and together can shape knowledge sharing. This results in 12 interrelationships as shown below:



Furthermore, the findings indicate that some of the key categories are stable across contexts while others are susceptible to contextual differences:

	Institution	Relations	Sharer	Knowledge
CN	Important	Important	Important	Important
NL	Important	Divided	Important	Important
UK	Important	Somewhat important	Important	Important
US	Important	Important	Important	Important

5 Synthesis and discussion of the findings

5.1 Introduction

The aim of this chapter is to integrate the arguments put forward and findings uncovered in this study with existing literature. Some of the literature was covered in Chapter 2 and is referred to again in this chapter. In other instances further literature is drawn upon to contextualise and substantiate the findings to better appreciate the discussion advanced in Sections 5.2 to 5.4. Before proceeding with the discussion however, the main points emanating from the literature review and findings chapter are restated below.

A systematic literature review was executed in Chapter 2 to assess the knowledge sharing landscape utilising meta-analyses and narrative reviews contained in 13 databases and grey literature. This was supplemented by further literature where appropriate. The first main finding was that authors such as Cummings (2003), Van Wijk et al. (2008), S. Wang and Noe (2010) and Witherspoon et al. (2013) varied in what they perceived as the high level categories of influences that shape knowledge sharing. Figure 2.7 illustrated this by consolidating the categories into a single diagram. This lack of consensus on the categories is also reflected by individual studies, as shown in Table 2.3. So despite there being a large volume of literature in regards to knowledge sharing, it does not seem that the field has yet arrived at a consensus as to the key influences that shape knowledge sharing. In order to move towards Rutten's (2003, p. 2) goal of increasing our knowledge of knowledge, creating a shared understanding (Smylie, 2011, p. 182) so a rigorous debate (Beesley & Cooper, 2008, p. 50) about the phenomenon can occur and building guidelines for knowledge sharing practices (Wickramasinghe & Widyaratne, 2012, p. 216), the aim of this thesis is to develop a holistic framework that depicts key categories of influences that shape individual perceptions of knowledge sharing.

This aim led to the development of two specific research objectives. The first objective is to develop key categories of influences that shape individual perceptions of knowledge sharing. The second objective of this thesis is to explore if the emerging key categories of influences are relevant across four specific contexts. The rationale behind exploring the key categories in multiple contexts stems from existing literature that has pointed towards the possibility that

different contexts may influence the key categories and ‘provide[s] multiple chances to capture synergistic effects’ (West & King, 1996, p. 156) as well as divergences. To recall, the four contexts are branches of a single IT services organisation where the Chinese branch has been rapidly expanding, the Dutch branch hosts the European distribution centre, the UK branch is the headquarters for Europe and the US branch accommodates global headquarters. Based on the literature review undertaken, no other study to date has investigated a holistic framework in these four different contexts.

Chapter 3 then operationalised the two research objectives by identifying and justifying a case study strategy of inquiry, qualitative interview research method and ITSC as the research setting as well as an analysis technique called constant comparison. In short, constant comparison is a data analysis method that provides guidelines on the abstraction process from data to concepts to categories (see Sections 3.8 and 3.9).

The findings obtained by executing the constant comparison method were presented in Chapter 4. However, to contextualise what emerged from the data, the first section of the previous chapter introduced the company, then the four country branches and lastly the interviewees. The following section illustrated four key categories of influences that can shape individual perceptions of knowledge sharing. The first key influence concentrates on institutions which act as a united entity on individual perceptions of sharing. The second key influence of a fundamentally different nature revolves around relations between individuals sharing knowledge. The third key influence centres on the individuals themselves (called sharers) and how their attitudes and characteristics can shape their knowledge sharing perceptions. The fourth and final key influence focuses on knowledge itself and how this can shape individual perceptions. It is argued that each of the four key categories is fundamentally different in nature as the first is concerned with collective influences, the second with relationship influences, the third with influences pertinent to sharers and the fourth with aspects associated with knowledge itself.

Additionally to answering the first research objective, the second section of the previous chapter (Section 4.3) explored if the emerging key categories of influences are relevant across the four contexts. Grounded in interview data, the institution, sharer and knowledge key categories are not susceptible to contextual

differences while the relations key category more strongly influences interviewees located in the Chinese and the US branches compared to the UK colleagues.

As to Dutch interviewees, the majority was divided on whether the relations key category has an influence on their knowledge sharing. Considering the varying emphasis placed on the relations key category among interviewees based in the four country branches, it is argued that the relations key category is susceptible to contextual differences. As for the other three key categories, interviewees across all four country branches provided multiple concepts and an overall consensus that they influence their perceptions of knowledge sharing.

Furthermore to the four key categories of influences surfacing from the constant comparison method, findings suggest that individual perceptions of knowledge sharing are not only influenced directly by the institution, relations, sharer and knowledge key categories but also by interrelationships between the four key categories (see Section 4.4). These interrelationships can be conceptualised like a diamond where the atoms are intertwined and where the atoms are influencing each other.

While Chapter 4 concluded with a newly developed holistic framework, this chapter initially reverts back to the five categories of influences (i.e. knowledge, individual, group, organisation and environment) identified from the literature review and evaluates it against the holistic framework developed. This, it is argued, provides a richer understanding of the similarities and differences as well as the advantages and limitations between the theoretical categorisation framework stemming from the literature and the practical holistic framework that emerges from this case study. The chapter then progresses to assess the developed holistic framework more generally against the existing literature. In order to facilitate this dialogue, Sections 5.3 and 5.4 are structured around the two research objectives, rather than by the key categories of influences. A summary of key points in Section 5.5 brings this chapter to a close.

5.2 Comparison of a five category theoretical framework with the developed holistic framework

To reiterate, the first research objective is to develop key categories of influences that shape individual perceptions of knowledge sharing. One possible set of key categories was identified in the literature review where authors have used the knowledge, individual, group, organisation and environment as categories when

discussing knowledge sharing (e.g. Aizpurúa et al., 2011, p. 511; Javadi et al., 2012, p. 213; Michailova & Hutchings, 2006, p. 385; Westphal & Shaw, 2005, pp. 77, 80). Findings from this thesis however suggest that this theoretical framework is only marginally effective in practice for three main reasons.

First, the theoretical framework does not differentiate between categories that are similar in nature and ones that are different by giving each of the categories the same status. Second, the theoretical framework omits the importance of relationships between sharers and how these can influence perceptions of knowledge sharing. Third, the theoretical framework provides a simplistic view as synergies and tensions arising from interrelationships between categories are not acknowledged but present in the findings.

In contrast to the theoretical framework, the newly developed holistic framework, comprising of the institution, relations, sharer and knowledge key categories, overcomes these three main limitations and is thus considered more effective in depicting key categories of influences that shape individual perceptions of knowledge sharing. More effective in the sense that it consolidates categories similar in nature into one key category while emphasising categories that are different while at the same time acknowledging interrelationships between the key categories.

In order to arrive at the conclusion above, each of the three main aspects outlined above is elaborated on in turn below, starting with a discussion on the representation of categories.

5.2.1 Conceptualisation of the categories

The literature, presented in Chapter 2, depicted the group, organisation and environment categories as discrete categories and as being of the same status. However, as described in Section 4.3.1, the commonality between these three categories is that they are perceived by interviewees as institutions that, as a whole, influence their perceptions. This stems from statements such as 'process changes coming from corporate' (UK-05) or 'all regulations which you need to follow' (NL-04). What emanates from the quotes is that interviewees viewed 'corporate' or governmental regulations as a single entity that enact changes in processes or influence what individuals need to do. It suggests that they are perceived as unified social structures rather than separate actors influencing the individual sharing knowledge.

Support towards the general notion that the group, organisation and environment categories can act as collective influences is not only uncovered by interview data but also found in existing literature. For example, the communication style adopted by the group can influence knowledge sharing between individuals (de Vries et al., 2006, p. 115). That is, whether the group as a whole embraces an agreeable or extraverted communication style can influence an individual group member's willingness to share knowledge. Similarly, the culture of the group was found to significantly influence knowledge sharing (Glomseth, Gottschalk, & Solli-Sæther, 2007, p. 106). From an organisational perspective, Lemmetyinen (2007, p. 50) quantitatively examined factors influencing knowledge sharing and asked survey questions such as 'open communication is characteristic of the organization as a whole' or 'the organization has processes in place for knowledge sharing'. This suggests that Lemmetyinen (2007, p. 50) was seeking answers from interviewees on the organisation as a whole entity.

In addition to the group and organisation categories being perceived by authors as a united entity, the environment category is also seen by some authors as a single whole that provides uniform messages to the outside. For example I. C. Hsu and Wang (2008, pp. 46, 60) stated that the Taiwanese government encourages knowledge sharing by implementing policies and practices. For Y. Wang and Chao (2008, p. 257) on the other hand this seemed not yet adequate as they suggested that the government could increase funding and cooperation between R&D programs of firms and facilitate conferences to stimulate knowledge sharing. Despite the authors differing in views as to whether the government is encouraging knowledge sharing sufficiently, their statements indicate that the authors perceived the Taiwanese government to be a unified institution that can influence knowledge sharing.

Combining both the findings from the interviewees as well as existing literature suggests that the group, organisation and environment categories can act in a unified manner past their boundary and as a united entity influence individual perceptions of knowledge sharing. Based on this, it is argued that the theoretical framework is less effective as it separates three categories that in fact are similar in nature. The developed holistic framework on the other hand acknowledges their similarities and combines the group, organisation and environment categories into a single key category, called institution (see Section 4.3.1). Doing

so provides a more efficient and high level view of the key categories of influences that shape individual perceptions of knowledge sharing.

5.2.2 The importance of relationships between sharers

The second basis for arguing that the theoretical framework is effective on a limited scale is that it omits the important role relationships between the sharer and other-sharer play. Interview findings were grouped in Section 4.3.2 into three types of relationships, namely physical, cultural and social²⁰. One interviewee located in the US succinctly itemised all three types of relationships when he spoke about trust and how they either directly or indirectly influence knowledge sharing.

One of the biggest thing that we didn't really talk about is trust. So even though I like to think that there aren't too many barriers for us to share knowledge, that is as long as it's not proprietary, taken into consideration culture, location, et cetera. There is a level of trust that needs to occur. That human trust to be able to want to go and say, you know, I'm going to forward to you this email that contains all this information. Or I am going to pick up the phone and call you and explain it. There's no doubt in my mind that when there is that level of trust, or camaraderie, or whatever you want to call it, that's created by socialising outside of work, it could add tremendous value. US-06

The second sentence suggests that physical and cultural relationships influence knowledge sharing by stating that culture and location need to be taken into account. Social relationships emerge as a third type which seems to provide a basis from which trust is created that in turn can influence knowledge sharing. Although the word 'relationship' between sharer and other-sharer was not made explicit, the statement indicates that there are two individuals involved by using the words 'I' and 'you'. The view that relationships can influence knowledge sharing is substantiated by other interviewees such as NL-02 who focused on physical co-location or UK-03 who discussed cultural relationships (see Sections 4.3.2.1 and 4.3.2.2 respectively).

The notion that relationships between two sharers can influence knowledge sharing not only emerges from the interviews but has also been examined in prior research. In addition to the physical, cultural and social relationships, other studies suggested that shared cognitive perspectives (M. Evans, Wensley, & Choo,

²⁰ Physical co-location refers to the degree sharers are dispersed between offices and countries; cultural relationship refers to the degree sharers have a similar/distinct cultural background; social relationship refers to the period of time sharers have known each other or socialise outside working hours.

2012, p. 294) as well as similarity in expertise between the sharer and other-sharer (Black, Carlile, & Nelson, 2004, p. 601) can influence knowledge sharing.

One could argue that the theoretical framework implicitly incorporates relationships into the individual category but the findings indicate a distinction between individuals and relationships. While the former is primarily concerned with attitudes and characteristics of a sharer or other-sharer (Section 4.3.3), the latter focuses, as outlined previously, on physical, cultural and social relationships between a sharer and other-sharer (see Section 4.3.2). One interviewee alluded to such a distinction when he described two different managers and how they influenced his knowledge sharing. He argued that he was more careful sharing knowledge with a manager exhibiting a Type A personality compared to Type B personality (Section 4.3.3.6). He then continued to state that the working style of that manager and his relationship to that manager had an influence on sharing.

It's the use of the knowledge but it is also their working style, if you will. And that plays into personality, too. So if you, let's say you're a type A personality. You're aggressive, you get things done, you're not afraid to throw people under the bus, you do whatever it takes at all costs. With that person, I may be more careful about what I say to them because I don't want to be the individual that's thrown under the bus. Whereas, my current manager, he's very, very open. I feel like I can have open discussion with him and I feel like he understands what I'm saying and I understand him. So it depends on personality, working style, and then your individual relationship with the person. US-04

Although the interviewee predominantly spoke about the manager's characteristics in terms of personality and working style, he argued at the end of the foregoing quote that the relationship between the two individuals also had an influence on sharing. The construction of the last sentence indicates that personality and working style are of similar nature, as they relate to the sharer key category, while the relationship to the manager is different by using the term 'and then'. Yet the conceptual distinction between sharers and relationships is made through interpretation of the statement rather than being expressed by the interviewee himself.

Quigley, Tesluk, Locke, and Bartol (2007) on the other hand made it explicit that individuals and relationships are two separate categories. In their study they assessed knowledge sharing between two individuals and the influence this had on individual performance. Included in their model were norms for knowledge sharing and trust. The former examined the level of shared norms between two

sharers (called a dyad) while the latter examined the degree of trust a sharer had towards the other-sharer. They identified norms as being relational while trust was a sharer element. In their words: 'We conceptualized norms for knowledge sharing at the dyad level and trust at the individual level. This theoretical distinction in levels of analysis reflects the fundamentally different nature of the variables' (2007, p. 85). Similarly, Rhee, Yang, and Yoo (2012, pp. 9-10) separated individual-level variables such as age, education and gender from dyad variables consisting of tie duration and affective closeness of friendship tie. Those two studies lend support towards the argument that sharer and relations are two different key categories.

In conclusion, the second justification of why the theoretical framework identified from the literature is only marginally effective is that it omits relationships between sharers. As discussed previously, findings from the interviews and existing literature indicate that relationships can influence knowledge sharing. Although one could argue that the individual category incorporates relationships between sharers, there is empirical data that suggest that the two categories are distinct.

5.2.3 Synergies and tensions arising from interrelationships between categories

The third reason the theoretical framework is perceived as less efficient and too simplistic is that interrelationships consisting of synergies and tensions between categories are not explicitly depicted but present in the findings. This aspect of interrelatedness is acknowledged in the developed holistic framework in that the key categories are intersecting in a synergistic manner but also shaped by the tensions between them (see Section 4.4).

In regards to synergies, a Chinese interviewee, as detailed in Section 4.4.1, observed that different groups or teams tend to have certain types of individual personalities associated with them. When asking him whether it was common for employees to socialise outside working hours he replied: 'I would say by different group. Definitely the sales guys that's by their personality, their nature but a lot of those are social animals. So definitely there's a bit of social activity [...]' (CN-04). The reply indicates a synergy between individuals and the group as a whole as the social personality of the individual harmonises with the degree of social activities in that group. Another example was given by a UK interviewee who described how compatibility between an organisation's culture and personality

characteristics of the individual can create a 'fertile ground' where knowledge sharing is a 'natural thing' (UK-02). This suggests that there needs to be a synergy between the organisation's culture on an aggregated level and the personality of the individual and that this synergy can influence perceptions of knowledge sharing.

This finding is similar to the argument put forward by Riege (2005, p. 31) who stated that a knowledge sharing culture depends on the synergy between the motivation of individuals, organisational structure and modern technology. Arguing that motivation is an individual phenomenon (Mangal, 2007, p. 252) while structure and technology are organisational (Patel, Samara, & Patel, 2011, p. 19) indicates that there needs to be a harmony between the person and the organisation for a knowledge sharing culture to succeed. While Riege's (2005, p. 31) research suggests that the personality of an individual needs to be compatible with the organisational culture, a synergy between a person's belief about their capabilities to match the demands of a team did not have an influence on the person's knowledge sharing (Seong & Kristof-Brown, 2012, pp. 541, 544). This indicates that an abilities-based fit between a person and group is not a prerequisite for knowledge sharing. Thus harmony between individuals and groups or organisations does not need to be fulfilled in all aspects for knowledge sharing to occur. Nonetheless, in some circumstances synergy seems to influence knowledge sharing and therefore should have been incorporated in the theoretical framework identified from the literature review.

Not only are synergies absent from the theoretical framework, it also overlooks how tensions can influence individual perceptions of knowledge sharing. Interviewees illustrated these tensions between key categories on multiple occasions. For example one Dutch interviewee felt that the subsidiary in the Netherlands shared selective knowledge with colleagues in other countries to portray the Dutch subsidiary in a better light.

So for real sort of knowledge sharing and information sharing I think what is also sort of stopping us from doing that, particularly when you get across borders, at least that strikes me, is that we're not always willing to be so transparent in what actually [is] keeping us busy and what our challenges are. We always like to sort of do a little of window-dressing to our other colleagues on how well we are performing, how good we have everything under control. And I think that to a certain extent is wrong.
NL-03

However, as the quote on the previous page illustrates, this is somewhat contrary to his own beliefs and that consequently 'frustrated' him as this did 'not bring [...] the real sort of knowledge sharing and information sharing that [one] would like to get out of' (NL-03). This indicates a friction between the interviewee's attitude towards sharing desirable as well as undesirable knowledge and the work environment in that country branch which favours positive knowledge sharing with colleagues from abroad. The tension in turn influences the sort of knowledge sharing the interviewee could engage in. A similar friction between a sharer and organisation as a whole was brought up by an interviewee located in the UK when asking in what instances he would be less willing to share his knowledge. The quote, as shown in Section 4.4.1, is replicated below:

Then in a different culture such as the company I worked for before here such as []. And I know I'm talking with total discretion and I shouldn't be slugging the competition, but it's a company I worked for that has a completely different culture [...]. [...] And so, like I said at the beginning, you don't reciprocate and then naturally you then realise because I am who I am this is not my environment. UK-02

What transpires from the statement above is that the interviewee's knowledge sharing decreases as there is an incongruence between his personality and the company's work environment. So again there is a mismatch between a sharer and the institution's culture. Relatedly, but on a smaller scale, a Chinese interviewee argued that if there is a tension between what the audience was wanting to listen to and the knowledge he planned to share then he 'probably would not waste [his] time' (CN-02). This suggests that if there is a mismatch between the knowledge being sought by a group and the knowledge offered by the sharer then the latter is less inclined to share the knowledge with the group. Although this last example concentrates on a friction between a group and a sharer and the first two on organisational culture and sharers, their commonality is that they all illustrate how tensions between two key categories can shape individual perceptions of knowledge sharing.

The influence of tensions on knowledge sharing is not only uncovered by interviewees but also expressed by existing literature. An example is the difficulty of reconciling whether knowledge is owned by the individual or the organisation (Kamoche, 1996, p. 226). According to the author, sharers 'want to retain control over their expertise while the firm wants to [...] lock the expertise into organizational routines' (1996, p. 226). This can create conflict between the two

entities (MacNeil, 2004, p. 97) and influence knowledge sharing (Constant, Kiesler, & Sproull, 1994, pp. 409-410). However, ownership of knowledge is not the only tension point. Samieh and Wahba (2007) studied how knowledge sharing can be influenced by tensions between individuals' choices and collective ones.

Using game theory they revealed that while individuals may be better off not to share their knowledge, this 'situation would end up suffering the consequences of a nonsharing environment in which all the employees and the company would not enjoy the benefits of their collective knowledge' (2007, p. 194). So there can be a mismatch between what is best for the individual in terms of knowledge sharing and what is best for the organisation. Taken together, these studies provide support towards the argument that key categories can be shaped by tensions and that these should be represented in a framework depicting key influences shaping individual perceptions.

In summary, the third reason why the theoretical framework is deemed ineffective compared to the newly developed holistic framework is that it neglects the interrelatedness between the categories. Findings from the interviews and research conducted by other authors indicate that there are synergies and tensions between categories that together can shape individual perceptions of knowledge sharing.

5.2.4 Summary

The first research objective is, to reiterate, to develop key categories of influences that shape individual perceptions of knowledge sharing. The literature review in Chapter 2 provided a possible set of key categories comprising of the knowledge, individual, group, organisation and environment categories.

The purpose of this section is to investigate whether the theoretical framework from the literature could apply in practice and signify key categories of influences that shape individual perceptions. The answer, based on interviewee data, is that the theoretical framework has three limitations that make it less effective in practice. The first reason is that it does not differentiate between categories that are similar in nature and ones that are different as it assigns the same status to each of the five categories. The second rationale is that the theoretical framework excludes the importance of relationships between sharers and how these can influence knowledge sharing. The third basis for deeming the theoretical framework less effective is that it does not make explicit how individual

perceptions of knowledge sharing are influenced by synergies and tensions between the categories. Therefore the theoretical framework is felt to be inadequate and too simplistic as it does not capture the key categories of influences and their interrelationships that shape individual perceptions of knowledge sharing.

The newly developed framework on the other hand that comprises of the institution, relations, sharer and knowledge key categories overcomes the three limitations discussed and is therefore considered more effective in depicting a framework that is holistic. This is achieved by 1) grouping categories of influences that are similar in nature and separating ones that are different in nature, 2) recognising the importance of relationships between the sharer and other-sharer to knowledge sharing, and 3) making explicit that the key categories are intertwined like a diamond.

Having examined how the newly developed holistic framework compares to the theoretical framework identified from the literature review, attention is now turned towards assessing the holistic framework more generally against the existing literature.

5.3 Conceptualising key categories of influences on the basis of being fundamentally different in nature

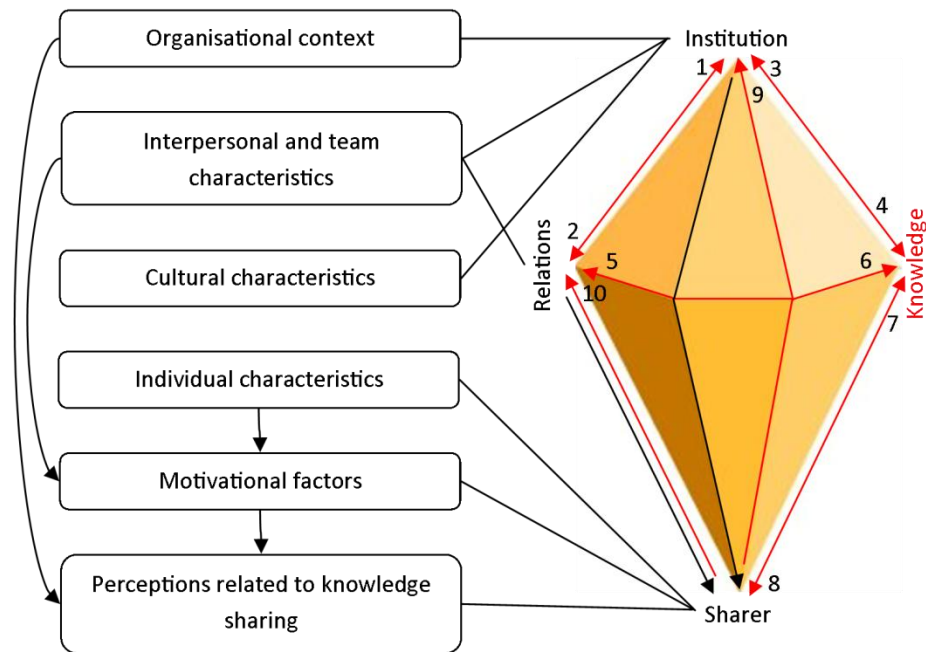
The first main finding stemming from the interviews is that individual perceptions of knowledge sharing can be shaped by four high level influences fundamentally different in nature. The first concerns collective effects that act as a united entity on individual perceptions, the second deals with relations between the sharer and one or multiple other-sharers, the third centres on the sharer's and other-sharer's own being and the fourth focuses on influences pertinent to knowledge itself. As these four influences are conceptualised as being fundamentally different in nature, they are called key categories of influences, rather than categories of influences that may or may not be different in nature.

The second main finding emanating from the interview data is that the four key categories not only shape individual perceptions independently but that two or more key categories can affect each other through synergies and tensions and that this combined outcome can influence individual perceptions of knowledge sharing. This, it is argued, creates a new and different understanding of the

knowledge sharing phenomenon from an individual perspective when comparing it to the existing knowledge sharing literature.

To exemplify this, S. Wang and Noe's (2010) framework introduced in Section 2.3.5 is drawn upon. The authors perceived knowledge sharing to be influenced by five main categories and four interrelationships between the categories. The developed holistic framework on the other hand indicates that there are only four key categories of influences but 12 interrelationships between the key categories that shape individual perceptions of knowledge sharing. The similarities and differences between the two frameworks are depicted in Figure 5.1 on the next page.

Main categories influencing knowledge sharing as perceived by Wang & Noe (2010) Key categories influencing knowledge sharing as perceived in this study



Legend:

- Relationships perceived by Wang & Noe (2010)
- Connections between Wang & Noe's categories and the developed key categories
- ↔ Additional relationships identified from this thesis:
 - 1-2 Interrelationship between institution and relations
 - 3-4 Interrelationship between institution and knowledge
 - 5-6 Interrelationship between relations and knowledge
 - 7-8 Interrelationship between knowledge and sharer
 - 9 Relationship from sharer to institution
 - 10 Relationship from sharer to relations

Figure 5.1. Comparison of S. Wang and Noe (2010) with conceptualisation of key categories of influences in this thesis.

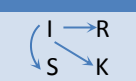


The figure above illustrates four aspects. Firstly, several categories (e.g. individual characteristics, motivational factors and perceptions related to knowledge sharing) are of similar nature as they focus on influences pertinent to the sharer and thus can be combined under one key category. Secondly, the 'interpersonal and team characteristics' category merges both relational and institutional influences, while findings from this thesis portray them as two different key influences. Thirdly, S. Wang and Noe (2010) depicted four interrelationships, of which two are recognised in the new holistic framework to span key categories while the remaining two are within the sharer key category. In addition to the two interrelationships between categories that the authors presented, the holistic

framework identifies a further 10 connections between the key categories in the diamond (see red arrows in Figure 5.1 on the previous page). Lastly, the authors' framework omitted the influence knowledge itself can have on individual perceptions. Based on the foregoing, it is argued that the developed holistic framework provides a more complete perspective of individual perceptions of knowledge sharing as it takes into account high level influences of a fundamentally different nature as well as interrelationships between the four key categories.

This is substantiated when mapping the existing meta-analyses and narrative reviews identified in Chapter 2 against the four key categories of the holistic framework. As can be seen from Table 5.1 on the next page, one out of eight reviews had categories that covered all four key categories (i.e. Cummings, 2003) while the remaining seven acknowledged some of the key categories. In addition, three of the eight reviews recognised two interrelationships and one review three interrelationships between the key categories, while the holistic framework identifies 12 interrelationships within the diamond. Therefore it is argued that the identified meta-analyses and narrative reviews have provided a limited perspective on the knowledge sharing phenomenon compared to the developed holistic framework.

Table 5.1

Meta-analyses and narrative reviews mapped against the newly developed holistic framework

Author(s)	Key categories	Institution	Relations	Sharer	Knowledge	Interrelatedness ^a
Cummings (2003)		*Environment	*Relations	*Source *Recipient	*Knowledge	
Mitton et al. (2007)		*Organisation *Communication	*Time/timing ^b *Communication	*Time/timing *Individual *Communication		I R S K
Van Wijk et al. (2008)		*Organisation	*Network		*Knowledge	I R S K
Luo and Yin (2008)		*Organisational culture *Other factor	*Other factor	*Knowledge provider/receiver	*Knowledge features	I R S K
S. Wang and Noe (2010)		*Organisation *Cultural *Interpersonal/team	*Interpersonal/team	*Individual *Motivation		
Contandriopoulos et al. (2010)				*Individual	*Nature and use of knowledge	I ↔ R S K
Meese and McMahon (2012)		*Collaboration *Decision support *Education *Measurement *Public participation	*Collaboration *Social learning *Social networks *Technology transfer		*Technology transfer	I R S K
Witherspoon et al. (2013)		*Organisational culture		*Intentions/attitudes *Gender *Rewards		

Note.* = categories identified by the author(s). ^aInterrelationships identified by the author(s) between the four key categories (I = institution; R = relations; S = sharer; K = knowledge). ^bThis category is related across two or more key categories of the holistic framework. ^cSocial networks were found to influence knowledge sharing and grouped by the authors under the organisational culture category (i.e. institutions) compared to this thesis which considers these under the relations key category.

As can be seen from the table on the previous page, Mitton et al. (2007), S. Wang and Noe (2010) and Witherspoon et al. (2013) for example omitted the knowledge key category while Van Wijk et al. (2008) did not include influences relating to the sharer key category. Cummings (2003), as stated before, is the only review identified in this thesis that addressed all four key category, of which two match the terminology one to one and the institution key category equals Cummings's environmental context. The fourth, namely sharer key category, was separated into two categories by Cummings: source and recipient. The holistic framework on the other hand argues that source and recipient are similar in nature as both revolve around the individual's attitudes, personality characteristics as well as demographic characteristics (see Section 4.3.3). Thus, the two can further be grouped under a single key category, in this thesis called the sharer key category.

The second differentiation between Cummings (2003) and the holistic framework is that the former recognised that the environment (i.e. institutions) can influence the sharer, relations and knowledge key categories, by stating that the environment 'need[s] to be examined to determine the extent to which [it] play[s] a role in affecting the micro-context variables [i.e. relational, knowledge, source and recipient contexts]' (2003, p. 32). The holistic framework goes one step further by arguing that all four key categories are intertwined and that there are an additional nine interrelationships between the key categories to the three outlined by Cummings (2003).

A similar picture to that discussed above emerges when evaluating the developed holistic framework against the 13 individual studies introduced in Section 2.4. Returning to Table 2.3 indicates that 10 out of 13 studies did not identify knowledge as a category and how this can influence knowledge sharing. These studies in turn can thus be considered less holistic than the framework developed in this thesis.

For the remaining three studies, Bi and Yu (2010, July, p. 123) grouped the individual, team and organisation as one category, arguing that it represents the subject of knowledge sharing (while knowledge is the object of knowledge sharing). Based on this classification, individuals, teams, and organisations can share knowledge. Yet this underlying assumption is not shared in this thesis where it is argued alongside other authors (e.g. Chiri & Klobas, 2010, p. 246; Yi, 2009, p. 67) that knowledge sharing is fundamentally between individuals as it depends on

the willingness of the individuals to share their knowledge with colleagues. When Bi and Yu (2010, July, p. 123) consolidated their four categories into one example however, they stated that knowledge is shared 'among individuals and between individuals and organizations', thus suggesting that individuals, not teams or organisations, share knowledge. Considering that the categorisation seems in conflict with their example, it is argued that a framework that delineates between individuals as subjects on the one hand and teams and organisations as indirect objects on the other is more effective. The holistic framework achieves this by separating the sharer from the institution key category and illustrating through interrelationships that the sharer can influence the institution key category.

In addition to conceptualising knowledge as an object and individuals, teams, and organisations as subjects, Bi and Yu's (2010, July, p. 123) third category revolved around knowledge sharing means, i.e. computer networks and communication platforms. It is similar to what two other sets of authors in Table 2.3 called technology (Bhaskar & Zhang, 2007, p. 45; N. Evans, 2012, p. 179). This is in contrast to the holistic framework developed in this thesis where technology has not emerged as a key category of influence shaping individual perceptions. Although interviewees discussed technology in relation to knowledge sharing (see Section 4.3.1.2), findings indicate that organisational culture (as a cultural-cognitive element) encourages use of technology through its open environment and leaders through normative elements guidance in relation to selecting and implementing technology. This indicates that technology itself is less of an influence on knowledge sharing compared to cultural-cognitive and normative aspects of institutions.

This is in line with one school of thought that argues that technology is an enabler for knowledge management and sharing but not the silver bullet solution in its own right (Paroutis & Saleh, 2009; Prieto, Revilla, & Rodríguez-Prado, 2009, p. 160). As Yu, Lu, and Liu (2010, p. 34) expressed it: 'Information technologies can be thought of as artefacts that reflect social values and norms. If the community encourages sharing knowledge, then members are expected to open the flow of knowledge to enact the norm. Therefore, we might expect open and organic cultures to increase the use of technology for knowledge sharing'. The other school of thought, according to Alvesson and Kärreman (2001, p. 996), Alotaibi, Crowder, and Wills (2014, p. 59) and others, is that technology is a main driver in knowledge sharing and again there is evidence to support their claim (e.g. Eze,

Gerald Guan Gan, Choon Yih, & Tan, 2013, p. 228). Based on the findings obtained in this study it is argued that the developed holistic framework emphasises more the social perspective rather than the technological one and therefore tends to subscribe to the first school of thought.

Returning to Bi and Yu's (2010, July, p. 123) study, the fourth category they argued influences knowledge sharing is the environment, which they defined as 'a variety of objective conditions'. Although there is no explicit definition of what an environment is, the authors seem to conceptualise it as the organisational environment encompassing organisational support and high level emphasis, a flat organisational structure as well as a good corporate culture (Bi & Yu, 2010, July, p. 124). Another article presented in Table 2.3 that considers the environment as a category is Borges (2013, p. 89). Yet in contrast to the first set of authors Borges (2013, p. 94) made explicit that the category focuses on the social environment within the organisational context. Furthermore the author emphasised that the social environment is different from organisational culture as the former concentrates on perceived relationships between employees while the latter focuses on formal organisational behaviour patterns. Comparing the two studies exemplifies that the word 'environment' has been conceptualised in two different ways. The first centres on institutions that comprise of cultural-cognitive and normative elements, while the latter study revolves around relationships between sharers. Applying the terminology of the holistic framework suggests that the category by Bi and Yu (2010, July, p. 124) can be grouped under the institution key category, while the social environment category by Borges (2013, p. 94) can be clustered into the relations key category.

The second study in Table 2.3 that identified the knowledge, individual and organisation categories of influences is by Westphal and Shaw (2005, pp. 77, 80). In addition to those three categories, the authors argued that acquisition integration characteristics, i.e. the degree of communication or integration, procedural fairness of target staff and 'extensive interference with the target's operations and, more importantly, its culture' (Westphal & Shaw, 2005, p. 80), can influence knowledge sharing. Translated, this indicates that the degree of integration between two institutions and their cultural-cognitive, normative and regulative elements can influence individual perceptions of knowledge sharing. Although the holistic framework developed in this thesis is based on a single organisation, it is argued that the acquisition integration characteristics category

can be grouped under the institution key category as it describes influences that shape individual perceptions as a united entity.

The third and final article that acknowledged the knowledge, individual and organisation categories in Table 2.3 is that by C. Yang and Chen (2007, p. 97). Yet as illustrated in the table, the authors did not identify other categories that they felt influence knowledge sharing, such as the relationship between sharers. This suggests that it is less holistic compared to the framework presented in this thesis.

To recapitulate, the discussion so far has concentrated on three out of 13 individual studies that have identified knowledge, individual and organisation as a category and how this can influence knowledge sharing. In addition, two articles stated that means and the environment (Bi & Yu, 2010, July, p. 123) and acquisition integration characteristics (Westphal & Shaw, 2005, pp. 77, 80) can influence perceptions of knowledge sharing.

The remaining ten articles omitted how knowledge can shape perceptions and instead concentrated on the individual and organisation categories plus one or two other categories. The technology and environment categories identified by Bhaskar and Zhang (2007, p. 45), N. Evans (2012, p. 179) and Borges (2013, p. 89) are already debated previously as they are similar to the means and environment categories described by Bi and Yu (2010, July, p. 123). Besides technology and the environment, individual articles shown in Table 2.3 concentrated on three other types of categories, namely group/team (Bock et al., 2005, p. 89; Jewels & Ford, 2006, p. 112; Michailova & Hutchings, 2006, p. 399), professional discipline (Jewels & Ford, 2006, p. 112), and country (Michailova & Hutchings, 2006, p. 399). The final paragraphs in this section compare and contrast these additional categories against the developed holistic framework, starting with the team/group category.

On a cursory glance the group/team category may seem to be identical or overlapping, yet when analysing the articles in detail the authors grouped a variety of concepts within it. For instance Bock et al. (2005, p. 89) defined the group category as 'reciprocal behaviors, relationships with others, community interest, etc.'. Further on the authors refined reciprocal relationship as an employee's desire to maintain relationships with others, suggesting that it is an individual attitude that shapes knowledge sharing. The concept of reciprocity was therefore conceptualised by the authors as a group influence, while the holistic

framework clusters it under the sharer key category (see Section 4.3.3.1) - stemming from the view that an employee's desire for reciprocity is fundamentally an individual attitude. While existing literature supports both views in that reciprocity can be a group influence (Chun Wei & Rivadavia Correa Drummond de Alvarenga, 2010, p. 606; J.-L. Hsu, Hwang, Huang, & Liu, 2011, p. 154) or an individual attitude (H. H. Chang & Chuang, 2011, p. 12; Chiu, Hsu, & Wang, 2006, p. 1877), it is argued that the concept can be clustered into either the sharer key category or the institution key category depending on whether individuals desire reciprocity (an attitude) or whether a group (an institution) has a shared understanding or prescriptive guidance on reciprocating knowledge sharing. This indicates that the developed holistic framework can accommodate multiple perceptions by being able to integrate reciprocity both into the sharer and institution key categories, depending on whether it is an attitude or institutional influence.

In addition to Bock et al.' (2005, p. 89) concepts of reciprocity within the group/team category, Jewels and Ford (2006, p. 111) depicted team success, value of knowledge, personal success and expectations of sharing concepts as part of the project team category. Looking at the concepts from the holistic framework perspective however suggests that team success, personal success and expectation of sharing represent individual attitudes as the authors defined the former as 'individuals [being] motivated towards sharing knowledge and experiences if they believe that it will contribute to team success' and referred to the latter two as beliefs about one's own performance and beliefs about team members' expectations (Jewels & Ford, 2006, pp. 108, 114-115). Using the term 'individuals ... believe' indicates an attitude of one person, rather than an influence emanating from the team (see Section 4.3.3.1). On the other hand, value of knowledge was conceptualised by the authors as the project team valuing knowledge of individuals (Jewels & Ford, 2006, p. 109), suggesting that this is a united entity that, as a whole, influences individual perceptions of knowledge sharing and thus can be considered an institutional influence.

While Bock et al. (2005, p. 89) discussed reciprocity and Jewels and Ford (2006, p. 111) success, value and expectation concepts, Michailova and Hutchings (2006, p. 391) focused on the in-group affiliation concept. This concept, in short, concerns a group of people that have a mutual interest and look after each other's long term welfare and success.

From the authors' discussion, and substantiated by other authors such as Marques, Abrams, and Serodio (2001, p. 437), it emerges that in-group affiliation is a collective effect that influences individual perceptions. This in turn suggests that in-group affiliation can be grouped under the institution key category of the holistic framework.

Having discussed the group/team category, the next additional one presented in Table 2.3 is the professional discipline category raised by Jewels and Ford (2006, pp. 111-112). Within that category, the authors grouped two concepts, namely available resources and expectations of sharing. Yet similar to the team and personal success concepts described two paragraphs ago, Jewels and Ford (2006, p. 114) investigated individual beliefs about available resources and beliefs about expectations from the professional discipline. Again, this indicates an exploration of individual attitudes, rather than how professional practices can shape individual perceptions. Thus the two concepts can be clustered into the sharer key category of the developed holistic framework.

The final outstanding category shown in Table 2.3 is the country category by Michailova and Hutchings (2006, p. 388). In their article the authors compared China and Russia and how their national culture can influence knowledge sharing. Besides arguing that the two national institutions exhibit vertical collectivism, which is a normative element (Alexander, 2012, p. 796; Michailova & Hutchings, 2006, p. 393), the authors stated that both China and Russia lack a sufficient regulatory environment which, according to W. R. Scott (2008a, p. 428), is a regulative element of institutions. Combined, this suggests that Michailova and Hutchings (2006, p. 388) were in part exploring normative and regulative elements within their country category, which can be grouped under the institution key category of the holistic framework.


Table 5.2 on the next two pages illustrates how the categories of the 13 individual studies can be reconceptualised according to the holistic framework.

Table 5.2

13 individual studies mapped against the newly developed holistic framework

Author(s)	Key categories	Institution	Relations	Sharer	Knowledge
Bhaskar and Zhang (2007, p. 45)	Technology ^a	X ^b		X	
Bi and Yu (2010, July, p. 123)	Subjects of knowledge sharing \Rightarrow	X	\xrightarrow{c}	X	X
	Means \dashrightarrow	X			
	Environment \rightarrow	X			
Bock et al. (2005, p. 89)	Group \rightarrow	X		X	
Borges (2013, p. 89)	Environment \rightarrow	X	X	X	
N. Evans (2012, p. 179)	Technology \dashrightarrow	X		X	
Hauck (2005, p. 11)		X		X	
Ismail et al. (2009, p. 35)		X		X	
Jewels and Ford (2006, p. 112)	Team \rightarrow	X		X	
	Professional discipline \rightarrow				
Michailova and Hutchings (2006, pp. 398-399)	Group \rightarrow	X		X	
	Country \rightarrow				

(continued on the next page)

Author(s)	Key categories	Institution	Relations	Sharer	Knowledge
Author(s)	Author(s) additional category				
Nita (2008)		X		X	
Rahab et al. (2011, p. 120)		X		X	
Westphal and Shaw (2005, pp. 77, 80)	Acquisition integration characteristics 	X		X	X
C. Yang and Chen (2007, p. 97)		X		X	X

Note. ^aTechnology is not a key category as the holistic framework takes a social perspective, rather than a technology centred one (see explanation in the preceding section).

^bCategories identified by the authors that can be mapped directly to the four key categories of influences. ^cAdditional categories identified by the authors that can be mapped onto one or more of the four key categories identified in this thesis.

Viewing Table 5.2 on the previous two pages consolidates three main findings that emerge when evaluating the holistic framework against other individual studies discussed in the literature review. The first is that the holistic framework developed seems to provide sufficient flexibility to accommodate a wide range of categories and underlying concepts discovered by other studies. This indicates that the four key categories have a high level of abstraction that can be applicable beyond the findings from this study. The second is that none of the 13 individual studies evaluated previously acknowledged that perceptions of knowledge sharing can be shaped by four categories fundamentally different in nature. The majority of the studies identified the institution and sharer key categories, while only three classified knowledge as a category and only one study made explicit how relations can influence knowledge sharing. The third is that the holistic framework depicts a social perspective on knowledge sharing, as interviewees described technology as an enabler for knowledge sharing but that organisational culture and leadership are prevailing in selecting, implementing and using technology.

Based on the foregoing discussion it is argued that the framework developed in this thesis provides a more holistic perspective as it not only focuses on institutions and sharers, but also on how knowledge and relations can shape individual perceptions of knowledge sharing. Furthermore, the holistic framework depicts that the four key categories not only shape individual perceptions in isolation but that the key categories are intertwined like a diamond and that they together can influence knowledge sharing.

5.4 The holistic framework in the view of varying contexts

The previous section examines the holistic framework and compares it to existing literature. The outcome of that analysis, it is argued, is that the framework advances the understanding of what key categories of influences shape individual perceptions of knowledge sharing. To reiterate, the key categories are called institution, relations, sharer and knowledge; all four are intertwined and together can shape individual perceptions.

The literature, including Witherspoon et al. (2013), however identified that key influences may vary between contexts. In their case, the context was studies conducted in collectivistic versus individualistic cultures. The context in this thesis is four branches of a of a single IT services organisation that are located in China, the Netherlands, the UK and the US. Considering that the developed framework provides a more holistic perspective on individual perceptions, a logical extension is to examine whether there are synergies (West & King, 1996, p. 156) or divergences between the four contexts (see research objective two).

Findings in Chapter 4 suggest that the institution, sharer and knowledge key categories are not influenced by contextual differences while the relations key category is context-specific. As Table 4.3 illustrated, the relations key category more strongly influences interviewees located in the Chinese and US branches and to a lesser extent UK interviewees. The majority of interviewees located in the Netherlands however were divided on whether the relations key category has an influence on their knowledge sharing or not. Considering the different emphasis among interviewees based in the four country branches it is argued that the relations key category is susceptible to contextual differences.

Reverting back to Table 5.1 shows that several meta-analyses and narrative reviews covered some of the key categories (e.g. Van Wijk et al., 2008; S. Wang & Noe, 2010) and one all four of them (Cummings, 2003) but that they did not differentiate between China, the Netherlands, the UK and the US. At the same time however there have been several separate studies conducted in these countries that corroborate the argument that the institution, sharer and knowledge key categories can shape perceptions of knowledge sharing. Among them are Fryxell and Lo (2003, pp. 48, 59) who investigated the institution, sharer and knowledge key categories and how these influenced Chinese managers' actions such as sharing their knowledge about environmental issues with others.

As to the Netherlands, Boer et al. (2011, pp. 4, 9) not only identified that the institution and sharer key categories can influence sharing, but also that knowledge quantity and ownership can affect it. Relatedly, Howell and Annansingh (2013) in their UK study of higher education institutions not only considered the institution and sharer key categories but also acknowledged how the knowledge key category influenced knowledge sharing (2013, p. 37). Lastly, Nita (2008) uncovered in a US study that managers' and consultants' knowledge sharing was influenced by the institution and sharer key categories.

While there is a substantiation of the findings by prior literature in that the institution, sharer and knowledge key categories can be applicable across the four contexts, the findings obtained relating to the relations key category, and specifically the physical, cultural and social relations, seem somewhat in contrast at first with the overall existing literature. This is because it generally emphasises the importance of physical (Magnier-Watanabe & Senoo, 2008, p. 32), cultural (K. R. Cho & Lee, 2004, p. 439) and social (Lam & Lambermont-Ford, 2010, p. 55) relationships in shaping knowledge sharing. Yet when examining studies conducted in the Netherlands or the UK, a different picture emerges.

In terms of physical co-location, a Dutch study reported that six out of 12 organisations interviewed felt that effective knowledge sharing is 'only possible when the whole team is together in one place' (Aydin, de Groot, & van Hillegersberg, 2010, p. 335). These mixed findings are in line with an earlier study that uncovered that co-location of R&D staff in the Netherlands was almost significantly related to knowledge dissemination (Song, Berends, Van Der Bij, & Weggeman, 2007, pp. 61-62), indicating that survey participants were somewhat divided on whether physical co-location influenced their knowledge sharing. Thus the discrepant findings from the interviews in this thesis reflect the differing results obtained by other studies in the Netherlands.

In regards to cultural relations, prior literature has predominantly concentrated on cultural distance between alliances or joint ventures rather than regarding it from an individual perspective. Despite the different foci of analyses, one of the studies on UK international alliances found that cultural distance does not significantly influence alliance performance (Glaister & Buckley, 1999, p. 139), of which knowledge sharing, according to Hedlund (1994, as cited in Saxton, 1997, p. 447), can be considered one aspect. Another study on the other hand concluded that cultural distance does influence knowledge sharing across their particular

case studies, which included the UK (Makela, Kalla, & Piekkari, 2007, p. 15). So similar to the interviewees at ITSC in the UK having varying viewpoints in regards to cultural relations influencing their knowledge sharing, UK studies returned inconclusive findings. In contrast, Dutch ITSC interviewees did not perceive cultural differences to influence their knowledge sharing, which may have been due to increased awareness that cultural differences can exist (Aydin et al., 2010, p. 344).

Concerning social relations, results from a UK study suggest that informal socialisation influences knowledge sharing (B. Lawson, Petersen, Cousins, & Handfield, 2009, p. 166). Their results however are only partially supported by findings in this thesis where interviewees located in the UK had divided opinions as to whether informal socialisation influences their knowledge sharing. Although no Dutch studies can be located that have concentrated on socialisation and knowledge sharing specifically, related research indicates that Dutch planners working on land use and transport strategy developments reported the value of socialisation to internalise shared knowledge (Te Brömmelstroet & Bertolini, 2010, p. 95).

Taken together, it seems that although general literature emphasises the importance of physical, cultural and social relationships between the sharer and other-sharer (e.g. K. R. Cho & Lee, 2004, p. 439; Lam & Lambermont-Ford, 2010, p. 55; Magnier-Watanabe & Senoo, 2008, p. 32), examining literature related to the Netherlands and the UK provides mixed results on whether physical and cultural relations influence knowledge sharing. Yet this is in line with the findings obtained by interviewing employees within a single IT services organisation located in the Dutch and UK branches. This suggests that the general emphasis placed on physical and cultural relations may not be as uniformly important to sharers in these two countries compared to sharers in other countries. In terms of social relations, the findings of this thesis are diverging from other research in that interviewees located in the Netherlands and the UK had varying viewpoints of the effect of social relations on their knowledge sharing, while literature emphasises how social relationships influence sharing.

5.5 Summary

The purpose of this chapter is to discuss the findings from this study with existing literature. This is achieved by firstly evaluating the developed holistic framework against the five categories of influences (i.e. knowledge, individual, group, organisation and environment) theoretically derived from the literature review. The second section (Section 5.3) then assesses the new framework against the eight meta-analyses and narrative reviews, which is followed by a comparison to the 13 individual studies discussed in the literature review. Having focused on the first research objective in that section, Section 5.4 turns the attention towards examining to what degree the holistic framework is susceptible to contextual differences and how this relates to existing literature.

The evaluation in Section 5.2 indicates that the framework developed in this thesis is more effective compared to the theoretical framework identified from the literature review as it provides a more holistic perspective. While the theoretical framework does not differentiate between categories that are similar and different in nature and omits the importance of relationships between sharers as well as provides a simplistic view as synergies and tensions arising from interrelationships between categories are not acknowledged, the newly developed holistic framework overcomes these three main limitations. That is, it groups categories of influences that are similar in nature while separating categories that are different in nature. In addition, the holistic framework recognises the importance relationships between sharer and other-sharer have in shaping knowledge sharing. Furthermore, the holistic framework makes explicit that the four key categories of influences are intertwined like a diamond and that their combined effect can shape individual perceptions. Based on the foregoing it is argued that the theoretical framework identified from the literature is only marginally effective in practice.

Further to comparing the holistic framework against the theoretical framework from the literature review, the holistic framework is assessed against the eight meta-analyses and narrative reviews first presented in Section 2.3. Table 5.1 illustrates that one out of eight reviews had categories that covered all four key categories (i.e. Cummings, 2003) while the remaining seven acknowledged some of the key categories. In addition, three of the eight reviews recognised two interrelationships and one review three interrelationships between the key categories, while the holistic framework identifies 12 interrelationships overall

within the diamond. Therefore it is argued that the identified meta-analyses and narrative reviews have provided a limited perspective on the knowledge sharing phenomenon compared to the developed holistic framework that depicts four key categories and 12 interrelationships.

A similar picture emerges when evaluating the holistic framework against the 13 individual studies introduced in Section 2.4. Again mapping the categories identified by the authors against the four key categories of the holistic framework in Table 5.2 exemplifies that none of the 13 studies contained categories that fall into all four key categories. Yet the assessment provides two further insights. The first is that the holistic framework developed seems to provide sufficient flexibility to accommodate a wide range of categories and underlying concepts discovered by other studies. This indicates that the four key categories have a high level of abstraction that can be applicable beyond the findings from this study. The second is that the holistic framework depicts a social perspective on knowledge sharing, as interviewees described technology as an enabler for knowledge sharing but that organisational culture and leadership are prevailing in selecting, implementing and using technology. This is in contrast to Bhaskar and Zhang (2007, p. 45), Bi and Yu (2010, July, p. 123) and N. Evans (2012, p. 179) who all stated that technology is a category by itself and that it influences knowledge sharing. Thus the underlying perspective that this holistic framework takes is a social perspective.

Having integrated the findings for the first research objective with existing literature, Section 5.4 then focuses on evaluating the degree the holistic framework is susceptible to contextual differences and how this relates to prior literature. The assessment indicates that the findings of this study are in line with prior research in China, the Netherlands, the UK and the US in that the institution, sharer and knowledge key categories can be applicable across the four contexts. In terms of the relations key category, while general literature emphasises the importance of physical (Magnier-Watanabe & Senoo, 2008, p. 32), cultural (K. R. Cho & Lee, 2004, p. 439) and social (Lam & Lambermont-Ford, 2010, p. 55) relationships in shaping knowledge sharing, other research undertaken in the Netherlands and the UK provide mixed results on whether physical and cultural relations influence knowledge sharing. Yet this is in line with the findings obtained in this study. In regards to social relations, the findings of this thesis are diverging from other research in that interviewees located in the Netherlands and the UK

had varying viewpoints of the effect of social relations on their knowledge sharing, while literature emphasises how social relationships influence sharing. Overall, this suggests that the findings of this study coincide with prior literature in that the institution, sharer and knowledge key categories are not subject to contextual differences while the relations key category is context-specific.

In summary, while some of findings substantiate existing literature other findings from this thesis provide a new and different perspective on the knowledge sharing phenomenon. The purpose of the next and final chapter (Chapter 7) is therefore to draw out how this study can 'increas[e] our knowledge of knowledge' (Rutten, 2003, p. 2).

6 Conclusion

6.1 Contributions to knowledge

Although there is a large volume of literature in regards to knowledge sharing, it does not seem that the field has yet arrived at a consensus as to the key categories of influences that shape knowledge sharing. However, moving towards a consensus is important in order to create a shared understanding (Smylie, 2011, p. 182) so a rigorous debate (Beesley & Cooper, 2008, p. 50) about the phenomenon can occur and guidance for knowledge sharing practices can be created (Wickramasinghe & Widyaratne, 2012, p. 216).

Furthermore, authors have omitted in their knowledge sharing frameworks either how context (such as company branches located in different countries) can influence their key influences (e.g. Luo & Yin, 2008; S. Wang & Noe, 2010) or have predominantly limited their framework to a single context (e.g. Zhang et al., 2010, p. 109). Yet assessing the emerging key categories of influences in multiple contexts makes it not only possible to 'capture synergistic effects' (West & King, 1996, p. 156) but also to identify divergences between them. These synergies and divergences can then be used 'to "map out" the range and mix of knowledge-sharing situations that arise within and between national contexts, and to use such findings to guide research to the key variables' (Chow et al., 2000, p. 91).

Given the rather fragmented picture in the existing literature of what key influences shape knowledge sharing and the limited context in which the frameworks to date have been assessed, the aim of this thesis is to develop a holistic framework that depicts key categories of influences that shape individual perceptions of knowledge sharing within an organisational setting so a more advanced understanding of the knowledge sharing phenomenon can be generated.

In Chapter 2 this aim was translated into the following two research objectives:

- 1) Develop key categories of influences that shape individual perceptions of knowledge sharing; and
- 2) Explore if the emerging key categories of influences are susceptible to contextual differences.

In order to answer the two research objectives, a case study strategy of inquiry was selected in Chapter 3, along with a qualitative interview research method and

ITSC as the research setting. To analyse the total of 24 interviews conducted in the Chinese, Dutch, UK and US branches of ITSC, an analysis technique called constant comparison was chosen, which provides guidelines on the abstraction process from data to concepts to categories (see Sections 3.8 and 3.9).

The findings obtained by executing the constant comparison method were presented in Chapter 4. In regards to research objective one, they indicate that four key categories of influences can shape individual perceptions of knowledge sharing and that each is fundamentally different in nature. The first is concerned with collective influences, the second with relationships between sharers, the third with influences pertinent to sharers and the fourth with aspects associated with knowledge itself. As to research objective two, findings suggest that the institution, sharer and knowledge key categories are not susceptible to contextual differences while the relations key category more strongly influences interviewees located in the Chinese and the US branches compared to the UK colleagues. As to Dutch interviewees, the majority was divided on whether the relations key category has an influence on their knowledge sharing.

In short, research objective one is successfully fulfilled by identifying four key categories of influences and research objective two by detecting synergies between the four country branches for three key categories and variations for the fourth key category. Combined, this achieves the overall research aim of developing a holistic framework that depicts key categories of influences that shape individual perceptions of knowledge sharing within an organisational setting. Considering that the overall aim and the two research objectives are successfully met, the methodological approach taken seems correct retrospectively.

Besides answering the two research objectives, another dominant theme that emerged from the findings in that the four key categories of influences not only shape individual perceptions directly, but that all of them are intertwined like a diamond and that this combined effect can shape knowledge sharing.

Embedding the findings from this research into existing literature was the focus of the previous chapter (Chapter 5) and illustrates four main aspects. Firstly, comparing the newly developed holistic framework with the theoretical framework (consisting of the knowledge, individual, group, organisation and environment categories) identified from the literature review suggests that the

former is more effective as it groups categories of influences that are similar in nature and separates ones that are different in nature, recognises the importance of relationships between the sharer and other-sharer to knowledge sharing, and makes explicit that the key categories are intertwined like a diamond. The theoretical framework on the other hand omits the three facets and is therefore deemed less effective in practice compared to the holistic framework.

Secondly, the eight identified meta-analyses and narrative reviews have provided a limited perspective on the knowledge sharing phenomenon as they predominantly concentrated on two to three key categories compared to the developed holistic framework that has identified four key categories. The only review that covered all four key categories was Cummings (2003). Then again, the author acknowledged three interrelationships between categories while the holistic framework argues that there 12 interrelationships overall. The outcome was similar to the 13 individual studies examined in Section 5.3 where none of them discussed all four key categories. Thus the developed framework in this thesis is considered more holistic as it takes into account more than just the institution, sharer and knowledge categories predominantly discussed in prior literature as well as the interrelationships between the four key categories.

The third main aspect transpiring from the evaluation is that the holistic framework developed seems to provide sufficient flexibility to accommodate a wide range of categories and underlying concepts discovered by other studies. For instance acquisition integration characteristics did not emerge from the findings in this study but in research conducted by Westphal and Shaw (2005, pp. 77, 80). Examining the category described by the authors reveals that it revolves around the degree of integration between two institutions and that their cultural-cognitive, normative and regulative elements can influence individual perceptions of knowledge sharing. Yet the acquisition integration characteristics category can be grouped under the institution key category as it describes influences that shape individual perceptions as a united entity. This indicates that the four key categories have a high level of abstraction and can be applicable beyond the findings from this study.

The fourth aspect surfacing by embedding the findings into literature is that the outcomes of this study are in line with prior research in China, the Netherlands, the UK and the US which shows that the institution, sharer and knowledge key categories can be applicable across the four contexts.

In terms of the relations key category, the mixed findings obtained in the Dutch and UK branches are in line with research undertaken in the Netherlands and the UK although the general literature emphasises the importance of physical (Magnier-Watanabe & Senoo, 2008, p. 32), cultural (K. R. Cho & Lee, 2004, p. 439) and social (Lam & Lambermont-Ford, 2010, p. 55) relationships in shaping knowledge sharing. Overall, this suggests that the findings of this study coincide with prior literature in that the institution, sharer and knowledge key categories are not subject to contextual differences while the relations key category is context-specific.

Examining the four aspects discussed previously leads to several new insights which are now converted into contributions to knowledge. The first contribution is that the theoretical framework, consisting of the knowledge, individual, group, organisation and environment categories, has a limited effectiveness in practice as a grouping framework for key influences that shape individual perceptions of knowledge sharing. It is considered to be limited as the theoretical framework assigns the same status to each of the five categories, omits the importance of relationships between the sharer and other-sharer and excludes how knowledge sharing between individuals is influenced by synergies and tensions between the categories. Despite the interview findings suggesting that the theoretical framework is only marginally effective as a framework for key influences shaping individual perceptions, it seems that none of the existing studies to date have carried out a study to establish this (see Section 2.4). Due to this it is argued that the above constitutes a contribution to knowledge.

The second contribution to knowledge, based on this case study, is a holistic framework depicting key categories of influences that comprises of four key influences, namely the institution, relations, sharer and knowledge key categories. Each of the four key categories is different in nature as the first concentrates on influences stemming from a united entity, the second on influences arising from relationships between the sharer and other-sharer, the third on influences emanating from attitudes and characteristics of the sharer or other-sharer and the fourth on influences originating from knowledge itself. While almost all meta-analyses and narrative reviews and all 13 individual studies identified in the literature review discussed only two to three key categories, the holistic framework proposes that there are four key categories of a fundamentally different nature that can influence knowledge sharing.

As this categorisation has not been proposed in a priori literature, yet seems effective in classifying influences, it is argued that the preceding constitutes a second contribution to knowledge.

The third contribution is that knowledge sharing from an individual perspective is not only influenced directly by the institution, relations, sharer and knowledge key categories but also by how the key categories are intertwined like a diamond. Based on the literature review undertaken in Chapter 2 and elaborated on in Chapter 5, it was illustrated that research to date has focused on a few relationships compared to the holistic framework that proposes 12 interrelationships. This, it is argued, provides an evolved view that indicates that the knowledge sharing phenomenon from an individual perspective is more complex than currently portrayed by the literature.

The fourth contribution to knowledge is that frameworks can be susceptible to contextual differences, including the holistic framework. While the institution, sharer and knowledge key categories are not subject to contextual differences, the relations key category is context-specific based on interviewee data. In particular, the relations key category is relevant in the Chinese and US branches, but only partially supported by interview data in the UK branch and inconclusive in the Dutch branch. The rationale for arguing that it is a contribution to knowledge is that existing research has either omitted contextual differences or has based their framework on one, two or three contexts (see Section 2.6) compared to this study that has taken into account four different contexts, i.e. country branches of a single IT services organisation, each with a unique characteristic and country location (see Section 3.5).

Focusing on the contributions to knowledge emanating from the holistic framework lead to the principal argument that is made in this thesis, which is that knowledge sharing from an individual perspective is a holistic phenomenon that not only is influenced directly by the institution, relations, sharer and knowledge key categories but also by the interrelationships between these four key categories and that key categories can be susceptible to contextual differences. This, it is argued, is a different perspective to that of existing studies identified in this thesis that have investigated some of the key categories and/or interrelationships. This different perspective has four theoretical implications, discussed next.

6.2 Theoretical implications

The principal argument set out in the previous page can be converted into a theoretical contribution, which then provides the basis for discussing the theoretical implications. The theoretical contribution is that in order to better understand the knowledge sharing phenomenon from an individual perspective, four key categories of different nature should to be taken into account and that these can, directly and through their interrelationships, influence individual perceptions of knowledge sharing.

Given the importance to move towards a consensus about the key influences that shape knowledge sharing (see Section 1.1), future research could examine whether their emerging categories are fundamentally different to the ones identified in this thesis. For example, two sets of authors introduced in the literature review (Sections 2.4 and 2.3.1), Bi and Yu (2010, July, p. 123) and Cummings (2003), both utilised the word environment in their articles. Bi and Yu (2010, July, p. 123) argued that the knowledge sharing process comprises of four aspects, including the knowledge sharing environment. Cummings (2003, p. 1) stated that the broader environment can affect successful knowledge-sharing implementations. At first this might suggest that the environment is a key category. Yet examining the articles in depth reveals that the environment is portrayed as a united entity that influences knowledge sharing and thus can be grouped under the institution key category. Further research might reveal additional key categories that can be added to the framework developed in this thesis. Through these incremental steps, the vision of moving towards a consensus can be realised (Neches et al., 1991, p. 39).

The second theoretical implication is that the holistic framework can provide an avenue to categorise existing studies and indicate areas for further research. As the literature review uncovered, the knowledge sharing field has been fragmented and only a few studies, such as S. Wang and Noe (2010, p. 116), have endeavoured to synthesise the areas of research. However, as illustrated in Figure 5.1, S. Wang and Noe (2010, p. 116) concentrated on the institution, relations and sharer key categories and omitted the knowledge key category. In addition, they acknowledged two of the 12 interrelationships that can exist between the key categories. The holistic framework could therefore be seen as a progressed version of Wang and Noe's (2010, p. 116) narrative review that, similar to these authors, outlines how individual studies relate to the overall knowledge sharing

field in regards to key influences and which interrelationships call for further research. For instance the meta-analysis conducted by Witherspoon et al. (2013) concentrated on the institution and sharer key categories and examined the institution – sharer interrelationship (see Table 5.1). The study can then be compared to other studies and from this an overview of more frequently investigated key categories and interrelationships can be obtained. This will in turn indicate valuable areas for further research. Based on Table 5.1 for instance, additional studies could investigate the knowledge key category and how the knowledge key category is interrelated to the relations key category.

The third theoretical implication relates to the one above, in that the holistic framework could not only be utilised to categorise studies but also to more efficiently locate existing studies that have investigated the knowledge sharing phenomenon from an individual perspective. By classifying articles according to the key categories and interrelationships they examined, other researchers can more promptly identify relevant literature for their purposes. As Section 2.2 exemplified, the ABI/Inform Complete, EBSCO and Web of Science databases listed a large volume of documents relating to knowledge sharing. Extracting relevant articles relating to effects emanating from the relations key category for example is to date a time consuming task due to the variety of terminology used by authors. By inserting document keywords such as ‘institution key category’ or ‘knowledge key category - relations key category interrelationships’ the retrieval process could be made more efficient due to the convergent vocabulary.

The above suggestion has an additional benefit for the fourth theoretical implication in that studies mapped according to the holistic framework can then be drawn upon more efficiently to evaluate their synergies and divergences and through this obtain a more nuanced understanding of the knowledge sharing phenomenon. For instance Chow et al. (2000) and Hutchings and Michailova (2006) examined how national culture, and specifically in-group versus out-group membership, can influence knowledge sharing. As discussed in Section 2.6, the first set of authors was executing a study in China and the US while the latter set of authors examined the Chinese and Russian context. Comparing the findings for China suggests that there is synergy between the two articles as they both indicate that more knowledge is shared when the other-sharer is considered to be within the personalised network of the sharer than if the other-sharer falls outside that network. Although one might observe that this comparison could

have been carried out without the holistic framework, it is argued that applying document keywords according to the holistic framework brings together separate studies more efficiently and through this enables a more rigorous debate, as wished for by Beesley and Cooper (2008, p. 50) (see Section 1.1).

6.3 Practical implications

In addition to four theoretical implications stemming from the holistic framework developed in this thesis, there are two practical implications for organisations and institutions engaged in knowledge management, and more specifically knowledge sharing.

The first practical implication is that organisations that intend to implement or have established a knowledge sharing strategy but encounter obstacles can utilise the holistic framework to structure their strategy or audit processes. Firms that would like to implement a knowledge sharing strategy can draw a diagram with the four key categories and the 12 interrelationships (like the diamond in Figure 5.1) and then design approaches that take into account not only the common institution and sharer key categories, but also how the relations and knowledge key categories can be fostered and managed. This could take the form of establishing social activities or asking employees to sign a companywide non-disclosure statement so knowledge can be shared more freely. Secondly the diagram makes visual that an initiative focusing on one key category might affect other programmes in other key categories as they are intertwined and that this needs to be explored before implementing a new initiative. Organisations facing difficulties could utilise the diagram with the four key categories and 12 interrelationships to structure their audit process. As symptoms in one key category might have underlying root causes in other key categories or stem from interrelationships, the holistic framework can provide a systematic approach where each key category and each interrelationship can be progressively explored and the findings subsequently structured according to the key categories and interrelationships.

The second practical implication arising from the holistic framework is that contextual differences can influence individual perceptions of knowledge sharing. Therefore, whether organisations set up a new knowledge sharing strategy or update their existing strategy, this strategy should be sufficiently flexible to accommodate varying contexts in which employees are working.

As Chapter 4 illustrated, the relations key category more strongly influences interviewees located in the Chinese and US branches and to a lesser extent interviewees based in the UK. Dutch interviewees on the other hand had differing opinions as to whether relations influence their sharing. This suggests that a knowledge sharing strategy should emphasise and encourage relationship building in some countries and to a lesser extent in other countries. In short, a one-size-fits-all global knowledge sharing strategy seems, based on findings in this thesis, less advisable.

6.4 Limitations

The strategy of inquiry selected in Chapter 3 is, to reiterate, a case study strategy. As G. Thomas (2011, p. 3) stated, case studies are generally associated with an intensive and detailed analysis of a phenomenon such as an individual, institution or country. This had led literature to frequently describe case studies 'as the weak sibling among social science methods' due to its subjectivity and limited generalizability (Taylor, Sinha, & Ghoshal, 2006, p. 28). However, Remenyi (2012, p. 129) reasoned that the question is not whether the findings from a case study are generalizable or not, but to which degree they are. In line with Remenyi's (2012, p. 129) claim, it is argued that the limitation of this thesis is that it is based on a single organisation and within that on 24 interviews in total, yet that the overall holistic framework could extend beyond the organisation from which it is developed. While the concepts and categories grouped under each of the four key categories are likely to vary from study to study, the four key categories themselves could be applicable to multiple research settings, as illustrated in Section 5.3. Nonetheless, the findings are based on a single case study which could be affected by the culture of the organisation, the influence of headquarters and other unique factors specific to the study and therefore the suggestion that the framework is applicable to all organisations cannot and is not made.

The second limitation of this study is that the knowledge sharing phenomenon has been examined from the perspective of individuals, hence the frequently used terms 'individual perceptions of knowledge sharing' or 'knowledge sharing from an individual perspective'. However, as Section 2.3.9 illustrated, meta-analyses and narrative reviews have explored knowledge sharing not only from an individual perspective but also from an organisational, inter-organisational and collective perspective. The rationales behind using an individual level of analysis in this study are, as elaborated on in Section 2.5, both theoretical and pragmatic.

That is, this thesis and some authors (e.g. Chiri & Klobas, 2010, p. 246; Yi, 2009, p. 67) maintain that knowledge sharing is an activity that takes place fundamentally between individuals and should therefore be investigated at an individual level of analysis. Pragmatically, studying knowledge sharing from a team, organisational or inter-organisational level would require, according to Mohammed et al. (2009, p. 324), access to and cooperation of the majority of members in that team, or employees in the organisation(s). Resource and time constraints however have encouraged this research to study the knowledge sharing phenomenon at the individual level. Despite the justifications given above, knowledge sharing can be investigated from other levels of analysis and this might suggest that the holistic framework is also relevant at other levels of analysis.

Furthermore, S. Wang and Noe (2010, p. 127) argued that knowledge sharing not only should be examined from a variety of different levels of analysis, the phenomenon should be studied 'using multilevel analysis [...] to appropriately examine knowledge sharing dynamics'. Quigley et al. (2007) exemplified this idea by combining both individual and dyadic levels of analysis. Thus the limitation of this thesis is that it is based on a single level analysis.

The third potential limitation concentrates on what some authors call 'cooperation bias' (Heath, Madden, & Martin, 1998, p. 425; Witherspoon et al., 2013, p. 251). This means that employees that share knowledge are willing to be interviewed about the subject. However, Witherspoon et al. (2013, p. 251) were not aware of studies that have investigated individuals that wanted to hoard knowledge or are uncooperative when it comes to knowledge sharing. This bias may also have influenced the interviewees participating in the present study. On the other hand research conducted by Heath et al. (1998, p. 425) to explicitly investigate this issue using lifestyle, personality and socio-demographic factors about intoxication suggest that the cooperation bias effect was minimal. Nevertheless, cooperation bias may have influenced the findings in this study.

The fourth limitation is that the literature review and other references to academic literature have concentrated on documents written in the English language. Considering that this study has been executed not only in two English speaking countries (i.e. the UK and the US) but also in China and the Netherlands, academic literature in the official language of these countries might only partially support or challenge the findings and as such lead to a limitation of this thesis.

6.5 Future research directions

Based on the foregoing discussion there are at least seven directions that future research can take:

1. Assess the developed holistic framework in other contexts to explore further synergies and divergences;
2. Develop the holistic framework by introducing new key influences that are different in nature to effects stemming from united entities, relationships between the sharer and other-sharer, the sharer or other-sharer's attitudes and characteristics and knowledge itself;
3. Categorise existing studies according to the holistic framework in order to more efficiently identify under-researched key categories or interrelationships;
4. Compare and contrast existing separate knowledge sharing studies so a more nuanced understanding of the knowledge sharing phenomenon can be generated;
5. Utilise other strategies of inquiry to triangulate whether the holistic framework seems valid;
6. Approach the research from different levels of analysis or combine multiple levels in order to advance the knowledge sharing field; and
7. Include existing research data stemming from non-English documents.

As the list above exemplifies, there is a range of avenues that can be explored based on the proposed holistic framework and as such there are numerous opportunities for further research within the knowledge sharing field.

References

- Ackland, R. (2013). *Web Social Science Concepts, Data and Tools for Social Scientists in the Digital Age*. London, United Kingdom: SAGE Publications Ltd.
- Adler, E. S., & Clark, R. (2008). *How It's Done: An Invitation to Social Research*. Belmont, United States: Thomson Learning Inc.
- Agle, B. R., & Caldwell, C. B. (1999). Understanding research on values in business: a level of analysis framework. *Business and Society*, 38(3), 326-387.
- Ahmad, N., & Daghfous, A. (2010). Knowledge sharing through inter-organizational knowledge networks: Challenges and opportunities in the United Arab Emirates. *European Business Review*, 22(2), 153-174. doi: 10.1108/09555341011023506
- Ahmed, P. K., Lim, K. K., & Loh, A. Y. E. (2002). *Learning Through Knowledge Management*. Oxford, United Kingdom: Butterworth-Heinemann.
- Aizpurúa, L. I., Saldaña, P. E. Z., & Saldaña, A. Z. (2011). Learning for sharing: an empirical analysis of organizational learning and knowledge sharing. *International Entrepreneurship and Management Journal*, 7(4), 509-518. doi: 10.1007/s11365-011-0206-z
- Ajzen, I. (1991). The theory of planned behavior. *Organizational Behavior and Human Decision Processes*, 50(2), 179-211. doi: 10.1016/0749-5978(91)90020-t
- Aktharsha, U. S. (2011). A Theory of Knowledge Management. *Journal of Contemporary Research in Management*, 6(1), 103-119.
- Aktharsha, U. S., & Anisa, H. (2012). Knowledge Sharing: Nursing Ambience. *SCMS Journal of Indian Management*, 9(2), 13-25.
- Alavi, M., & Leidner, D. E. (2001). Review: Knowledge management and knowledge management systems: Conceptual foundations and research issues. *MIS Quarterly*, 25(1), 107-136.
- Alexander, E. A. (2012). The Effects of Legal, Normative, and Cultural-Cognitive Institutions on Innovation in Technology Alliances. *Management International Review*, 52(6), 791-815. doi: 10.1007/s11575-011-0123-y
- Alias, J., Hall, M., & Bennett, D. (2008). Transferring Knowledge of Manufacturing Techniques in Multi-National Corporations: A Review of the Literature. In D. Harorimana & D. Watkins (Eds.), *Proceedings of the 9th European Conference on Knowledge Management* (11-18).
- Allee, V. (1997). *The Knowledge Evolution: Expanding Organizational Intelligence*. Newton, United States: Butterworth-Heinemann.
- Almahamid, S., Awwad, A., & McAdams, A. (2010). Effects of Organizational Agility and Knowledge Sharing on Competitive Advantage: An Empirical Study in Jordan. *International Journal of Management*, 27(3), 387-404.
- Alotaibi, H., Crowder, R., & Wills, G. (2014). Investigating Factors for E-Knowledge Sharing amongst Academics Staffs. In C. Granja & D. Malzahn (Eds.), *Proceedings of the 6th International Conference on Information, Process, and Knowledge Management* (58-61).
- Alvesson, M., & Kärreman, D. (2001). Odd couple: Making sense of the curious concept of knowledge management. *The Journal of Management Studies*, 38(7), 995-1018.
- Amayah, A. T. (2011, September). *Knowledge Sharing, Personality Traits and Diversity: A Literature Review*. Paper presented at the Midwest Research-to Practice Conference in Adult, Continuing, and Community Education, Lindenwood University, St. Louis, Missouri, USA.
<http://www.lindenwood.edu/mwr2p/docs/Amayah.pdf>

- Ammann, E. (2008). A Meta-Model for Knowledge Management. In K. O'Sullivan (Eds.), *5th International Conference on Intellectual Capital, Knowledge Management & Organisational Learning* (37-44).
- Antonova, A., Csepregi, A., & Marchev, A. (2011). How to Extend the ICT Used at Organizations for Transferring and Sharing Knowledge. *IUP Journal of Knowledge Management*, 9(1), 37-56.
- Apostolou, D., Abecker, A., & Mentzas, G. (2007). Harmonising codification and socialisation in knowledge management. *Knowledge Management Research & Practice*, 5(4), 271-285.
- Aris, A. Z. b. Z. (2013). Requirement for Knowledge Sharing Behavior: A Review of Empirical Findings. *Journal of Asian Scientific Research*, 3(6), 517-526.
- Aydin, M. N., de Groot, J., & van Hillegersberg, J. (2010). Action readiness and mindset for IT offshoring. *Journal of Enterprise Information Management*, 23(3), 326-349. doi: 10.1108/17410391011036094
- Baba, M. L., Blomberg, J., LaBond, C., & Adams, I. (2013). New institutional approaches to formal organizations. In D. D. Caulkins & A. T. Jordan (Eds.), *A Companion to Organizational Anthropology*. Chichester, United Kingdom: Wiley-Blackwell.
- Babbie, E. (2012). *The Basics of Social Research* (6th ed.): Cengage Learning.
- Bairstow, N. (Producer). (2012). *Twenty Two Qualitative Data Methods [PowerPoint]*. Retrieved from <http://www.slideshare.net/nbairstow/twenty-two-qualitative-data-methods>
- Bakker, M., Leenders, R. T. A. J., Gabbay, S. M., Kratzer, J., & Van Engelen, J. M. L. (2006). Is trust really social capital? Knowledge sharing in product development projects. *Learning Organization, The*, 13(6), 594-605. doi: 10.1108/09696470610705479
- Baron, R. A., Byrne, D., & Branscombe, N. R. (2006). *South African Supplement to Social Psychology*. Cape Town, South Africa: Pearson Education South Africa.
- Barreto, C. (2003). *The motivators and effects of formalized knowledge-sharing between employees through knowledge management initiatives: A multi-case study approach* (Doctoral dissertation, Syracuse University, New York, United States). Available from ProQuest Dissertations and Theses.
- Bassili, J. N. (2008). Attitude strength. In W. D. Crano & R. Prislin (Eds.), *Attitudes and attitude change* (pp. 237-260). Hove, United Kingdom: Psychology Press.
- Baszanger, I. (1997). Deciphering Chronic Pain. In A. L. Strauss & J. M. Corbin (Eds.), *Grounded Theory in Practice*. Thousand Oaks, United States: SAGE Publications Inc.
- Beattie, S., Hardy, L., Savage, J., Woodman, T., & Callow, N. (2011). Development and validation of a trait measure of robustness of self-confidence. *Psychology of Sport and Exercise*, 12(2), 184-191. doi: 10.1016/j.psychsport.2010.09.008
- Becker, H. S. (2007). *Writing for Social Scientists: How to Start and Finish Your Thesis, Book, or Article: Second Edition*. London, United Kingdom: University of Chicago Press.
- Beehr, T. A., & Grebner, S. I. (2009). When stress is less (harmful). In A.-S. G. Antoniou, C. L. Cooper, G. P. Chrousos, C. D. Spielberger & M. W. Eysenck (Eds.), *Handbook of Managerial Behavior and Occupational Health*. Cheltenham, United Kingdom: Edward Elgar Publishing Ltd.
- Beesley, L. G. A., & Cooper, C. (2008). Defining knowledge management (KM) activities: towards consensus. *Journal of Knowledge Management*, 12(3), 48-62. doi: 10.1108/13673270810875859

- Bhaskar, R., & Zhang, Y. (2007). Knowledge Sharing in Law Enforcement: A Case Study. *Journal of Information Privacy & Security*, 3(3), 45-68.
- Bi, X.-q., & Yu, M. (2010, July). Research on knowledge sharing mechanism within the organization based on the perspective of training. In Y. Li & W. Desheng (Eds.), *Proceedings 2010 IEEE International Conference on Advanced Management Science* (123-127). doi:10.1109/ICAMS.2010.5553271
- Bircham-Connolly, H., Corner, J., & Bowden, S. (2005). An empirical study of the impact of question structure on recipient attitude during knowledge sharing. *Electronic Journal of Knowledge Management*, 32(1), 1-10.
- Black, L. J., Carlile, P. R., & Nelson, P. R. (2004). A Dynamic Theory of Expertise and Occupational Boundaries in New Technology Implementation: Building on Barley's Study of CT Scanning. *Administrative Science Quarterly*, 49(4), 572-607. doi: 10.2307/4131491
- Bock, G.-W., & Kim, Y.-G. (2002). Breaking the myths of rewards: an exploratory study of attitudes about knowledge sharing. *Information Resources Management Journal*, 15(2), 14-21.
- Bock, G.-W., Zmud, R. W., Kim, Y.-G., & Lee, J.-N. (2005). Behavioral intention formation in knowledge sharing: examining the roles of extrinsic motivators, social-psychological forces, and organizational climate. *MIS Quarterly*, 29(1), 87-111.
- Boer, N.-I., Berends, H., & van Baalen, P. (2011). Relational models for knowledge sharing behavior. *European Management Journal*, 29, 85-97. doi: 10.1016/j.emj.2010.10.009
- Boh, W. F., Nguyen, T. T., & Xu, Y. (2013). Knowledge transfer across dissimilar cultures. *Journal of Knowledge Management*, 17(1), 29-46. doi: 10.1108/13673271311300723
- Boisot, M. H. (1995). *Information space : a framework for learning in organizations, institutions and culture*. London: Routledge.
- Bordens, K. S., & Horowitz, I. A. (2002). *Social psychology*. London, United Kingdom: Lawrence Erlbaum Associates.
- Borges, R. (2013). Tacit knowledge sharing between IT workers: The role of organizational culture, personality, and social environment. *Management Research Review*, 36(1), 89-108. doi: 10.1108/01409171311284602
- Boyd, J., Ragsdell, G., & Oppenheim, C. (2007). Knowledge transfer mechanisms: a case study from manufacturing. In B. Martins & D. Remenyi (Eds.), *Proceedings of the 8th European Conference on Knowledge Management* (139-146).
- Brace, I. (2013). *Questionnaire Design: How to Plan, Structure and Write Survey Material for Effective Market Research*. London, United Kingdom: Kogan Page Ltd.
- Brătianu, C., & Vasilache, S. (2012). Knowledge transfer in medical education from a teamwork perspective. *Management & Marketing Challenges for the Knowledge Society*, 7(3), 381-392.
- Braun, V., & Clarke, V. (2006). Using thematic analysis in psychology. *Qualitative research in psychology*, 3(2), 77-101. doi: 10.1191/1478088706qp063oa
- Bromley, D. B. (2001). Relationships between personal and corporate reputation. *European Journal of Marketing*, 35(3/4), 316-334.
- Brunsson, N., & Jacobsson, B. (2000). *A world of standards*. Oxford, United Kingdom: Oxford University Press Inc.
- Bryant, A., & Charmaz, K. (2007). Grounded theory in historical perspective: An epistemological account. In A. Bryant & K. Charmaz (Eds.), *The Sage handbook of grounded theory* (pp. 31-57). London, United Kingdom: SAGE Publications Ltd.

- Bryman, A. (2012). *Social Research Methods* (4th Ed.). Oxford, United Kingdom: Oxford University Press.
- Burke, W. W., & Litwin, G. H. (1992). A causal model of organizational performance and change. *Journal of Management*, 18(3), 523-545.
- Campbell, B. (2009). A Resolution of Student's Grounded Theory A Priori Reading Dilemma. In AIS Electronic Library (Eds.), *Proceedings of the International Conference on Information Resources Management* (Paper 45).
- Carcello, J. V., Hermanson, D. R., & Ye, Z. (2011). Corporate Governance Research in Accounting and Auditing: Insights, Practice Implications, and Future Research Directions. *Auditing: A Journal of Practice & Theory*, 30(3), 1-31. doi: 10.2308/ajpt-10112
- Carducci, B. J. (2009). *The Psychology of Personality: Viewpoints, Research, and Applications* (2nd ed.). Malden, United States: Wiley-Blackwell.
- Carla, C. J. M. M., & Choi, C. J. (2010). Development and knowledge resources: a conceptual analysis. *Journal of Knowledge Management*, 14(5), 759-776. doi: 10.1108/13673271011074881
- Chang, H. H., & Chuang, S.-S. (2011). Social capital and individual motivations on knowledge sharing: Participant involvement as a moderator. *Information & Management*, 48(1), 9-18. doi: 10.1016/j.im.2010.11.001
- Chang, S. E., & Ho, C. B. (2006). Organizational factors to the effectiveness of implementing information security management. *Industrial Management & Data Systems*, 106(3), 345-361. doi: 10.1108/02635570610653498
- Chennamaneni, A. (2006). *Determinants of knowledge sharing behaviors: Developing and testing an integrated theoretical model* (Ph.D., The University of Texas at Arlington, United States -- Texas). Retrieved from <http://proquest.umi.com/pqdweb?did=1208135451&Fmt=7&clientId=29199&RQT=309&VName=PQD>.
- Chiri, K., & Klobas, J. (2010). Knowledge Sharing and Organisational Enabling Conditions. In E. Tomé (Eds.), *Proceedings of the 11th European Conference on Knowledge Management* (246-256).
- Chitkara, R., & Marty, P. (2010). *Global 100 Software Leaders - Key players & market trends*. PwC. Retrieved from <http://www.pwc.com/gx/en/technology/publications/global-software-100-leaders/assets/global-software-100.pdf>
- Chiu, C.-M., Hsu, M.-H., & Wang, E. T. G. (2006). Understanding knowledge sharing in virtual communities: An integration of social capital and social cognitive theories. *Decision Support Systems*, 42(3), 1872-1888. doi: DOI: 10.1016/j.dss.2006.04.001
- Cho, K. R., & Lee, J. (2004). Firm Characteristics and MNC's Intra-network Knowledge Sharing. *Management International Review*, 44(4), 435-455.
- Cho, N., Zheng, L. G., & Su, C.-J. (2007). An empirical study on the effect of individual factors on knowledge sharing by knowledge type. *Journal of Global Business and Technology*, 3(2), 1-15.
- Chou, C. H., & Chang, W. C. (2011). A review of knowledge sharing research through bibliometric method. In L. G. Chova, I. C. Torres & A. L. Martínez (Eds.), *Proceedings of the 5th International Technology, Education and Development Conference* (2072-2079).
- Chow, C. W., Deng, F. J., & Ho, J. L. (2000). The openness of knowledge sharing within organizations: A comparative study in the United States and the People's Republic of China. *Journal of Management Accounting Research*, 12, 65-95.
- Chun Wei, C., & Rivadávia Correa Drummond de Alvarenga, N. (2010). Beyond the ba: managing enabling contexts in knowledge organizations. *Journal of*

- Knowledge Management*, 14(4), 592-610. doi: 10.1108/13673271011059545
- Constant, D., Kiesler, S., & Sproull, L. (1994). What's mine is ours, or is it? A study of attitudes about information sharing. *Information Systems Research*, 5(4), 400-421.
- Contandriopoulos, D., Lemire, M., Denis, J.-L., & Tremblay, É. (2010). Knowledge Exchange Processes in Organizations and Policy Arenas: A Narrative Systematic Review of the Literature. *Milbank Quarterly*, 88(4), 444-483. doi: 10.1111/j.1468-0009.2010.00608.x
- Cooper, D. (2010). *Leadership Risk: A Guide for Private Equity and Strategic Investors*. Padstow, United Kingdom: Wiley & Sons Ltd.
- Cooper, H. (2009). *Research Synthesis and Meta-Analysis: A Step-by-Step Approach* (4th ed.). Thousand Oaks, United States: SAGE Publications Inc.
- Corcoran, M. (2001). But enough about me, what about the users? *Onlinemag*, 25(6), 90-92. Retrieved from ProQuest database.
- Corina, J., & Taplin, R. (2012). International initiatives influence on local government sustainability web-disclosures. *Social Responsibility Journal*, 8(4), 589-602. doi: 10.1108/17471111211272561
- Creswell, J. W. (1994). *Research design : qualitative and quantitative approaches*. London, United Kingdom: SAGE Publications Inc.
- Creswell, J. W. (2009). *Research design : qualitative, quantitative, and mixed methods approaches* (3rd ed.). Thousand Oaks, United States: Sage Publications Inc.
- Cummings, J. (2003). *Knowledge Sharing: A Review of the Literature*. Washington, D.C.: The World Bank. Retrieved from https://ieg.worldbankgroup.org/Data/reports/knowledge_eval_literature_review.pdf.
- Cyr, S., & Choo, C. W. (2010). The individual and social dynamics of knowledge sharing: an exploratory study. *Journal of Documentation*, 66(6), 824-846. doi: 10.1108/00220411011087832
- Dahler-Larsen, P. (2002). *Social Bonds to City Hall: How Appointed Managers Enter, Experience, and Leave Their Jobs in Western Local Government*. Odense, Denmark: University Press of Southern Denmark.
- Dalkir, K. (2013). *Knowledge Management in Theory and Practice*. Burlington, United States: Elsevier Inc.
- David, M., & Sutton, C. D. (2011). *Social Research: An Introduction* (2nd ed.). London, United Kingdom: SAGE Publications Ltd.
- Dawkins, C. (2010). Beyond Wages and Working Conditions: A Conceptualization of Labor Union Social Responsibility. *Journal of Business Ethics*, 95(1), 129-143. doi: 10.1007/s10551-009-0342-3
- De Mott, B. (1962). How to write a college novel. *The Hudson Review*, 15(2), 243-252. doi: 10.2307/3848550
- de Vaus, D. (2014). *Surveys In Social Research* (6th ed.). Abingdon, United Kingdom: Routledge.
- De Vries, R. E., De Vries, A., De Hoogh, A., & Feij, J. (2009). More than the Big Five: Egoism and the HEXACO model of personality. *European Journal of Personality*, 23(8), 635-654. doi: 10.1002/per.733
- de Vries, R. E., van den Hooff, B., & de Ridder, J. A. (2006). Explaining Knowledge Sharing: The Role of Team Communication Styles, Job Satisfaction, and Performance Beliefs. *Communication Research*, 33(2), 115-135. doi: 10.1177/0093650205285366
- Decrop, A. (2006). *Vacation Decision-Making*. Wallingford, United Kingdom: CABI Publishing.

- Delanoy, D. L. (2005). Meta-analyses. In J. Henry (Ed.), *Parapsychology: Research on Exceptional Experiences*. Hove, United Kingdom: Routledge.
- Deniz, M. E., Karakuş, Ö., Traş, Z., Eldeleklioğlu, J., Özyeşil, Z., & Hamarta, E. (2013). Parental Attitude Perceived by University Students as Predictors of Subjective Well-Being and Life Satisfaction. *Psychology, 4*(3), 169-173. doi: 10.4236/psych.2013.43025
- Denzin, N. K., & Lincoln, Y. S. (2003). The Discipline and Practice of Qualitative Research. In N. K. Denzin & Y. S. Lincoln (Eds.), *The Landscape of Qualitative Research: Theories and Issues* (2nd ed.). London, United Kingdom: SAGE Publications Ltd.
- Detrich, R., Slocum, T. A., & Spencer, T. D. (2013). Evidence-based education and best available evidence: decision-making under conditions of uncertainty. In B. G. Cook, M. Tankersley & T. J. Landrum (Eds.), *Evidence-Based Practices* (pp. 21-44). Bingley, United Kingdom: Emerald Group Publishing Ltd.
- DiMaggio, P. J., & Powell, W. W. (2012). Introduction. In W. W. Powell & P. J. DiMaggio (Eds.), *The New Institutionalism in Organizational Analysis*. London, United Kingdom: University of Chicago Press.
- Ditzel, B., & Ebner, D. (2007). Approach to KM through a Systematic Assessment: Case Study at an Austrian University. In B. Martins & D. Remenyi (Eds.), *Proceedings of the 8th European Conference on Knowledge Management* (244-254).
- Dokhtesmati, M., & Bousari, R. G. (2013). Knowledge Sharing in Iranian Academic Institutions: Meta Analysis Approach. *Procedia - Social and Behavioral Sciences, 73*, 383-387. doi: 10.1016/j.sbspro.2013.02.065
- Douglas, D. (2003). Inductive theory generation: A grounded approach to business inquiry. *Electronic Journal of Business Research Methods, 2*(1), 47-54.
- Drucker, P. F. (1959). *Landmarks of tomorrow*. London, United Kingdom: Heinemann.
- Drucker, P. F. (1999). Knowledge-worker productivity: The biggest challenge. *California Management Review, 41*(2), 79-94.
- Drummond, C. (2009). Replicability is not reproducibility: nor is it good science. In National Research Council of Canada (Eds.), *Proceedings of the Evaluation Methods for Machine Learning Workshop at the 26th ICML*
- Durst, S., & Edvardsson, I. R. (2012). Knowledge management in SMEs: a literature review. *Journal of Knowledge Management, 16*(6), 879-903. doi: 10.1108/13673271211276173
- Edvardsson, I. R., & Gudmundur Kristjan, O. (2011). Knowledge management and value creation in service firms. *Measuring Business Excellence, 15*(4), 7-15. doi: 10.1108/13683041111184062
- Elliott, J., Holland, J., & Thomson, R. (2008). Longitudinal and Panel Studies. In P. Alasuutari, L. Bickman & J. Brannen (Eds.), *The SAGE Handbook of Social Research Methods*: SAGE Publications.
- Ellis, D., & Vasconcelos, A. (2010). Knowledge management. In H. Bidgoli (Ed.), *The Handbook of Technology Management: Core Concepts, Financial Tools and Techniques, Operations and Innovation Management* (Vol. 1, pp. 132-143). Hoboken, United States: John Wiley & Sons Inc.
- Emmitt, S., & Gorse, C. (2003). *Construction Communication*. Oxford, United Kingdom: Blackwell Publishing Ltd.
- Empson, L. (2001). Introduction: Knowledge Management in Professional Service Firms. *Human Relations, 54*(7), 811-817. doi: 10.1177/0018726701547001
- Erickson, F. (2007). Ethnography and education policy: a commentary. In B. A. U. Levinson, S. L. Cade, A. Padawer & A. P. Elvir (Eds.), *Ehtnography and*

- Education Policy Across the Americas*. Westport, United States: Praeger Publishers.
- Evans, M., Wensley, A., & Choo, C. W. (2012). How Shared Language and Shared Vision Motivate Effective Knowledge Sharing Behavior. In J. G. Cegarra (Eds.), *Proceedings of the 13th European Conference on Knowledge Management* (284-302).
- Evans, N. (2012). Destroying collaboration and knowledge sharing in the workplace: a reverse brainstorming approach. *Knowledge Management Research & Practice*, 10(2), 175-187. doi: 10.1057/kmrp.2011.43
- Evans, T., & Hardy, M. (2010). *Evidence and Knowledge for Practice*. Cambridge, United Kingdom: Polity Press.
- Eze, U. C., Gerald Guan Gan, G., Choon Yih, G., & Tan, T. L. (2013). Perspectives of SMEs on knowledge sharing. *VINE*, 43(2), 210-236. doi: 10.1108/03055721311329963
- Falk, J. H., & Sheppard, B. (2006). *Thriving in the Knowledge Age: New Business Models for Museums and Other Cultural Institutions*. Lanham, United States: Altamira Press.
- Faucher, J.-B. P. L., Everett, A. M., & Lawson, R. (2008). Reconstituting knowledge management. *Journal of Knowledge Management*, 12(3), 3-16. doi: 10.1108/13673270810875822
- Fazey, I., Evely, A. C., Reed, M. S., Stringer, L. C., Kruijssen, J., White, P. C. L., . . . Trevitt, C. (2012). Knowledge exchange: a review and research agenda for environmental management. *Environmental Conservation*, 40(1), 19-36. doi: 10.1017/S037689291200029X
- Fink, A. (2014). *Conducting research literature reviews : from the internet to paper* (4th ed.). Thousand Oaks, United States: SAGE Publishing Inc.
- Finnegan, D. (2005). *Knowledge Sharing in the Introduction of a New Technology* (Doctoral dissertation, University of Warwick, Warwick, United Kingdom). Available from Warwick Research Archive Portal.
- Fleeson, W. (2007). Situation-Based Contingencies Underlying Trait-Content Manifestation in Behavior. *Journal of Personality*, 75(4), 825-862. doi: 10.1111/j.1467-6494.2007.00458.x
- Flick, U. (2014). *An Introduction to Qualitative Research* (5th Ed.). London, United Kingdom: SAGE Publications Ltd.
- Foray, D., & Gault, F. (2003). Measurement of Knowledge Management Practices. In OECD (Ed.), *Measuring knowledge management in the business sector: first steps* (pp. 11-28). Paris, France: Organisation for Economic Co-operation and Development - Statistics Canada.
- Ford, D. P. (2004). *Knowledge sharing: Seeking to understand intentions and actual sharing* (Doctoral dissertation, Queen's University at Kingston, Kingston, Canada). Available from ProQuest Dissertations and Theses.
- Ford, D. P., & Staples, S. (2010). Are full and partial knowledge sharing the same? *Journal of Knowledge Management*, 14(3), 394 - 409. doi: 10.1108/13673271011050120
- Freitag, A. R. (1999). Dit dit dit -- dash dash dash -- dit dit dit: SOS for PR orthodoxy? *Public Relations Quarterly*, 44(4), 36-40.
- Fryxell, G. E., & Lo, C. W. H. (2003). The influence of environmental knowledge and values on managerial behaviours on behalf of the environment: An empirical examination of managers in China. *Journal of Business Ethics*, 46(1), 45-69.
- Gale, T., & Beeftink, K. (2005). Exploring differences between positivistic and postpositivistic philosophy: an interpretivistic case study of tourist expectations & satisfaction. In J. G. Peden & R. M. Schuster (Eds.),

- Proceedings of the 2005 Northeastern Recreation Research Symposium* (345-354).
- Gang, L., Man, J., Jinghao, C., & Guanghui, Y. (2013). A Review of Knowledge Sharing based on Social Network. *Journal of Information Resources Management*, 3(2), 50-58.
- Garfinkle, E. (1999). Quid pro Quo: The Inverse of Talion. *Canadian Journal of Psychoanalysis*, 7(2), 245-270.
- Ghobadi, S., & D'Ambra, J. (2011). Coopetitive knowledge sharing: An analytical review of literature. *The Electronic Journal of Knowledge Management*, 9(4), 307-317.
- Giannatasio, N. A. (2008). Threats to validity in research design. In K. Yang & G. J. Miller (Eds.), *Handbook of Research Methods in Public Administration*. Boca Raton, United States: Auerbach Publications.
- Gibbs, G. P. (Producer). (2011, October 24). *Coding Part 2: Thematic coding* [YouTube video]. Retrieved from https://www.youtube.com/watch?v=B_YXR9kp1_o
- Gibbs, G. P. (Producer). (2012, April 5). *Template analysis Part 1, Constructing the Template* [YouTube video]. Retrieved from <http://www.youtube.com/watch?v=EEIt5pag4Z8>
- Glaister, K. W., & Buckley, P. J. (1999). Performance relationships in UK international alliances. *Management International Review*, 39(2), 123-147.
- Glaser, B. G., & Strauss, A. L. (1967). *The Discovery of Grounded Theory: Strategies for Qualitative Research*. New York, United States: Aldine de Gruyter.
- Glomseth, R., Gottschalk, P., & Solli-Sæther, H. (2007). Occupational culture as determinant of knowledge sharing and performance in police investigations. *International Journal of the Sociology of Law*, 35(2), 96-107. doi: 10.1016/j.ijsl.2007.03.003
- Goodwin, S. (2009). *Formal knowledge sharing in medium-to-large organizations: constraints, enablers and alignment* (Doctoral dissertation, University of Bath, Bath, United Kingdom). Available from Index to Theses.
- Gordon, R., & Grant, D. (2005). Knowledge management or management of knowledge? Why people interested in knowledge management need to consider Foucault and the construct of power. *Tamara : Journal of Critical Postmodern Organization Science*, 3(2), 27-39.
- Griffin, R. W., & Moorehead, G. (2011). *Organizational Behavior: Managing people and organizations* (10th ed.). Mason, United States: South-Western Cengage Learning.
- Grix, J. (2001). *Demystifying Postgraduate Research: from MA to PhD*. Edgbaston, United Kingdom: University of Birmingham Press.
- Guntrip, H. (2011). *Personality Structure and Human Interaction: The Developing Synthesis of Psychodynamic Theory*. London, United Kingdom: Karnac Books Ltd.
- Hammersley, M., & Atkinson, P. (2007). *Ethnography: Principles in Practice*. London, United Kingdom: Routledge.
- Hanson, L. (2012). *The experiences of the younger supervisor: Implications for organizations* (Doctoral dissertation, Colorado State University, Fort Collins, United States). Available from ProQuest Dissertations & Theses Full Text.
- Hantrais, L. (1995). *Comparative Research Methods* (Report No. 13). Guildford, United Kingdom: University of Surrey.
- Harzem, P. (1984). Experimental analysis of individual differences and personality. *Journal of the Experimental Analysis of Behavior*, 42(3), 385-395.

- Hauck, R. V. (2005). *Should they share or not? An investigation on the use of communication and knowledge sharing technology in a police organization* (Doctoral dissertation, The University of Arizona, Tucson, United States). Available from ProQuest Dissertations & Theses Full Text.
- Haw, K., & Hadfield, M. (2011). *Video in Social Science Research: Functions and Forms*. Abingdon, United Kingdom: Routledge.
- Heath, A. C., Madden, P. A., & Martin, N. G. (1998). Assessing the effects of cooperation bias and attrition in behavioral genetic research using data-weighting. *Behavior Genetics, 28*(6), 415-427.
- Heisig, P. (2009). Harmonisation of knowledge management - comparing 160 KM frameworks around the globe. *Journal of Knowledge Management, 13*(4), 4-31. doi: 10.1108/13673270910971798
- Helm, R., & Meckl, R. (2004). Success factors of knowledge management: A metaanalysis of the empirical state-of-the-art. *Keyan-guanli: shuangyuekan = Science research management, 25*(ZK), 133-139.
- Hendriks, P. (1999). Why share knowledge? The influence of ICT on the motivation for knowledge sharing. *Knowledge and Process Management, 6*(2), 91-100. doi: 10.1002/(sici)1099-1441(199906)6:2<91::aid-kpm54>3.0.co;2-m
- Hergenrather, K. C., Haase, E., & Rhodes, S. D. (2013). Consumers with Major Depressive Disorder and Employment Outcomes: Application of the Theory of Planned Behavior. *Journal of Rehabilitation, 79*(1), 19-29.
- Hew, K. F., & Hara, N. (2007). Knowledge sharing in online environments: A qualitative case study. *Journal of the American Society for Information Science and Technology, 58*(14), 2310-2324. doi: 10.1002/asi.20698
- Hislop, D. (2013). *Knowledge Management in Organizations: A Critical Introduction*. Oxford, United Kingdom: Oxford University Press.
- Hofer, A. R., Hofer, C., Eroglu, C., & Waller, M. A. (2011). An institutional theoretic perspective on forces driving adoption of lean production globally: China vis-a-vis the USA. *International Journal of Logistics Management, 22*(2), 148-178. doi: 10.1108/09574091111156532
- Holly, C., Salmond, S., & Saimbert, M. K. (2011). *Comprehensive Systematic Review for Advanced Nursing Practice*. New York, United States: Springer Publishing Company.
- Holste, J. S., & Fields, D. (2010). Trust and tacit knowledge sharing and use. *Journal of Knowledge Management, 14*(1), 128-140. doi: 10.1108/13673271011015615
- Holton, J. A. (2007). The coding process and its challenges. In A. Bryant & K. Charmaz (Eds.), *The SAGE Handbook of Grounded Theory: Paperback Edition* (pp. 265-289). London, United Kingdom: SAGE Publications Ltd.
- Hood, J. C. (2007). Orthodoxy vs. power: The defining traits of grounded theory. In A. Bryant & K. Charmaz (Eds.), *The SAGE Handbook of Grounded Theory: Paperback Edition* (pp. 151-164). London, United Kingdom: SAGE Publications Ltd.
- Howell, K. E., & Annansingh, F. (2013). Knowledge generation and sharing in UK universities: A tale of two cultures? *International Journal of Information Management, 33*(1), 32-39. doi: 10.1016/j.ijinfomgt.2012.05.003
- Hsu, I. C., & Wang, Y.-S. (2008). A Model of Intraorganizational Knowledge Sharing: Development and Initial Test. *Journal of Global Information Management, 16*(3), 45-73.
- Hsu, J.-L., Hwang, W.-Y., Huang, Y.-M., & Liu, J.-J. (2011). Online Behavior in Virtual Space: An Empirical Study on Helping. *Journal of Educational Technology & Society, 14*(1), 146-157.
- Huang, W., Siau, K., & Wei, K. K. (2005). *Electronic Government Strategies and Implementation*. London, United Kingdom: Idea Group Publishing.

- Huang, X., & Gardner, S. (2007). A stakeholder view of strategic management in Chinese firms. *International Journal of Business Studies*, 15(1), 1-13.
- Husted, K., & Michailova, S. (2002). Knowledge sharing in Russian companies with Western participation. *Management International*, 6(2), 17-28.
- Hutchings, K., & Michailova, S. (2006). The impact of group membership on knowledge sharing in Russia and China. *International Journal of Emerging Markets*, 1(1), 21-34.
- Hutchinson, J., & Huberman, M. (1994). Knowledge dissemination and use in science and mathematics education: A literature review. *Journal of Science Education and Technology*, 3(1), 27-47. doi: 10.1007/BF01575814
- Iqbal, S., Toulson, P., & Tweed, D. (2010). Tacit Knowledge sharing practices and organisational effectiveness: A review of literature. In A. M. Rawani, H. Kettani & Z. Lian (Eds.), *Proceedings of the 2010 International Conference on Innovation, Management and Service* (192-196).
- Ismail, W. K. W., Nor, K. M., & Marjani, T. (2009). The Role of Knowledge Sharing Practice in Enhancing Project Success. *Interdisciplinary Journal of Contemporary Research In Business*, 1(7), 34-52.
- ISO. (2014). ISO 9000 - Quality management. Retrieved March 25, 2014, from http://www.iso.org/iso/iso_9000
- Izzatt-White, M., & Saunders, C. (2014). *Leadership*. Oxford, United Kingdom: Oxford University Press.
- Jackson, P., & Webster, R. (2007). The Social Reality of Business Activity: A Contingent Methodology for Knowledge Elicitation and Mapping. *International Journal of Knowledge Management*, 3(1), 49-65.
- Javadi, M. H. M., Zadeh, N. D., Zandi, M., & Yavarian, J. (2012). Effect of Motivation and Trust on Knowledge Sharing and Effect of Knowledge Sharing on Employee's Performance. *International Journal of Human Resource Studies*, 2(1), 210-221. doi: 10.5296/ijhrs.v2i1.1675
- Jelavic, M. (2011). Socio-Technical Knowledge Management and Epistemological Paradigms: Theoretical Connections at the Individual and Organisational Level. *Interdisciplinary Journal of Information, Knowledge, and Management*, 6, 1-16.
- Jennings, P. D., & Greenwood, R. (2003). 6b Constructing the Iron Cage: Institutional Theory and Enactment. In R. Westwood & C. Stewart (Eds.), *Debating organization: point-counterpoint in organization studies* (pp. 195-207). Oxford, United Kingdom: Blackwell.
- Jepperson, R. L. (2012). Institutions, institutional effects, and institutionalism. In W. W. Powell & P. J. DiMaggio (Eds.), *The New Institutionalism in Organizational Analysis*. London, United Kingdom: University of Chicago Press.
- Jewels, T., & Ford, M. (2006). Factors Influencing Knowledge Sharing in Information Technology Projects. *E - Service Journal*, 5(1), 99-117.
- Jiacheng, W., Lu, L., & Francesco, C. A. (2010). A cognitive model of intra-organizational knowledge-sharing motivations in the view of cross-culture. *International Journal of Information Management*, 30(3), 220-230. doi: 10.1016/j.ijinfomgt.2009.08.007
- Jingnan, L. K. L. (2010). A Review of the Influence Factors of the Knowledge Sharing in Organizations. *Researches In Library Science*, 16.
- Jive. (2014). Jive social business software. Retrieved 08 May 2014, from <http://www.jivesoftware.com/>
- Jones, S. R., Torres, V., & Arminio, J. (2014). *Negotiating the Complexities of Qualitative Research in Higher Education: Fundamental Elements and Issues* (2nd Ed.). Oxon, United Kingdom: Routledge.

- Kalof, L., Dan, A., & Dietz, T. (2008). *Essentials Of Social Research*. Maidenhead, United Kingdom: Open University Press.
- Kamoche, K. (1996). Strategic human resources management within a resource-capability view of the firm. *Journal of Management Studies*, 33(2), 213-233.
- Kane, A. A., Argote, L., & Levine, J. M. (2005). Knowledge transfer between groups via personnel rotation: Effects of social identity and knowledge quality. *Organizational Behavior and Human Decision Processes*, 96(1), 56-71. doi: 10.1016/j.obhdp.2004.09.002
- Kant, I. (1781). *Critique of pure reason* (J. M. D. Meiklejohn, Trans.). Mineola, United States: Dover Publications Inc. (Reprinted from: *Critique of pure reason*, Ed., 1900, London, United Kingdom: Colonial Press).
- Karp, J. R. (2009). *How to Survive Your Phd*. Naperville, United States: Sourcebooks Inc.
- Kebede, G. (2010). Knowledge management: An information science perspective. *International Journal of Information Management*, 30(5), 416-424. doi: <http://dx.doi.org/10.1016/j.ijinfomgt.2010.02.004>
- Kelechi, T. J., & Naccarato, M. K. (2010). Knowledge Translation: Summarizing and Synthesizing the Evidence for WOC Best Practices. *Journal of Wound Ostomy & Continence Nursing*, 37(2), 132-136.
- Kijl, N. (2010, January). *Structured literature review of Knowledge Sharing with TheoryMaps*. Paper presented at the 12thTwente Student Conference on IT, Enschede, the Netherlands.
- Klenke, K. (2008). *Qualitative Research in the Study of Leadership*. Bingley, United Kingdom: Emerald Group Publishing Ltd.
- Klopper, H., Berndt, A., Chipp, K., Ismail, Z., Roberts-Lombard, M., Subramani, D., . . . Myer-Smith, P. (2006). *Marketing: Fresh perspectives*. Cape Town, South Africa: Pearson Education South Africa.
- Koger, S. M., & Winter, D. D. N. (2010). *The Psychology of Environmental Problems: Psychology for Sustainability* (3rd ed.). Hove, United Kingdom: Psychology.
- Kosonen, M. (2009). Knowledge sharing in virtual communities—a review of the empirical research. *International Journal of Web Based Communities*, 5(2), 144-163. doi: 10.1504/IJWBC.2009.023962
- Kumar, V. (2004). *Impact of social ties on knowledge transfer within multinational corporations* (Doctoral dissertation, Saint Louis University, Saint Louis, United States). Available from ProQuest Dissertations & Theses Full Text.
- Kwok, S. H., & Gao, S. (2005). Attitude towards knowledge sharing behavior. *Journal of Computer Information Systems*, 46(2), 45-51.
- Lam, A., & Lambermont-Ford, J.-P. (2010). Knowledge sharing in organisational contexts: a motivation-based perspective. *Journal of Knowledge Management*, 14(1), 51-66. doi: <http://dx.doi.org/10.1108/13673271011015561>
- LaRocca, R., Yost, J., Dobbins, M., Ciliska, D., & Butt, M. (2012). The effectiveness of knowledge translation strategies used in public health: a systematic review. *BMC Public Health*, 12(1), 751-765. doi: 10.1186/1471-2458-12-751
- Lawson, B., Petersen, K. J., Cousins, P. D., & Handfield, R. B. (2009). Knowledge Sharing in Interorganizational Product Development Teams: The Effect of Formal and Informal Socialization Mechanisms. *Journal of Product Innovation Management*, 26(2), 156-172. doi: 10.1111/j.1540-5885.2009.00343.x
- Lawson, J. M. (2006). *Critical Realism and Housing Research*. Abingdon, United Kingdom: Routledge.

- Lee, C.-H., & Jang, H. (2012). Predictors of successful implementation of COP: A comparison of officers' perceptions on organizational characteristics between South Korea and the USA. *Policing: An International Journal of Police Strategies & Management*, 35(2), 382-401. doi: 10.1108/13639511211230138
- Lee, C. C., & Yang, J. (2000). Knowledge value chain. *Journal of Management Development*, 19(9), 783-794. doi: 10.1108/02621710010378228
- Lemmetynen, M. (2007). *Factors influencing knowledge sharing in professional services* (Master's thesis, Swedish School of Economics and Business Administration, Helsinki, Finland). Retrieved from <http://www.pafis.shh.fi/graduates/millem03.pdf>.
- Li, W. (2008). *Online knowledge sharing in a multinational corporation: Chinese and American practices* (Ph.D., University of Illinois at Urbana-Champaign, United States -- Illinois).
- Li, Z., Zhong, H., & Wang, X. (2010). Mapping multi-view architecture products to multi-agent software architecture style. In F. L. Wang, H. Deng, Y. Gao & J. Lei (Eds.), *Proceedings of the International Conference on Artificial Intelligence and Computational Intelligence* (249-258).
- Li, Z. H., Li, M. X., & Li, J. (2008, October). *An Empirical Research on the Influencing Factors of Knowledge Sharing Willingness among Virtual Community Members*. Paper presented at the 4th International Conference on Wireless Communications, Networking and Mobile Computing, Dalian, China.
- Lin, H.-F. (2007). Effects of extrinsic and intrinsic motivation on employee knowledge sharing intentions. *Journal of Information Science*, 33(2), 135-149. doi: 10.1177/0165551506068174
- Lin, H.-F., & Lee, G.-G. (2004). Perceptions of senior managers toward knowledge-sharing behaviour. *Management Decision*, 42(1), 108-125. doi: 10.1108/00251740410510181
- Lin, M.-J. J., Hung, S.-W., & Chen, C.-J. (2009). Fostering the determinants of knowledge sharing in professional virtual communities. *Computers in Human Behavior*, 25(4), 929-939. doi: DOI: 10.1016/j.chb.2009.03.008
- Ling, L. H. (2007, September). *From Shannon-Weaver to Boisot: A Review on the Research of Knowledge Transfer Model*. Paper presented at the International Conference on Wireless Communications, Networking and Mobile Computing, Shanghai, China.
- Liu, C.-C., Liang, T.-P., Rajagopalan, B., Sambamurthy, V., & Wu, J. C.-H. (2011). Knowledge Sharing as Social Exchange: Evidence from a Meta-Analysis. *Pacific Asia Journal of the Association for Information Systems*, 3(4), 3.
- Louche, C., & Baeten, X. (2006). A stepwise approach to stakeholder management. In J. Jonker & M. de Witte (Eds.), *Management Models for Corporate Social Responsibility*. Heidelberg, Germany: Springer.
- Luo, J., & Yin, S. (2008, October). *A Synthesis on Enterprise Knowledge Transfer*. Paper presented at the 4th International Conference on Wireless Communications, Networking and Mobile Computing, Dalian, China.
- MacNeil, C. M. (2004). Exploring the supervisor role as a facilitator of knowledge sharing in teams. *Journal of European Industrial Training*, 28(1), 93-102.
- Magnier-Watanabe, R., & Senoo, D. (2008). Organizational characteristics as prescriptive factors of knowledge management initiatives. *Journal of Knowledge Management*, 12(1), 21-36. doi: 10.1108/13673270810852368
- Makela, K., Kalla, H. K., & Piekkari, R. (2007). Interpersonal similarity as a driver of knowledge sharing within multinational corporations. *International Business Review*, 16(1), 1-22. doi: 10.1016/j.ibusrev.2006.11.002

- Mäkelä, M. M., & Turcan, R. V. (2007). Building grounded theory in entrepreneurship research. In H. Neergaard & J. P. Ulhøi (Eds.), *Handbook of Qualitative Research Methods in Entrepreneurship*. Cheltenham, United Kingdom: Edward Elgar Publishing Ltd.
- Mangal, S. K. (2007). *Essentials of educational psychology*. New Delhi, India: Prentice-Hall of India.
- Marouf, L. N. (2004). Knowledge sharing enablers: A review of organizational strategies and practices. In B. Trezzini, P. Lambe & S. al- Hawamidah (Eds.), *Proceedings Of The 1st iKMS International Conference On Knowledge Management* doi:10.1142/9789812702081_0058
- Marouf, L. N. (2007). Social networks and knowledge sharing in organizations: a case study. *Journal of Knowledge Management*, 11(6), 110-125. doi: 10.1108/13673270710832208
- Marques, J. M., Abrams, D., & Serodio, R. G. (2001). Being better by being right: subjective group dynamics and derogation of in-group deviants when generic norms are undermined. *Journal of Personality and Social Psychology*, 81(3), 436-447. doi: 10.1037//0022-3514.81.3.436
- Marshall, A. (1890). *Principles of Economics: Unabridged Eighth Edition*. (Reprinted from: *Principles of Economics: Unabridged Eighth Edition*, New York, United States: Cosimo Inc).
- McNiff, J., & Whitehead, J. (2001). *Action Research: Principles and Practice* (2nd ed.). London, United Kingdom: RoutledgeFalmer.
- Meckler, M., & Baillie, J. (2003). You Can't Handle the Truth: A Response to Gioia and Lounsbury *Journal of Management Inquiry*, 12(3), 299-303. doi: 10.1177/1056492603257727
- Meese, N., & McMahon, C. (2012). Knowledge sharing for sustainable development in civil engineering: a systematic review. *AI & Society*, 27(4), 437-449. doi: 10.1007/s00146-011-0369-8
- Melamed, T. (1996). Career success: An assessment of a gender-specific model. *Journal of Occupational and Organizational Psychology*, 69, 217-242.
- Mengis, J., & Eppler, M. J. (2005). *Understanding and Enabling Knowledge Sharing in Conversations: A literature Review and Management Framework*. Retrieved from <http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.130.6658&rep=rep1&type=pdf>
- Mentzas, G., Apostolou, D., Young, R., & Abecker, A. (2001). Knowledge networking: a holistic solution for leveraging corporate knowledge. *Journal of Knowledge Management*, 5(1), 94-106. doi: 10.1108/13673270110384446
- Merriam, S. B. (2009). *Qualitative Research: A Guide to Design and Implementation*. San Francisco, United States: John Wiley & Sons Inc.
- Michailova, S., & Hutchings, K. (2006). National Cultural Influences on Knowledge Sharing: A Comparison of China and Russia. *Journal of Management Studies*, 43(3), 383-405. doi: 10.1111/j.1467-6486.2006.00595.x
- Michailova, S., & Worm, V. (2003). Personal Networking in Russia and China: Blat and Guanxi. *European Management Journal*, 21(4), 509-519. doi: 10.1016/s0263-2373(03)00077-x
- Miles, M. B., & Huberman, A. M. (1994). *Qualitative data analysis: an expanded sourcebook*. London: Sage Publications.
- Misani, N. (2010). The convergence of corporate social responsibility practices. *Management Research Review*, 33(7), 734-748. doi: 10.1108/01409171011055816
- Mitchell, M. L., & Jolley, J. M. (2012). *Research Design Explained* (8th ed.). Belmont, United States: Wadsworth Cengage Learning.

- Mitton, C., Adair, C. E., McKenzie, E., Patten, S. B., & Perry, B. W. (2007). Knowledge Transfer and Exchange: Review and Synthesis of the Literature. *The Milbank Quarterly*, 85(4), 729-768.
- Mohammed, S., Hamilton, K., & Lim, A. (2009). The incorporation of time in team research: past, current, and future. In E. Salas, G. F. Goodwin & C. S. Burke (Eds.), *Team Effectiveness in Complex Organizations: Cross Disciplinary Perspectives and Approaches*. Hove, United Kingdom: Psychology Press.
- Mtega, W. P., Dulle, F., & Ronald, B. (2013). Understanding the knowledge sharing process among rural communities in Tanzania: A review of selected studies. *Knowledge Management & E-Learning*, 5(2), 205-217.
- Narula, U. (2006). *Communication Models*. New Delhi, India: Atlantic Publishers & Distributors (P) Limited.
- Neches, R., Fikes, R. E., Finin, T., Gruber, T., Patil, R., Senator, T., & Swartout, W. R. (1991). Enabling technology for knowledge sharing. *AI magazine*, 12(3), 36-56.
- Netemeyer, R. G., Durvasula, S., & Lichtenstein, D. R. (1991). A Cross-National Assessment of the Reliability and Validity of the CETSCALE. *Journal of Marketing Research*, 28(3), 320-327.
- Niedergassel, B. (2011). *Knowledge Sharing in Research Collaborations: Understanding the Drivers and Barriers* (Doctoral dissertation, Westfälische Wilhelms-Universität, Münster, Germany). Available from Deutsche Nationalbibliothek.
- Nita, B. (2008). *Identifying organizational and interpersonal relationship factors that promote knowledge sharing* (Doctoral dissertation, Alliant International University, San Diego, United States). Available from ProQuest Dissertations & Theses Full Text.
- Nonaka, I. (1994). A Dynamic Theory of Organizational Knowledge Creation. *Organization Science*, 5(1), 14-37.
- Nonaka, I., & Takeuchi, H. (1995). *The knowledge-creating company: how Japanese companies create the dynamics of innovation*. New York, United States: Oxford University Press.
- Nonaka, I., & Toyama, R. (2003). The knowledge-creating theory revisited: knowledge creation as a synthesizing process. *Knowledge Management Research & Practice*, 1(1), 2-10.
- O'Connor, M. K., & Netting, F. E. (2011). *Analyzing Social Policy: Multiple Perspectives for Critically Understanding and Evaluating Policy*. Hoboken, United States: John Wiley & Sons Inc.
- O'Neill, B. S., & Adya, M. (2007). Knowledge sharing and the psychological contract: Managing knowledge workers across different stages of employment. *Journal of Managerial Psychology*, 22(4), 411-436. doi: 10.1108/02683940710745969
- Obembe, A. O. (2007). *Knowledge Sharing and Social Interaction: An Exploration of Individual Action through the Integral Role of the Habitus* (Doctoral dissertation, University of Leicester, Leicester, United Kingdom).
- OED Online. (2014). Oxford English Dictionary. Retrieved March 25, 2014, from <http://www.oed.com>
- Okazaki, S., Mueller, B., & Diehl, S. (2011). A multicountry advertising research framework: Lessons learned from testing global consumer culture positioning. In M. Sarstedt, M. Schwaiger & C. R. Taylor (Eds.), *Measurement and Research Methods in International Marketing* (pp. 73-98). Bingley, United Kingdom: Emerald Group Publishing Ltd.
- Olsen, G. R., Cutkosky, M., Tenenbaum, J. M., & Gruber, T. R. (1995). Collaborative Engineering Based on Knowledge Sharing Agreements. *Concurrent*

- Engineering: Research and Applications*, 3(2), 145-159. doi: 10.1177/1063293x9500300209
- Oxhorn, P. D. (2010). *Organizing Civil Society: The Popular Sectors and the Struggle for Democracy in Chile*. University Park, PA, United States: Pennsylvania State University Press.
- Paroutis, S., & Saleh, A. A. (2009). Determinants of knowledge sharing using Web 2.0 technologies. *Journal of Knowledge Management*, 13(4), 52-63. doi: 10.1108/13673270910971824
- Patel, D., Samara, K., & Patel, S. (2011). Review of Knowledge Sharing: Conceptual Foundations for Micro-level Knowledge Sharing and Readiness-for Change Related Behaviours. In M. Gusev & P. Mitrevski (Eds.), *Proceedings of the Second International Conference ICT Innovations 2010* (11-26). doi:10.1007/978-3-642-19325-5_3
- Pentland, D., Forsyth, K., Maciver, D., Walsh, M., Murray, R., Irvine, L., & Sikora, S. (2011). Key characteristics of knowledge transfer and exchange in healthcare: integrative literature review. *Journal of Advanced Nursing*, 67(7), 1408-1425. doi: 10.1111/j.1365-2648.2011.05631.x
- Periorellis, P., & Bokma, A. (1998). *A review of the methodologies, techniques and suggestions proposed for enabling knowledge sharing and reuse in computer integrated manufacturing environments and other enterprises*. Retrieved from <https://kluedo.ub.uni-kl.de/frontdoor/index/index/docId/230>
- Phelps, C., Heidl, R., & Wadhwa, A. (2012). Knowledge, Networks, and Knowledge Networks: A Review and Research Agenda. *Journal of Management*, 38(4), 1115-1166. doi: 10.1177/0149206311432640
- Plato. (360BC). *Theaetetus* (B. Jowett, Trans.). In S. Asscher & D. Widger (Eds.), *Theaetetus: The Project Gutenberg EBook*.
- Pole, C., & Morrison, M. (2003). *Ethnography For Education*. Maidenhead, United Kingdom: Open University Press.
- Prieto, I. M., Revilla, E., & Rodríguez-Prado, B. (2009). Managing the knowledge paradox in product development. *Journal of Knowledge Management*, 13(3), 157-170. doi: 10.1108/13673270910962941
- Purdy, M., & Borisoff, D. (1997). *Listening in Everyday Life: A Personal and Professional Approach* (2nd ed.). London, United Kingdom: University Press of America Inc.
- Quigley, N. R., Tesluk, P. E., Locke, E. A., & Bartol, K. M. (2007). A Multilevel Investigation of the Motivational Mechanisms Underlying Knowledge Sharing and Performance. *Organization Science*, 18(1), 71-88. doi: 10.1287/orsc.1060.0223
- Rabie, M. (2013). *Saving Capitalism and Democracy* Retrieved from <http://books.google.com/books?isbn=1137321318>
- Rabina, D. L. (2010). Course and Learning Objective in the Teaching of Grey Literature: The Role of Library and Information Science Education. In D. J. Farace & J. Schöpfel (Eds.), *Grey Literature in Library and Information Studies*. Berlin, Germany: Walter de Gruyter GmbH & Co. KG.
- Rahab, Sulistyandari, & Sudjono. (2011). The Development Of Innovation Capability Of Small Medium Enterprises Through Knowledge Sharing Process: An Empirical Study Of Indonesian Creative Industry. *International Journal of Business and Social Science*, 2(21), 112-123.
- Rajić, A., Young, I., & McEwen, S. A. (2013). Improving the Utilization of Research Knowledge in Agri-food Public Health: A Mixed-Method Review of Knowledge Translation and Transfer. *Foodborne pathogens and disease*, 10(5), 397-412. doi: 10.1089/fpd.2012.1349

- Raub, S., & Ruling, C.-C. (2001). The knowledge management tussle - speech communities and rhetorical strategies in the development of knowledge management. *Journal of Information Technology*, 16(2), 113-130. doi: 10.1080/02683960110054807
- Reagans, R., & McEvily, B. (2003). Network Structure and Knowledge Transfer: The Effects of Cohesion and Range. *Administrative Science Quarterly*, 48(2), 240-267.
- Rehman, M., Mahmood, A. K. B., Salleh, R., & Amin, A. (2010). Review of Factors Affecting Knowledge Sharing Behavior. In J. Su (Eds.), *E-business, Management and Economics: Selected, Peer Reviewed Papers from the 2010 International Conference on E-business, Management and Economics* (223-227).
- Remenyi, D. (2012). *Case Study Research: The quick guide series*. Reading, United Kingdom: Academic Conferences and Publishing International Ltd.
- Reynolds, A., & Anderson, R. H. (1992). *Selecting and Developing Media for Instruction*. London, United Kingdom: Chapman & Hall.
- Rhee, M., Yang, D., & Yoo, T. (2012). National culture and friendship homophily in the multinational workplace. *Asian Business & Management*, 12(3), 1-22. doi: 10.1057/abm.2012.23
- Richards, L. (2009). *Handling Qualitative Data: A Practical Guide* (2nd ed.). London, United Kingdom: SAGE Publications Ltd.
- Riege, A. (2005). Three-dozen knowledge-sharing barriers managers must consider. *Journal of Knowledge Management*, 9(3), 18-35. doi: 10.1108/13673270510602746
- Ritchie, J., & Spencer, L. (1994). Qualitative data analysis for applied policy research. In A. Bryman & R. G. Burgess (Eds.), *Analyzing Qualitative Data* (pp. 173-194). London, United Kingdom: Routledge.
- Ritchie, J., Spencer, L., & O'Connor, W. (2003). Carrying out qualitative analysis. In J. Ritchie & J. Lewis (Eds.), *Qualitative Research Practice: A Guide for Social Science Students and Researchers*. London, United Kingdom: SAGE Publications Ltd.
- Rivette, K. G., & Kline, D. (2000). Discovering New Value in Intellectual Property. *Harvard Business Review*, 78(1), 54-66.
- Roberts-Holmes, G. (2005). *Doing your early years research project: a step-by-step guide*. London, United Kingdom: Paul Chapman Publishing.
- Robison, L. J., & Ritchie, B. K. (2010). *Relationship Economics: The Social Capital Paradigm and Its Application to Business, Politics and Other Transactions*. Farnham, United Kingdom: Gower Publishing Ltd.
- Rovai, A. P., Baker, J. D., & Ponton, M. K. (2014). *Social Science Research Design and Statistics: A Practitioner's Guide to Research Methods and IBM SPSS*. Chesapeake, VA, United States: Watertree Press LLC.
- Roy, M., Chatterjee, T., & Linnanen, L. (2012). Exploring Effective Knowledge Management to Improve Organizational Performance in Globalized Environment: An Empirical Study. *Advances in Management and Applied Economics*, 2(1), 205-213.
- Roy, M., Guindon, J.-C., & Fortier, L. (1995). *Knowledge transfer: Literature review and proposal of a model*. Retrieved from <https://www.irsst.qc.ca/en/-irsst-publication-knowledge-transfer-literature-review-and-proposal-of-a-model-r-099.html>
- Rubin, A., & Babbie, R. (2011). *Essential Research Methods for Social Work* (3rd ed.). Belmont, United States: Brooks/Cole.
- Rubin, A., & Bellamy, J. (2012). *Practitioner's Guide to Using Research for Evidence-Based Practice* (2nd ed.). Hoboken, United States: John Wiley & Sons Inc.

- Rutten, R. (2003). *Knowledge and Innovation in Regional Industry*. London, United Kingdom: Routledge.
- Ryan, S. D., Windsor, J. C., Ibragimova, B., & Prybutok, V. R. (2010). Organizational Practices That Foster Knowledge Sharing: Validation across Distinct National Cultures. *Informing Science*, 13, 139-164.
- Rylatt, A. (2012). *Winning the Knowledge Game: Smarter learning for business excellence*. Oxford, United Kingdom: Butterworth-Heinemann.
- Salisbury, M. W. (2003). Putting theory into practice to build knowledge management systems. *Journal of Knowledge Management*, 7(2), 128-141. doi: 10.1108/13673270310477333
- Sallis, E., & Jones, G. (2012). *Knowledge Management in Education: Enhancing Learning & Education*. Abingdon, United Kingdom: Routledge.
- Samieh, H. M., & Wahba, K. (2007). Knowledge Sharing Behavior from Game Theory and Socio-Psychology Perspectives. In S. Laney (Eds.), *Proceedings of the 40th Hawaii International Conference on System Sciences (187c)*.
- Samson, D., & Daft, R. L. (2012). *Management (4th ed.)*. South Melbourne, Australia: Cengage Learning Australia.
- Saxton, T. (1997). The effects of partner and relationship characteristics on alliance outcomes. *Academy of Management Journal*, 40(2), 443-461.
- Scarso, E. (2009). Modeling the Transfer of Knowledge Between Organisations: A Critical Review of the Current Literature. In E. Bolisani & E. Scarso (Eds.), *Proceedings of the 10th European Conference on Knowledge Management*
- Schachtel, E. G. (1959). *Metamorphosis: On the Conflict of Human Development and the Development of Creativity*. New York, United States: Basic Books Inc. (Reprinted from: *Metamorphosis: On the Conflict of Human Development and the Development of Creativity*, Ed. 2001, Abingdon, United Kingdom: Routledge).
- Scott, C. J. (2010). Perceptions of Leadership under Conditions of Environmental Uncertainty. *Journal of American Academy of Business, Cambridge*, 16(1), 30-35.
- Scott, W. R. (2001). *Institutions and organizations (2nd ed.)*. London, United Kingdom: SAGE Publications Ltd.
- Scott, W. R. (2007). Institutional Theory: Contributing to a Theoretical Research Program. In K. G. Smith & M. A. Hitt (Eds.), *Great Minds in Management: The Process of Theory Development*. Oxford: Oxford University Press.
- Scott, W. R. (2008a). Approaching adulthood: the maturing of institutional theory. *Theory and Society*, 37(5), 427-442. doi: 10.1007/s11186-008-9067-z
- Scott, W. R. (2008b). *Institutions and Organizations: Ideas and Interests (3rd Ed.)*: SAGE Publications.
- Sedera, D. (2009, July). *Knowledge management for enterprise systems: observations from small, medium and large organizations*. Paper presented at the Pacific Asia Conference on Information Systems, Hyderabad, India.
- Senapathi, R. (2011). Dissemination and Utilisation: Knowledge. *SCMS Journal of Indian Management*, 8(2), 85-105.
- Senaratne, S., & Sexton, M. (2008). Managing construction project change: a knowledge management perspective. *Construction Management & Economics*, 26(12), 1303-1311. doi: 10.1080/01446190802621044
- Seong, J. Y., & Kristof-Brown, A. L. (2012). Testing multidimensional models of person-group fit. *Journal of Managerial Psychology*, 27(6), 536-556. doi: 10.1108/02683941211252419
- Shankar, R., & Gupta, A. (2005). Towards framework for knowledge management implementation. *Knowledge and Process Management*, 12(4), 259-277. doi: 10.1002/kpm.234

- Siemsen, E., Roth, A. V., Balasubramanian, S., & Anand, G. (2009). The Influence of Psychological Safety and Confidence in Knowledge on Employee Knowledge Sharing. *Manufacturing & Service Operations Management*, 11(3), 429-447. doi: 10.1287/msom.1080.0233
- Slawinski, N., & Jiang, G.-L. (2006). Intra-MNC knowledge transfer: a review of the literature. In P. C. Ensign (Eds.), *Proceedings of the Annual Conference of the Administrative Science Association of Canada, Critical Accounting and Contemporary Theory Division*
- Small, C. T., & Sage, A. P. (2005/2006). Knowledge management and knowledge sharing: A review. *Information Knowledge Systems Management*, 5(3), 153-169.
- Smith, J. A., Flowers, P., & Larkin, M. (2009). *Interpretative Phenomenological Analysis: Theory, Method and Research*. London, United Kingdom: SAGE Publications Ltd.
- Smoyer, E. W. (2009). *Identifying knowledge sharing relationships in the telecommunication industry* (Doctoral dissertation, University of Phoenix, Arizona, United States). Available from ProQuest Dissertations & Theses Full Text.
- Smylie, J. K. (2011). Knowledge translation and indigenous communities: a decolonizing perspective. In E. M. Banister, B. J. R. Leadbeater & E. A. Marshall (Eds.), *Knowledge Translation in Context: Indigenous, Policy, and Community Settings*. Toronto, Canada: University of Toronto Press Inc.
- So, J. C. F., & Bolloju, N. (2005). Explaining the intentions to share and reuse knowledge in the context of IT service operations. *Journal of Knowledge Management*, 9(6), 30-41.
- Solano, B. R. (2009). *Organizational politics, personality and willingness to share knowledge: The mediational role of employee engagement* (Doctoral dissertation, Alliant International University, San Diego, United States). Available from ProQuest Dissertations & Theses Full Text.
- Søndergaard, S., Kerr, M., & Clegg, C. (2007). Sharing knowledge: contextualising socio-technical thinking and practice. *The Learning Organization*, 14(5), 423-435. doi: 10.1108/09696470710762646
- Song, M., Berends, H., Van Der Bij, H., & Weggeman, M. (2007). The Effect of IT and Co-location on Knowledge Dissemination. *Journal of Product Innovation Management*, 24(1), 52-68. doi: 10.1111/j.1540-5885.2006.00232.x
- Soo, K.-S. (2006). *Why workers share or do not share knowledge: A case study* (Doctoral dissertation, Indiana University, Bloomington, United States). Available from ProQuest Dissertations & Theses Full Text.
- Stake, R. E. (1995). *The art of case study research*. Thousand Oaks, United States: SAGE Publications Inc.
- Stennett, R. (1994). Job sharing in librarianship. *Librarian Career Development*, 2(1), 23-29.
- Sturges, J. E., & Hanrahan, K. J. (2004). Comparing Telephone and Face-to-Face Qualitative Interviewing: a Research Note. *Qualitative Research*, 4(1), 107-118. doi: 10.1177/1468794104041110
- Suddaby, R. (2010). Challenges for Institutional Theory. *Journal of Management Inquiry*, 19(1), 14-20. doi: 10.1177/1056492609347564
- Sun, S. L., Zhao, X., & Yang, H. (2010). Executive compensation in Asia: A critical review and outlook. *Asia Pacific Journal of Management*, 27(4), 775-802. doi: 10.1007/s10490-010-9207-7
- Supekar, K., Patel, C., & Lee, Y. (2004). Characterizing quality of knowledge on semantic web. In V. Barr & Z. Marko (Eds.), *Proceedings of the*

Seventeenth International Florida Artificial Intelligence Research Symposium Conference (472-478).

- Susan, E. J., Chih-Hsun, C., Erika, E. H., & Yuan, J. (2006). Toward Developing Human Resource Management Systems for Knowledge-Intensive Teamwork. *Research in Personnel and Human Resources Management*, 25, 27-70. doi: 10.1016/S0742-7301(06)25002-3
- Svasek, M., & Domecka, M. (2012). The autobiographical narrative interview: A potential area of emotional remembering, performance and reflection. In J. Skinner (Ed.), *The Interview: An Ethnographic Approach*. London, United Kingdom: Berg.
- Sveiby, K.-E., & Simons, R. (2002). Collaborative climate and effectiveness of knowledge work – an empirical study. *Journal of Knowledge Management*, 6(5), 420-433.
- Tan, M., Chaudhry, A. S., & Lee, C. (2009). Establishing the taxonomy of knowledge management: An analysis of the structural components of the discipline. *International Journal of Knowledge, Culture, and Change Management*, 9(3), 177-196.
- Taylor, B., Sinha, G., & Ghoshal, T. (2006). *Research methodology: A guide to for reseachers in management and social sciences*. New Delhi, India: Prentice-Hall of India Private Ltd.
- Te Brömmelstroet, M., & Bertolini, L. (2010). Integrating land use and transport knowledge in strategy-making. *Transportation*, 37(1), 85-104. doi: 10.1007/s11116-009-9221-0
- Tesch, R. (1990). *Qualitative Research: Analysis Types and Software Tools*. London, United Kingdom: RoutledgeFalmer.
- Thomas, A. B. (2004). *Research Skills for Management Studies*. London, United Kingdom: Routledge.
- Thomas, G. (2011). *How to do your case study: a guide for students and researchers*. London, United Kingdom: SAGE Publications Ltd.
- Thompson, G. N., Estabrooks, C. A., & Degner, L. F. (2006). Clarifying the concepts in knowledge transfer: a literature review. *Journal of Advanced Nursing*, 53(6), 691-701. doi: 10.1111/j.1365-2648.2006.03775.x
- Thompson, M. P., Jensen, R. J., & DeTienne, K. (2009). Engaging embedded information: Toward a holistic theory of knowledge transfer in organizations. *Competitiveness Review*, 19(4), 323-341. doi: 10.1108/10595420910977434
- Thomson Reuters. (2014). The new Web of Science - Providing a better search tool. Retrieved March 26, 2014, from <http://wokinfo.com/nextgenwebofscience>
- Timonen, H., & Jalonen, M. (2008). A Critical Review of Knowledge Management Literature: Introducing a Practice-Based Approach on Knowledge Sharing In D. Harorimana & D. Watkins (Eds.), *Proceedings of the 9th European Conference on Knowledge Management* (869-876).
- Tranfield, D., Denyer, D., & Smart, P. (2003). Towards a Methodology for Developing Evidence-Informed Management Knowledge by Means of Systematic Review. *British Journal of Management*, 14(3), 207-222. doi: 10.1111/1467-8551.00375
- Trochim, W. M. K. (2006). *Positivism & Post-Positivism* Retrieved from <http://www.socialresearchmethods.net/kb/positvsm.php>
- Usoro, A., & Kuofie, M. H. S. (2006). Conceptualisation of Cultural Dimensions as a Major Influence on Knowledge Sharing. *International Journal of Knowledge Management*, 2(2), 16-25. doi: 10.4018/jkm.2006040102
- Utami, F. M., & Utami, M. M. (2013). How Intellectual Stimulation Effects Knowledge Sharing, Innovation and Firm Performance. *International*

- Journal of Social Science and Humanity*, 3(4), 420-425. doi: 10.7763/IJSSH.2013.V3.274
- van den Hooff, B., & de Leeuw van Weenen, F. (2004). Committed to share: commitment and CMC use as antecedents of knowledge sharing. *Knowledge and Process Management*, 11(1), 13-24. doi: 10.1002/kpm.187
- Van den Hooff, B., & Hendrix, L. (2004). *Eagerness and willingness to share: The relevance of different attitudes towards knowledge sharing*. Paper presented at the 5th European Conference on Organizational Knowledge, Learning and Capabilities, Innsbruck, Austria.
- Van Wijk, R., Jansen, J. J. P., & Lyles, M. A. (2008). Inter- and Intra-Organizational Knowledge Transfer: A Meta-Analytic Review and Assessment of its Antecedents and Consequences. *Journal of Management Studies*, 45(4), 830-853. doi: 10.1111/j.1467-6486.2008.00771.x
- Vanderburg, W. H. (2000). *The Labyrinth of Technology*. Toronto, Canada: University of Toronto Press Inc.
- Vealey, R. S., & Chase, M. A. (2008). Self-confidence in sport. In T. S. Horn (Ed.), *Advances in sport psychology* (3rd ed., pp. 65-98). Champaign, United States: Human Kinetics.
- Wallen, N. E., & Fraenkel, J. R. (2001). *Educational Research: A Guide to the Process* (2nd ed.). Mahwah, United States: Lawrence Erlbaum Associates Inc.
- Wang, S., & Noe, R. A. (2010). Knowledge sharing: A review and directions for future research. *Human Resource Management Review*, 20(2), 115-131. doi: 10.1016/j.hrmr.2009.10.001
- Wang, Y., & Chao, C.-W. (2008). "Spillovers" and productivity: the case of the taiwanese high-tech firms. *Contemporary Economic Policy*, 26(2), 248-258. doi: 10.1111/j.1465-7287.2007.00057.x
- West, M. J., & King, A. P. (1996). Social Learning: Synergy and Songbirds. In C. M. Heyes & B. G. Galef (Eds.), *Social Learning In Animals: The Roots of Culture*: Elsevier Science.
- Westphal, T. G., & Shaw, V. (2005). Knowledge Transfers in Acquisitions - An Exploratory Study and Model. *Management International Review*, 45(2), 75-100.
- Wickramasinghe, V., & Widyaratne, R. (2012). Effects of interpersonal trust, team leader support, rewards, and knowledge sharing mechanisms on knowledge sharing in project teams. *VINE*, 42(2), 214-236. doi: 10.1108/03055721211227255
- Wiig, K. M. (2000). Knowledge Management: An Emerging Discipline Rooted in a Long History. In C. Despres & D. Chauvel (Eds.), *Knowledge Horizons: The present and the promise of knowledge management*. Oxford, United Kingdom: Butterworth-Heinemann.
- Willis, H. H., Curtright, A., Cecchine, G., Farah, Z. S., Geschwind, S. A., Hu, J., . . . Gibson, J. M. (2013). Prioritizing Environmental Risks to Health. In J. M. Gibson, A. S. Brammer, C. A. Davidson, T. Folley, F. J. Launay & J. T. Thomsen (Eds.), *Environmental Burden of Disease Assessment*. Dordrecht, Netherlands: Springer.
- Wilt, J., & Revelle, W. (2009). Extraversion. In M. R. Leary & R. H. Hoyle (Eds.), *Handbook of Individual Differences in Social Behavior*. New York, United States: The Guilford Press.
- Wimbush, J. C., Shepard, J. M., & Markham, S. E. (1997). An empirical examination of the relationship between ethical climate and ethical behavior from multiple levels of analysis. *Journal of Business Ethics*, 16(16), 1705-1716.
- Witherspoon, C. L., Bergner, J., Cockrell, C., & Stone, D. N. (2013). Antecedents of organizational knowledge sharing: a meta-analysis and critique. *Journal of*

- Knowledge Management*, 17(2), 250-277. doi: 10.1108/13673271311315204
- WorldatWork. (2007). *The WorldatWork Handbook of Compensation, Benefits & Total Rewards: A Comprehensive Guide for HR Professionals*. Hoboken, United States: John Wiley & Sons Inc.
- Wurzel, E. (2005). Why Germany needs structural reform. *CESifo Forum*, 6(4), 28-32.
- Xue, Y., Bradley, J., & Liang, H. (2011). Team climate, empowering leadership, and knowledge sharing. *Journal of Knowledge Management*, 15(2), 299-312. doi: 10.1108/13673271111119709
- Yang, C., & Chen, L.-C. (2007). Can organizational knowledge capabilities affect knowledge sharing behavior? *Journal of Information Science*, 33(1), 95-109. doi: 10.1177/0165551506068135
- Yang, J.-T., & Wan, C. S. C.-S. (2004). Advancing organizational effectiveness and knowledge management implementation. *Tourism Management*, 25(5), 593-601. doi: DOI: 10.1016/j.tourman.2003.08.002
- Yang, S.-B. (2007). The diffusion of organizational practice: Institutional factors affecting the adoption of self-managed work teams. *International Review of Public Administration*, 12(1), 93-103.
- Yang, S. J. H., & Chen, I. Y. L. (2008). A social network-based system for supporting interactive collaboration in knowledge sharing over peer-to-peer network. *International Journal of Human-Computer Studies*, 66(1), 36-50. doi: 10.1016/j.ijhcs.2007.08.005
- Yeşil, S., Koska, A., & Büyükbeşe, T. (2013). Knowledge Sharing Process, Innovation Capability and Innovation Performance: An Empirical Study. *Procedia - Social and Behavioral Sciences*, 75(0), 217-225. doi: <http://dx.doi.org/10.1016/j.sbspro.2013.04.025>
- Yi, J. (2009). A measure of knowledge sharing behavior: scale development and validation. *Knowledge Management Research & Practice*, 7(1), 65-81. doi: 10.1057/kmrp.2008.36
- Yin, R. K. (2009). *Case study research: design and methods* (4th ed.). Thousand Oaks, United States: SAGE Inc.
- York, K. M., & Miree, C. E. (2012). Searching for Trace Evidence of Strategic Management Decisions: Using Organizational Theory to Understand the Competitive Environment. *Journal of Strategic Management Education*, 8(2), 147-171.
- Yu, T.-K., Lu, L.-C., & Liu, T.-F. (2010). Exploring factors that influence knowledge sharing behavior via weblogs. *Computers in Human Behavior*, 26(1), 32-41. doi: 10.1016/j.chb.2009.08.002
- Zhang, X., Chen, Z., Vogel, D., Yuan, M., & Guo, C. (2010). Knowledge-sharing reward dynamics in knowledge management systems: Game theory-based empirical validation. *Human Factors and Ergonomics in Manufacturing & Service Industries*, 20(2), 103-122.
- Zimmerman, M. A., & Chu, H. M. (2013). Motivation, Success, and Problems of Entrepreneurs in Venezuela. *Journal of Management Policy and Practice*, 14(2), 76-90.
- Zins, C. (2007). Conceptual approaches for defining data, information, and knowledge. *Journal of the American Society for Information Science and Technology*, 58(4), 479-493. doi: 10.1002/asi.20508

Appendices

Appendix A: Databases and search terms for the systematic literature review

The table below lists all databases and search terms used to gain an overview of the knowledge sharing literature. Some of the databases have multiple sub-databases in which case only the ones deemed relevant are selected. The search terms consist of two parts. The first is 'knowledge sharing' or similar in the title. The second are reviews or meta-analyses or similar terms. The exact search syntax is recorded in the second column and preceded by with the number of results returned from each search. For example '113 @ TI((knowledge W/2 ("shar*" ...)' should be read as 113 results retrieved from the database given the words knowledge and shar* within two words of each other in the title. The final column records the relevant articles retrieved for the literature review.

However, as Heisig (2009, p. 9) and Sedera (2009, July) found, not all frameworks utilise the same terminology. In order to include as many reviews and meta-analysis despite differing terminology to 'sharing', the following words are incorporated from Heisig (2009, p. 9) and Sedera (2009, July): share, transfer, distribution, communication, collaborate, diffusion, dissemination, allocation, network and cooperate. In addition, the words knowledge exchange and flow from Van Wijk et al. (2008, p. 832) is included in the search terms.

Databases

Database name	Results @ Search term	Notes
1. <u>ABI/INFORM Complete</u>	113 @ TI((knowledge W/2	<i>Relevant documents:</i>
Databases:	("shar*" OR "trans*" OR	Witherspoon et al.
1. ERIC	"exchang*" OR "distribut*"	(2013)
2. LISA	OR "communicat*" OR	S. Wang and Noe
3. LLBA	"collaborat*" OR "diffus*" OR	(2010)
4. ABI/Inform Complete	"disseminat*" OR "allocat*"	
5. Research library	OR "networ*" OR "cooperat*"	
6. Social Science Journals	OR "flow")) AND ("a review"	
7. Dissertations & Theses: UK & Ireland	OR "meta analysis" OR	
8. Dissertations & Theses Full Text	"compar*" OR "synthes*" OR	
9. Sociological abstract	"narrative review"))	
	0 @ TI((knowledge W/2	

	<p>("shar*" OR "trans*" OR "exchang*" OR "distribut*" OR "communicat*" OR "collaborat*" OR "diffus*" OR "disseminat*" OR "allocat*" OR "networ*" OR "cooperat*" OR "flow")) AND ("metaanalysis"))</p>	
2. <u>ACM Digital Library</u>	<p>21 @ ((Title:knowledge) and ((Title:"a review") or (Title:"meta-analysis") or (Title:"meta analysis") or (Title:"metaanalysis") or (Title:"comparison") or (Title:"synthesis") or (Title:"narrative review"))))</p>	<p><i>Relevant documents:</i> None</p>
3. <u>British Library [main catalogue]</u>	<p>6 @ Main title contains: "knowledge sharing" AND Main title contains: "a review"</p> <p>2 @ Main title contains: "knowledge transfer" AND Main title contains: "a review"</p> <p>2 @ Main title contains: "knowledge exchange" AND Main title contains: "a review"</p> <p>0 @ Main title contains: "knowledge distribution" AND Main title contains: "a review"</p> <p>0 @ Main title contains: "knowledge communication" AND Main title contains: "a review"</p> <p>0 @ Main title contains: "knowledge collaboration" AND Main title contains: "a review"</p> <p>0 @ Main title contains: "knowledge diffusion" AND Main title contains: "a review"</p>	<p><i>Relevant documents:</i> Wang and Noe (2010) Mitton et al. (2007) <i>Considered documents:</i> Small and Sage (2005/2006). While the authors discussed knowledge sharing literature, they did not synthesise different models into a single framework. Fazey et al. (2012). They focused on knowledge exchange, of which knowledge sharing was a component of, among generation,</p>

0 @ Main title contains: “knowledge dissemination” AND Main title contains: “a review”	coproduction, comanagement, and brokerage. Hence article did not
0 @ Main title contains: “knowledge allocation” AND Main title contains: “a review”	concentrate on knowledge sharing specifically.
0 @ Main title contains: “knowledge network” AND Main title contains: “a review”	<i>Inaccessible</i> <i>documents:</i>
0 @ Main title contains: “knowledge cooperation” AND Main title contains: “a review”	Kosonen (2009) Slawinski and Jiang (2006)
0 @ Main title contains: “knowledge flow” AND Main title contains: “a review”	
<hr/>	
0 @ Main title contains: “knowledge sharing” AND Main title contains: “meta analysis” OR Main title contains: “metaanalysis”	
2 @ Main title contains: “knowledge transfer” AND Main title contains: “meta analysis” OR Main title contains: “metaanalysis”	
0 @ Main title contains: “knowledge exchange” AND Main title contains: “meta analysis” OR Main title contains: “metaanalysis”	
0 @ Main title contains: “knowledge distribution” AND Main title contains: “meta analysis” OR Main title contains: “metaanalysis”	
0 @ Main title contains: “knowledge communication”	

AND Main title contains:
“meta analysis” OR Main title
contains: “metaanalysis”
0 @ Main title contains:
“knowledge collaboration”
AND Main title contains:
“meta analysis” OR Main title
contains: “metaanalysis”
0 @ Main title contains:
“knowledge diffusion” AND
Main title contains: “meta
analysis” OR Main title
contains: “metaanalysis”
0 @ Main title contains:
“knowledge dissemination”
AND Main title contains:
“meta analysis” OR Main title
contains: “metaanalysis”
0 @ Main title contains:
“knowledge allocation” AND
Main title contains: “meta
analysis” OR Main title
contains: “metaanalysis”
0 @ Main title contains:
“knowledge network” AND
Main title contains: “meta
analysis” OR Main title
contains: “metaanalysis”
0 @ Main title contains:
“knowledge cooperation”
AND Main title contains:
“meta analysis” OR Main title
contains: “metaanalysis”
0 @ Main title contains:
“knowledge flow” AND Main
title contains: “meta analysis”
OR Main title contains:
“metaanalysis”

9 @ Main title contains:

"knowledge sharing" AND
Main title contains:
"comparison"
6 @ Main title contains:
"knowledge transfer" AND
Main title contains:
"comparison"
2 @ Main title contains:
"knowledge exchange" AND
Main title contains:
"comparison"
0 @ Main title contains:
"knowledge distribution" AND
Main title contains:
"comparison"
0 @ Main title contains:
"knowledge communication"
AND Main title contains:
"comparison"
0 @ Main title contains:
"knowledge collaboration"
AND Main title contains:
"comparison"
1 @ Main title contains:
"knowledge diffusion" AND
Main title contains:
"comparison"
0 @ Main title contains:
"knowledge dissemination"
AND Main title contains:
"comparison"
0 @ Main title contains:
"knowledge allocation" AND
Main title contains:
"comparison"
1 @ Main title contains:
"knowledge network" AND
Main title contains:
"comparison"

0 @ Main title contains:

“knowledge cooperation”

AND Main title contains:

“comparison”

0 @ Main title contains:

“knowledge flow” AND Main

title contains: “comparison”

1 @ Main title contains:

“knowledge sharing” AND

Main title contains:

“synthesis”

1 @ Main title contains:

“knowledge transfer” AND

Main title contains:

“synthesis”

3 @ Main title contains:

“knowledge exchange” AND

Main title contains:

“synthesis”

1 @ Main title contains:

“knowledge distribution” AND

Main title contains:

“synthesis”

1 @ Main title contains:

“knowledge communication”

AND Main title contains:

“synthesis”

2 @ Main title contains:

“knowledge collaboration”

AND Main title contains:

“synthesis”

1 @ Main title contains:

“knowledge diffusion” AND

Main title contains:

“synthesis”

6 @ Main title contains:

“knowledge dissemination”

AND Main title contains:

“synthesis”

0 @ Main title contains:
"knowledge allocation" AND

Main title contains:
"synthesis"

7 @ Main title contains:
"knowledge network" AND

Main title contains:
"synthesis"

1 @ Main title contains:
"knowledge cooperation"

AND Main title contains:
"synthesis"

0 @ Main title contains:
"knowledge flow" AND Main
title contains: "synthesis"

0 @ Main title contains:
"knowledge sharing" AND
Main title contains: "narrative
review"

0 @ Main title contains:
"knowledge transfer" AND
Main title contains: "narrative
review"

0 @ Main title contains:
"knowledge exchange" AND
Main title contains: "narrative
review"

0 @ Main title contains:
"knowledge distribution" AND
Main title contains: "narrative
review"

0 @ Main title contains:
"knowledge communication"
AND Main title contains:
"narrative review"

0 @ Main title contains:
"knowledge collaboration"
AND Main title contains:
"narrative review"

0 @ Main title contains:
 “knowledge diffusion” AND
 Main title contains: “narrative
 review”

0 @ Main title contains:
 “knowledge dissemination”
 AND Main title contains:
 “narrative review”

0 @ Main title contains:
 “knowledge allocation” AND
 Main title contains: “narrative
 review”

0 @ Main title contains:
 “knowledge network” AND
 Main title contains: “narrative
 review”

0 @ Main title contains:
 “knowledge cooperation”
 AND Main title contains:
 “narrative review”

0 @ Main title contains:
 “knowledge flow” AND Main
 title contains: “narrative
 review

4. Business Source Premier

Note: Business Source Premier and Business Source Elite are both databases under EBSCO Host. However, according to the publisher, the total number of journals & magazines indexed and abstracted were identical in the November/December 2013 title lists (<http://www.ebscoh>)

		<p>ost.com/title-lists).</p> <p>Hence Business Source Elite was used as part of the EBSCO Host search (see further below).</p>
5. <u>CGpublisher</u>	113 @ knowledge review in Description, All publishers	<p><i>Relevant documents:</i></p> <p>None</p> <p><i>Considered articles:</i></p> <p>Tan, Chaudhry, and Lee (2009) provided a taxonomy on knowledge management, including knowledge sharing. However, taxonomy was confusing as some terminology was referred to as a category and subcategory e.g. narrative transfer seemed to be a category but also found under the category of knowledge sharing methods.</p>
6. <u>Copac</u>		<p><i>Note:</i> Merged online catalogue between universities.</p> <p>However, requires physical borrowing of items.</p>
7. <u>Directory of Open Access Journals</u>	37 @ (ti:knowledge) AND (ti:"a review") 2 @ (ti:knowledge) AND	<p><i>Relevant documents:</i></p> <p>None</p>

	(ti:"meta analysis") OR (ti:"metaanalysis") 134 @ (ti:knowledge) AND (ti:"compar*") 13 @ (ti:knowledge) AND (ti:"synthes*") 0 @ (ti:knowledge) AND (ti:"narrative review")	
8. <u>EBSCO Host</u> Ensure all four databases selected! Databases: 1. Academic Search Elite 2. Business Source Elite 3. eBook collection 4. E-Journals 5. Library, Information Science & Technology Abstracts	13 @ TI "knowledge sharing" AND TI "a review" 1 @ TI "knowledge sharing" AND TI "meta analysis" OR TI metaanalysis 18 @ TI "knowledge sharing" AND TI compar* 1 @ TI "knowledge sharing" AND TI synthes* 0 @ TI "knowledge sharing" AND TI "narrative review" <hr/> 40 @ TI "knowledge trans*" AND TI "a review" 1 @ TI "knowledge trans*" AND TI "meta analysis" OR TI metaanalysis 17 @ TI "knowledge trans*" AND TI compar* 3 @ TI "knowledge trans*" AND TI synthes* 0 @ TI "knowledge trans*" AND TI "narrative review" <hr/> 4 @ TI "knowledge exchange*" AND TI "a review" 0 @ TI "knowledge exchange*" AND TI "meta analysis" OR TI metaanalysis 1 @ TI "knowledge exchange*" AND TI compar* 0 @ TI "knowledge exchange*" AND TI synthes*	<i>Relevant documents:</i> Meese and McMahon (2012) Wang and Noe (2010) Witherspoon et al. (2013) Mitton et al. (2007) Van Wijk et al. (2008) Contandriopoulos et al. (2010) <i>Considered documents:</i> Ghobadi and D'Ambra (2011). Review focused on cooperation and competition, not knowledge sharing at a high level. Rajić, Young, and McEwen (2013). While the authors discussed five key themes for effective knowledge translation and transfer, their focus was on decision

0 @ TI "knowledge exchange*"	making, not
AND TI "narrative review"	knowledge sharing
0 @ TI "knowledge distribut*"	itself.
AND TI "a review"	LaRocca, Yost,
0 @ TI "knowledge distribut*"	Dobbins, Ciliska, and
AND TI "meta analysis" OR TI	Butt (2012).
metaanalysis	Knowledge
0 @ TI "knowledge distribut*"	translation strategies
AND TI compar*	included CD ROM
0 @ TI "knowledge distribut*"	and internet, thus
AND TI synthes*	was not directed at
0 @ TI "knowledge distribut*"	knowledge sharing.
AND TI "narrative review"	Pentland et al.
0 @ TI "knowledge	(2011) provided
communicat*" AND TI "a	three sub-groups
review"	that contributed to
0 @ TI "knowledge	the value of
communicat*" AND TI "meta	knowledge transfer
analysis" OR TI metaanalysis	initiatives. Thus was
2 @ TI "knowledge	focused on value
communicat*" AND TI	creation rather than
compar*	knowledge sharing
0 @ TI "knowledge	itself.
communicat*" AND TI	G. N. Thompson,
synthes*	Estabrooks, and
0 @ TI "knowledge	Degner (2006).
communicat*" AND TI	Concentrated on
"narrative review"	opinion leaders,
0 @ TI "knowledge	facilitators,
collaborat*" AND TI "a	champions, linking
review"	agents and change
0 @ TI "knowledge	agents, not directly
collaborat*" AND TI "meta	knowledge sharing.
analysis" OR TI metaanalysis	Fazey et al. (2012).
2 @ TI "knowledge	See notes earlier in
collaborat*" AND TI compar*	this table.
0 @ TI "knowledge	Hutchinson and
collaborat*" AND TI synthes*	Huberman (1994)
0 @ TI "knowledge	concentrated on

collaborat*" AND TI "narrative review"	concepts that can measure successful
0 @ TI "knowledge diffus*" AND TI "a review"	knowledge dissemination rather
0 @ TI "knowledge diffus*" AND TI "meta analysis" OR TI metaanalysis	than the components that influence it.
1 @ TI "knowledge diffus*" AND TI compar*	Phelps et al. (2012) examined networks
0 @ TI "knowledge diffus*" AND TI synthes*	and knowledge sharing was only one
0 @ TI "knowledge diffus*" AND TI "narrative review"	aspect of knowledge outcomes.
3 @ TI "knowledge disseminat*" AND TI "a review"	<i>Inaccessible documents:</i>
0 @ TI "knowledge disseminat*" AND TI "meta analysis" OR TI metaanalysis	Kosonen (2009)
0 @ TI "knowledge disseminat*" AND TI compar*	
0 @ TI "knowledge disseminat*" AND TI synthes*	
0 @ TI "knowledge disseminat*" AND TI "narrative review"	
0 @ TI "knowledge allocat*" AND TI "a review"	
0 @ TI "knowledge allocat*" AND TI "meta analysis" OR TI metaanalysis	
0 @ TI "knowledge allocat*" AND TI compar*	
0 @ TI "knowledge allocat*" AND TI synthes*	
0 @ TI "knowledge allocat*" AND TI "narrative review"	
3 @ TI "knowledge networ*" AND TI "a review"	

	<p>0 @ TI "knowledge networ**" AND TI "meta analysis" OR TI metaanalysis</p> <p>7 @ TI "knowledge networ**" AND TI compar*</p> <p>1 @ TI "knowledge networ**" AND TI synthes*</p> <p>0 @ TI "knowledge networ**" AND TI "narrative review"</p> <hr/> <p>0 @ TI "knowledge cooperat**" AND TI "a review"</p> <p>0 @ TI "knowledge cooperat**" AND TI "meta analysis" OR TI metaanalysis</p> <p>0 @ TI "knowledge cooperat**" AND TI compar*</p> <p>0 @ TI "knowledge cooperat**" AND TI synthes*</p> <p>0 @ TI "knowledge cooperat**" AND TI "narrative review"</p> <hr/> <p>1 @ TI "knowledge flow" AND TI "a review"</p> <p>0 @ TI "knowledge flow" AND TI "meta analysis" OR TI metaanalysis</p> <p>1 @ TI "knowledge flow" AND TI compar*</p> <p>0 @ TI "knowledge flow" AND TI synthes*</p> <p>0 @ TI "knowledge flow" AND TI "narrative review"</p>	
<p>9. Elsevier SD Freedom Collection</p>		<p><i>Note:</i> Available via ScienceDirect, which is accessed via SciVerse Hub. Results shown in table further below.</p>
<p>10 Emerald Collections</p>	<p>41 @ All content, (<i>knowledge</i></p>	<p><i>Relevant documents:</i></p>

	<p>in Content item title) and (<i>a review</i> in Content item title), inc. EarlyCite articles, inc. Backfiles content</p> <p>2 @ All content, (<i>knowledge</i> in Content item title) and (<i>meta analysis</i> OR <i>metaanalysis</i> in Content item title), inc. EarlyCite articles, inc. Backfiles content</p> <p>33 @ All content, (<i>knowledge</i> in Content item title) and (<i>compar*</i> in Content item title), inc. EarlyCite articles, inc. Backfiles content</p> <p>7 @ All content, (<i>knowledge</i> in Content item title) and (<i>synthes*</i> in Content item title), inc. EarlyCite articles, inc. Backfiles content</p> <p>0 @ All content, (<i>knowledge</i> in Content item title) and (<i>narrative review</i> in Content item title), inc. EarlyCite articles, inc. Backfiles</p>	<p>Witherspoon et al. (2013)</p>
11 Highwire Press Journals		<p><i>Note: No institutional subscription to this database.</i></p>
12 <u>InderScience</u>	<p>12 @ ti:(knowledge) and ti:(a and review)</p> <p>0 @ ti:(knowledge) and ti:(meta and analysis) OR ti:(meta-analysis) OR ti:(meta analysis)</p> <p>10 @ ti:(knowledge) and ti:(compar*)</p> <p>4 @ ti:(knowledge) and ti:(synthes*)</p>	<p><i>Inaccessible documents: Kosonen (2009)</i></p>

	0 @ ti:(knowledge) and ti:(narrative and review)	
13 <u>INFORMS PubsOnLine</u>		<i>Note:</i> No institutional subscription to this database.
14 <u>InfoSci-Journals (Full collection) (IGI Global)</u>		<i>Note:</i> Unable to use database as Boolean operators don't seem to work
15 <u>International bibliography of the social sciences (IBSS) via ProQuest</u>	22 @ TI(((knowledge W/2 ("shar*" OR "trans*" OR "exchang*" OR "distribut*" OR "communicat*" OR "collaborat*" OR "diffus*" OR "disseminat*" OR "allocat*" OR "networ*" OR "cooperat*" OR "flow")) AND ("a review" OR "meta analysis" OR "compar*" OR "synthes*" OR "narrative review"))	<i>Relevant documents:</i> Mitton et al. (2007) <i>Considered documents:</i> Phelps et al. (2012), see details in table further above.
16 <u>Jstor Arts, Sciences and Life Sciences</u>	71 @ (ti:(knowledge) AND ti:(a review")) 3 @ (ti:(knowledge) AND ti:(meta analysis")) OR ti:(metaanalysis")) 188 @ (ti:(knowledge) AND ti:(compar*)) plus manual search of ("shar*" OR "trans*" OR "exchang*" OR "distribut*" OR "communicat*" OR "collaborat*" OR "diffus*" OR "disseminat*" OR "allocat*" OR "networ*" OR "cooperat*" OR "flow") 54 @ (ti:(knowledge) AND ti:(synthes*)) 0 @ (ti:(knowledge) AND	<i>Relevant documents:</i> Mitton et al. (2007)

	ti:("narrative review"))	
17 <u>Library literature & information science full text</u> (via EBSCO Host)	12 @ TI knowledge AND TI "a review" 0 @ @ TI knowledge AND TI "meta analysis" OR "metaanalysis" 35 @ TI knowledge AND TI compar* 8 @ TI knowledge AND TI synthes* 0 @ TI knowledge AND TI "narrative review"	<i>Relevant documents:</i> None
18 Metapress Journals		<i>Note:</i> No institutional subscription to this database.
19 <u>Net Library eBooks</u>	24 @ Subject:knowledge	Accessed via EBSCO Host. See overall search results in table further above under EBSCO Host database
20 <u>PAIS international</u>		<i>Note:</i> No institutional subscription to this database.
21 <u>Palgrave</u>		<i>Note:</i> No institutional subscription to this database.
22 <u>SAGE Premier (Journals)</u> Disciplines: 1. Engineering & Computing 2. Social Sciences & Humanities	15 @ knowledge and "a review" in Title 6 @ knowledge and meta analysis or metaanalysis in Title 73 @ knowledge and compar* in Title 12 @ knowledge and synthes* in Title	<i>Relevant documents:</i> None <i>Considered documents:</i> Phelps et al. (2012), see details in table further above.

	0 @ knowledge and narrative review in Title	
23 <u>ScienceDirect</u>	73 @ TITLE(knowledge) and TITLE(a review)	<i>Relevant documents:</i> Wang and Noe (2010)
Disciplines:	TITLE(meta analysis) or TITLE(metaanalysis)	<i>Considered documents:</i>
1. Arts and Humanities	10 @ TITLE(knowledge) and TITLE(meta analysis) or TITLE(metaanalysis)	Dokhtesmati and Bousari (2013). Although the authors conducted a meta-analysis, the categories surrounding knowledge sharing were adopted from a prior study and hence not considered relevant for the meta-analysis stage. Also, quality of the article is questionable as methodology of searching for articles was not made explicit.
2. Business Management and Accounting	119 @ TITLE(knowledge) and TITLE(compar*)	
3. Computer Science	32 @ TITLE(knowledge) and TITLE(synthes*)	
4. Decision Science	0 @ TITLE(knowledge) and TITLE(narrative review)	
5. Economics, Econometrics and Finance		
6. Social Science		
24 <u>Scirus</u>	264 @ title:knowledge (title:"a review")	<i>Note:</i> Decommissioned early 2014.
Subject areas:	(title:"meta analysis") OR (title:"metaanalysis")	<i>Relevant documents:</i> Mitton et al. (2007)
1. Computer Science	189 @ title:knowledge (title:"meta analysis") OR (title:"metaanalysis")	
2. Economics, Business and Management	22 @ title:knowledge AND title:shar* (title:compar*)	<i>Considered documents:</i> Phelps et al. (2012). See details further
3. Social and Behavioral Sciences	154 @ title:"knowledge trans*" (title:compar*)	
4. Sociology	22 @ title:"knowledge exchang*" (title:compar*)	

2 @ title:"knowledge	above.
distribut*" (title:compar*)	Periorellis and
1 @ title:"knowledge	Bokma (1998).
communicat*" (title:compar*)	Article concentrated
0 @ title:"knowledge	on enterprise
collaborat*" (title:compar*)	modelling, not on
8 @ title:"knowledge diffus*"	knowledge sharing.
(title:compar*)	Dokhtesmati and
0 @ title:"knowledge	Bousari (2013). See
disseminat*" (title:compar*)	details above.
0 @ title:"knowledge	Kelechi and
allocat*" (title:compar*)	Naccarato (2010).
820 @ title:"knowledge	Guidelines on how to
networ*" (title:compar*)	summarise and
REFINED:	synthetise the
27 @ title:"knowledge	literature, not a
networ*" (title:compar*)	literature review
ANDNOT (title:ACE)	itself on knowledge
0 @ title:"knowledge	sharing.
cooperat*" (title:compar*)	
2 @ title:"knowledge flow"	<i>Inaccessible</i>
(title:compar*)	<i>documents:</i>
3 @ title:"knowledge shar*"	Helm and Meckl
(title:synthes*)	(2004)
34 @ title:"knowledge trans*"	
(title:synthes*)	
1 @ title:"knowledge	
exchang*" (title:synthes*)	
0 @ title:"knowledge	
distribut*" (title:synthes*)	
0 @ title:"knowledge	
communicat*" (title:synthes*)	
0 @ title:"knowledge	
collaborat*" (title:synthes*)	
0 @ title:"knowledge diffus*"	
(title:synthes*)	
1 @ title:"knowledge	
disseminat*" (title:synthes*)	
0 @ title:"knowledge	

	allocat*" (title:synthes*) 1 @ title:"knowledge networ*" (title:synthes*) 0 @ title:"knowledge cooperat*" (title:synthes*) 0 @ title:"knowledge flow" (title:synthes*) 1 @ title:knowledge (title:"narrative review")	
25 <u>SciVerse Hub</u>		<i>Note: Service retired. ScienceDirect and Scopus two separate databases again.</i>
26 <u>Scopus</u>	152 @ TITLE(knowledge AND Subject areas: "a review") SUBJAREA(mult OR comp 35 @ TITLE(knowledge AND OR arts OR busi OR deci "meta analysis" OR OR econ OR psyc OR soci) "metaanalysis) 31 @ TITLE("knowledge shar*" AND compar*) 10 @ TITLE("knowledge trans*" AND compar*) 1 @ TITLE("knowledge exchang*" AND compar*) 0 @ TITLE("knowledge distribut*" AND compar*) 0 @ TITLE("knowledge communicat*" AND compar*) 0 @ TITLE("knowledge collaborat*" AND compar*) 1 @ TITLE("knowledge diffus*" AND compar*) 0 @ TITLE("knowledge disseminat*" AND compar*) 0 @ TITLE("knowledge allocat*" AND compar*) 7 @ TITLE("knowledge networ*" AND compar*) 0 @ TITLE("knowledge	<i>Relevant documents:</i> Wang and Noe (2010) Witherspoon et al. (2013) Luo and Yin (2008) Mitton et al. (2007) <i>Considered documents:</i> Mtega, Dulle, and Ronald (2013). Although the authors identified components of knowledge sharing, they adopted them from prior research, rather than conceptualising them themselves. Phelps et al. (2012). See details further above. Ling (2007). Although the paper

	<p>cooperat*" AND compar*) 6 @ TITLE("knowledge flow" AND compar*) 144 @ TITLE(knowledge AND synthes*) 0 @ TITLE(knowledge AND "narrative review")</p>	<p>evaluated four different knowledge transfer models, the synthesis between them is minimal and did not provide a new model based on it.</p> <p><i>Inaccessible documents: Kosonen (2009)</i></p>
27 SpringerLink	<p>5,138 @ "a review" AND knowledge in title. REFINED 61 @ "a review" NEAR knowledge in title 3 @ "meta analysis" OR "metaanalysis" NEAR knowledge in title 0 @ compar* NEAR knowledge 0 @ synthes* NEAR knowledge 0 @ "narrative review" NEAR knowledge</p>	<p><i>Relevant documents: None</i></p> <p><i>Note: The NEAR operator (case- insensitive) will return results where the search term on the left is within ten words of the word to the right of the NEAR operator.</i></p>
28 SwetsWise		<p><i>Note: No institutional subscription to this database.</i></p>
29 Web of Knowledge	<p>32 @ Title=(knowledge) AND Title=("a review") AND Title=("shar*" OR "trans*" OR "exchang*" OR "distribut*" OR "communicat*" OR "collaborat*" OR "diffus*" OR "disseminat*" OR "allocat*" OR "networ*" OR "cooperat*")</p>	<p><i>Note: Web of Knowledge was rebranded Web of Science as of 12 January 2014.</i></p> <p><i>Relevant documents: Wang and Noe (2010)</i></p>

OR "flow"))	Witherspoon et al.
10 @ Title=(knowledge) AND	(2013)
Title=("meta analysis" OR	Mitton et al. (2007)
"metaanalysis") AND	
Title=(("shar*" OR "trans*"	
OR "exchang*" OR	Considered
"distribut*" OR	documents:
"communicat*" OR	Fazey et al. (2012).
"collaborat*" OR "diffus*" OR	See details further
"disseminat*" OR "allocat*"	above.
OR "networ*" OR "cooperat*"	Phelps et al. (2012),
OR flow))	see details in table
107 @ Title=(knowledge) AND	further above.
Title=(compar*) AND	Ling (2007). See
Title=(("shar*" OR "trans*"	details further
OR "exchang*" OR	above.
"distribut*" OR	Dokhtesmati and
"communicat*" OR	Bousari (2013). See
"collaborat*" OR "diffus*" OR	details above.
"disseminat*" OR "allocat*"	
OR "networ*" OR "cooperat*"	
OR flow))	<i>Inaccessible</i>
46 @ Title=(knowledge) AND	<i>documents:</i>
Title=(synthes*) AND	Iqbal, Toulson, and
Title=(("shar*" OR "trans*"	Tweed (2010)
OR "exchang*" OR	Marouf (2004)
"distribut*" OR	
"communicat*" OR	
"collaborat*" OR "diffus*" OR	
"disseminat*" OR "allocat*"	
OR "networ*" OR "cooperat*"	
OR flow))	
0 @ Title=(knowledge) AND	
Title=("narrative review")	
AND Title=(("shar*" OR	
"trans*" OR "exchang*" OR	
"distribut*" OR	
"communicat*" OR	
"collaborat*" OR "diffus*" OR	

	"disseminat*" OR "allocat*" OR "networ*" OR "cooperat*" OR flow))	
30	Web of Science	<i>Note:</i> Accessed via Web of Knowledge. Web of Knowledge was rebranded Web of Science as of 12 January 2014.
31	<u>Wiley Online Library</u> 99 @ knowledge in Article Titles AND "a review" in Article Titles 5 @ knowledge in Article Titles AND "meta analysis" OR "metaanalysis" in Article Titles 141 @ knowledge in Article Titles AND compar* in Article Titles 39 @ knowledge in Article Titles AND synthes* in Article Titles 1 @ knowledge in Article Titles AND narrative review in Article Titles	<i>Relevant documents:</i> Van Wijk et al. (2008) Contandriopoulos et al. (2010) Mitton et al. (2007) <i>Considered documents:</i> G. N. Thompson et al. (2006). See details further above.
32	<u>ZETOC</u>	<i>Note:</i> Provides access to the British Library's Electronic Table of Contents. As the British Library's main catalogue is searched above, this database is not searched in addition.

Conference proceedings

Conference proceeding name	Results @ Search term	Notes
1. Conference Proceedings		Accessed via Web of

Citation Index- Science	Knowledge. See overall search results in table further above under Web of Knowledge database.
2. Conference Proceedings Citation Index- Social Science & Humanities	Accessed via Web of Knowledge. See overall search results in further above under the Web of Knowledge database.
3. International Conference on Knowledge Management and Information Sharing conference (KMIS)	Full access via SCITEPRESS Digital Library but no institutional subscription to this database. Partial publication via Springer-Verlag, which is indexed in Scopus (which has been searched in database table above).
4. Knowledge Management International Conference and Exhibition (KMICe)	<p>In title: "review" "meta" "compar" "synthes" "narrative"</p> <p><i>Relevant documents:</i> None</p> <p><i>Websites:</i> 3 @ http://www.kmice.cms.net.my/ProckMICe/KMICe2012/KMICe2012ToC.html 4 @ http://www.kmice.cms.net.my/ProckMICe/KMICe2010/TOC.h</p>

		<p>tml</p> <p>4 @</p> <p>http://www.kmice.cms.net.my/ProckMICe/KMICe2008/TOC.html</p> <p>tml</p> <p>Cannot access proceedings:</p> <p>http://www.kmice.cms.net.my/ProckMICe/KMICe2006/KmiceProc.html</p> <p>0 @</p> <p>http://www.kmice.cms.net.my/ProckMICe/KMICe2004/index.htm</p>
5. European Conference on Knowledge Management (ECKM)	<p>In title:</p> <p>“review”</p> <p>“meta”</p> <p>“<i>compar</i>”</p> <p>“<i>synthes</i>”</p> <p>“<i>narrative</i>”</p>	<p><i>Note:</i> No institutional subscription to conference proceedings.</p> <p><i>Inaccessible documents:</i></p> <p>Scarso (2009)</p> <p>Alias, Hall, and Bennett (2008)</p> <p>Timonen and Jalonen (2008)</p> <p><i>Websites:</i></p> <p>3 @</p> <p>http://academic-conferences.org/eckm/eckm2013/eckm13-proceedings.htm</p> <p>8 @</p> <p><a 479="" 517="" 937="" 955"="" data-label="Page-Footer" href="http://academic-</p> </td> </tr> </table> </div> <div data-bbox="> <p>248</p> </p>

		conferences.org/eckm/eckm2012/eckm12-proceedings.htm 5 @ http://www.academic-conferences.org/eckm/eckm2011/eckm11-proceedings.htm 3 @ http://www.academic-conferences.org/eckm/eckm2011/eckm10-proceedings.htm 1 @ http://academic-conferences.org/eckm/eckm2010/eckm09-proceedings.htm 4 @ http://academic-conferences.org/eckm/eckm2008/eckm08-proceedings.htm
6. International Conferences on Intellectual Capital, Knowledge Management and Organisational Learning (ICICKM)	In title: “review” “meta” “compar” “synthes” “narrative”	<i>Note:</i> No institutional subscription to conference proceedings. <i>Relevant documents:</i> None <i>Considered documents:</i> Ammann (2008) <i>Websites:</i>

1 @
<http://academic-conferences.org/icickm/icickm2013/icickm13-proceedings.htm>

2 @
<http://academic-conferences.org/icickm/icickm2013/icickm12-proceedings.htm>

4 @
<http://academic-conferences.org/icickm/icickm2011/icickm11-proceedings.htm>

1 @
<http://www.academic-conferences.org/icickm/icickm2011/icickm10-proceedings.htm>

2 @
<http://academic-conferences.org/icickm/icickm2010/icickm09-proceedings.htm>

X @
<http://academic-conferences.org/icickm/icickm2008/icickm08-proceedings.htm>

7. I-Know conference

Accessed via ACM Digital Library. See

		overall search results in previous table under ACM Digital Library database ²¹
8. International Conference on Knowledge Management (ICKM)	In title: “review” “meta” “ <i>compar</i> ” “ <i>synthes</i> ” “ <i>narrative</i> ”	Note: ICKM 2013 ²² , 2012 ²³ , 2011 ²⁴ is indexed in Scopus. ICKM 2010 in Web of Knowledge. ICKM 2009: 2 @ http://baoman.files.wordpress.com/2009/12/ickm-2009-program1.pdf No institutional subscription to conference proceedings from ICKM 2008.
9. Practical Aspects of Knowledge Management (PAKM)		<i>Note:</i> Seemed to have ceased after 2010 conference. PAKM 2010 via Springer ²⁵ PAKM 2008 0 @ http://dblp.uni-trier.de/db/conf/pakm/pakm2008.html
10 iSchool conferences	In IDEALS: 14 @ ((title:knowledge) AND (title:review)) 0 @ ((title:knowledge) AND (title:meta)) 4 @ ((title:knowledge) AND	<i>Relevant documents:</i> None iConference 2013, 2010, 2009, 2008 and 2006 via IDEALS

²¹ See http://www.acm.org/publications/icp_series

²² See <http://www.waset.org/conferences/2013/kualalumpur/ickm/>

²³ See <http://conference.researchbib.com/?eventid=14773>

²⁴ See <http://www.scholarsden.org/conferences-worldwide/63-latest-conferences/226-ickm-2011-international-conference-on-knowledge-management.html>

²⁵ See <http://discuss.it.uts.edu.au/pipermail/planetkr/2010-May/000247.html>

	(title:compar*) 2 @ ((title:knowledge) AND (title:synthes*)) 3 @ ((title:knowledge) AND (title:narrative))	(https://www.ideals.illinois.edu/advance-d-search) iConference 2012 and 2011 via ACM Digital Library. See overall search results further above under the ACM Digital Library database
11 Organizational Learning, Knowledge and Capabilities (OLKC)	In title: "review" "meta" "compar" "synthes" "narrative"	Accessed via http://www.olkc.net/ <i>Relevant documents:</i> None 4 @ OLKC 2011 2 @ OLKC 2010 3 @ OLKC 2009 1 @ OLKC 2008 1 @ OLKC 2007 3 @ OLKC 2006
12 European Group for Organizational Studies (EGOS)		<i>Note:</i> Do not seem to have conference proceedings.

Higher degree dissertations

Dissertation database name	Results @ Search term	Notes
1. Dissertations & Theses: UK & Ireland		Accessed via ABI/INFORM Complete. See overall search results under ABI/INFORM Complete database.
2. Dissertations & Theses Full Text		Accessed via ABI/INFORM

		Complete. See overall search results under ABI/INFORM Complete database.
3. Networked Digital Library of Theses and Dissertations		Accessed via Scirus. See overall search results under Scirus database ²⁶ .
4. White Rose [includes articles]	1 @ Title matches all of "review knowledge" 0 @ Title matches "meta knowledge" 1 @ Title matches "compar* knowledge" 0 @ Title matches "synthes* knowledge" 0 @ Title matches "narrative knowledge"	Accessed via http://eprints.whiterose.ac.uk/cgi/search/advanced <i>Relevant documents:</i> None

Grey literature

Source	Results @ Search term	Notes
1. Google.co.uk	461 @ allintitle: knowledge sharing review[reviewed the first 100 documents] 31 @ allintitle: knowledge sharing meta-analysis OR metaanalysis 1260 @ allintitle: knowledge sharing comparison [Google advised that articlese 82+ were very similar to the first 82 articles displayed] 67 @ allintitle: knowledge sharing synthesis 56 @ allintitle: knowledge sharing narrative	<i>Relevant documents:</i> Wang and Noe (2010) Cummings (2003) Witherspoon et al. (2013) Van Wijk et al. (2008) Mitton et al. (2007) <i>Considered documents:</i> Ghobadi and D'Ambra (2011). See details further

²⁶ See <http://www.ndltd.org/resources/find-etds>

above.

Kijl (2010). This article examined the top 10 theories in knowledge sharing based on citation and then combined the individual theories into one large map. However, it did not separate concepts from categories or key categories and thus does not provide a high level overview of the knowledge sharing literature.

Small and Sage (2005/2006). See details further above.

Amayah (2011, September). The literature review was limited by the author's search terms and thus the categories influencing knowledge sharing were pre-given rather than emerged from the findings.

Rehman, Mahmood, Salleh, and Amin (2010).

Not a systematic review of the literature
Patel et al. (2011). Article focused on knowledge readiness or phenomenon of change for knowledge sharing not directly on knowledge sharing.
Mengis and Epler (2005). Article focused on conversation, rather than directly knowledge sharing.
Chou and Chang (2011). Although article title emphasised knowledge sharing, abstract clarified that article concentrated on internet addiction
Liu, Liang, Rajagopalan, Sambamurthy, and Wu (2011). The authors developed hypotheses and then tested them via a meta-analysis. Hence influences were predefined and did not emerge through meta-

			analysis. Pentland et al. (2011). See details further above. <i>Inaccessible documents:</i> Aris (2013) Kosonen (2009) Gang, Man, Jinghao, and Guanghui (2013). Article is in Chinese. Jingnan (2010). Article is in Chinese. Mario Roy, Guindon, and Fortier (1995). Article is in French.
2.	Strategic and Competitive Intelligence Professionals	In Google search 96 @ "a review" site:www.scip.org then manual search for "knowledge" 2 @ "meta analysis" OR "metaanalysis" site:www.scip.org 146 @ comparison site:www.scip.org then manual search for "knowledge" 31 @ synthesis site:www.scip.org then manual search for "knowledge" 40 @ narrative site:www.scip.org then	<i>Relevant documents:</i> None

manual search for
"knowledge"

3. KM World magazine

Accessed via
<http://www.kmworld.com/Archives/>

Note: Unable to use
website as search
function does not
seem to return
results.

Appendix B: Databases and search terms utilised to obtain number of knowledge sharing studies per country

This meta-analysis focuses on the number of knowledge sharing studies per country to substantiate that there is sufficient literature to evaluate the developed holistic framework against. Guidance on database selection and criteria was provided by Raub and Rüling (2001, p. 116), Gordon and Grant (2005, p. 28) and Van Wijk et al. (2008, p. 836) who focused on investigating the number of knowledge management, knowledge management systems, and knowledge transfer and acquisition studies, respectively. Raub and Rüling (2001, p. 116) retrieved abstracts from the ABI/Inform database searching for 'knowledge management' in the title, keywords or abstract. Gordon and Grant (2005, p. 28) selected the same database four years later arguing that due to its size (over four million articles in business journals) it captures 'most of the perspectives and approaches that organizational practitioners and theorists will be drawing on when thinking about designing and implementing knowledge management systems'. Van Wijk et al. (2008, p. 836) also used ABI/Inform but extended their meta-analysis to EBSCO, JSTOR, Science Direct and Swetsnet.

Examining the four databases used by Van Wijk et al. (2008, p. 836) reveals that only ABI/Inform and EBSCO provide partial data on the location of the studies previously undertaken. JSTOR and Science Direct do not have this feature. The fourth database used by the authors, Swetsnet, is not accessible through the university network and hence excluded. On the other hand, one additional database is included in the meta-analysis as it has been valuable during the literature review and classifies documents according to countries/territories. That database is called Web of Science, formerly Web of Knowledge²⁷. Adapting Raub and Charles-Clemens's (2001, p. 116) search criteria, all three databases are scanned for articles with 'knowledge shar*' in the title or abstract. Keywords are excluded as not all of the databases have this as a separate field. The results are further filtered to exclude documents such as news feeds, book reviews or newspapers. Table B.0.1 on the next page highlights the search terms used for each database and the exclusion criteria applied.

²⁷ Web of Knowledge was rebranded Web of Science as of 12 January 2014. See Thomson Reuters (2014).

Table B.0.1

Search terms and exclusion criteria utilised across three databases and the number of knowledge sharing studies per country

Database	ABI/Inform Complete	EBSCO	Web of Science
Search term	ti("knowledge shar*") OR ab("knowledge shar*")	ti("knowledge shar*") OR ab("knowledge shar*") Databases: E-journals, Academic Search Elite, Library, Information Science & Technology Abstracts	Topic=("knowledge shar*") Databases: Social Sciences Citation Index (SSCI) --1980-present, Conference Proceedings Citation Index- Social Science & Humanities (CPCI-SSH) --1990-present, Book Citation Index-- Social Sciences & Humanities (BKCI-SSH) --2005-present
Exclusion criteria	Wire feeds, newspapers, other sources; locations representing regions, such as Asia or central Europe	Locations representing regions; Unable to exclude 19 reviews and 4 news items without concurrently excluding periodicals. So all were included.	Review or meeting abstract or correction or book review or news Item or editorial material
# search results	2962	4796	2499
# classified	1477	284	2818

From Table B.0.1 above it can be seen that executing the search retrieves 2,962 articles from ABI/Inform, 4,796 from EBSCO and 2,499 documents from Web of Science across the whole available date range. Of these, 1,477, 284 and 2,818 documents respectively are classified into countries. Overall, this approximates a 45% classification rate.

The countries identified from each of the three databases are recorded in Table B.0.2 on the next page.

Table B.0.2

Number of knowledge sharing studies per country retrieved from ABI/Inform Complete, EBSCO and Web of Science

ABI/Inform Complete		EBSCO		Web of Science	
Country	Records/ country	Country	Records/ country	Country	Records/ country
US	730	US	75	China	671
UK	214	UK	44	US	486
China	143	China	43	UK	259
Canada	36	Australia	17	Australia	121
Malaysia	29	Canada	13	Netherlands	105
India	28	India	13	Malaysia	90
Australia	19	Netherlands	8	Canada	84
Japan	19	South Africa	7	Germany	68
France	16	Norway	6	Italy	67
Denmark	15	Thailand	5	South Korea	61
Finland	14	Malaysia	4	Finland	55
Netherlands	14	Spain	4	France	52
Spain	14	Tanzania	4	Singapore	46
Iran	13	Turkey	4	Denmark	41
Russia	13	Brazil	3	Japan	41
South Korea	13	Hungary	3	Spain	39
Germany	9	Israel	3	South Africa	35
Brazil	8	Japan	3	Switzerland	34
Italy	8	Switzerland	3	Norway	33
Norway	8	Austria	2	Sweden	33
South Africa	8	Colombia	2	India	29
Singapore	7	Denmark	2	New Zealand	27
Thailand	7	Indonesia	2	Romania	26
United Arab Emirates	7	Iran	2	Austria	25
New Zealand	6	Jordan	2	Brazil	25
Sweden	6	North Korea	2	Iran	20
Switzerland	6	Portugal	2	Belgium	18
Vietnam	6	Singapore	2	Portugal	18
Greece	6	South Korea	2	Thailand	18
Jordan	4	Sweden	2	Turkey	18
Pakistan	4			Israel	14
Portugal	4			Czech Republic	13
Romania	4			Hungary	13
Scandinavia	4			Greece	10
Turkey	4			Estonia	9
Bahrain	3			Mexico	9

Belgium	3	Russia	8
Estonia	3	Colombia	6
Hungary	3	Cyprus	6
Lebanon	3	Indonesia	6
Iraq	2	Jordan	6
Israel	2	Pakistan	5
Puerto Rico	2	Bulgaria	4
Saudi Arabia	2	Lebanon	4
Slovenia	2	Nigeria	4
Austria	1	Oman	4
Burkina Faso	1	Egypt	3
Cyprus	1	Lithuania	3
Luxembourg	1	Slovenia	3
Philippines	1	Bosnia And Herzegovina	2
Sri Lanka	1	Botswana	2
		Croatia	2
		Ethiopia	2
		Luxembourg	2
		Morocco	2
		Poland	2
		Saudi Arabia	2
		Slovakia	2
		Tunisia	2
		Vietnam	2
		Argentina	1
		Bahrain	1
		Bolivia	1
		Burkina Faso	1
		Cameroon	1
		Chile	1
		Cuba	1
		Ghana	1
		Iceland	1
		Jamaica	1
		Kuwait	1
		Malta	1
		Peru	1
		Qatar	1
		Senegal	1
		Serbia	1
		Sri Lanka	1
		Tanzania	1

	Uganda	1
	United Arab Emirates	1
	Zimbabwe	1

From the table above it can be seen that the top three countries comprise of two Western and one non-Western country. The former two are the US and the UK while the latter is China. The results for China are in line with S. Wang and Noe (2010, p. 126) who stated that the majority of studies that are conducted outside Western cultures are Chinese. Thereafter the ranking varies among the three databases. The Netherlands scores between rank five and 11 as illustrated in Table B.0.2 above. Yet this should be sufficient to evaluate the emerging categories of influences against the literature as Web of Science alone retrieved 105 documents for the Netherlands.

Appendix C: Data saturation with UK interviewees

Table C.0.1

Data saturation in the UK

UK interviewee number ^a	Institution key category	Relations key category	Sharer key category	Knowledge key category
1	X		X	X
2	X	X		X
3		X	X	X
4		X	X	X
5	X	X	X	X
6	X	X	X	X
7	X	X	X	X

Note. ^aThis column shows the interviewee sequence in time and does not correspond to the interviewee code given e.g. UK-01.

Appendix D: Final interview guide for Phases I and II

This is the final interview guide utilised during Phases I and II.

Introduction

Thank you first of all for participating in this study.

In collaboration with ITSC, we have chosen you as we believe that you can provide a unique perspective for this study based on your role and experience in the organisation.

As you may have read in the introductory email that I am looking at knowledge sharing and how this differs between countries. The information that you and others provide will be anonymised. This means that your name will not appear on any reports or other academic material and that all your responses will remain strictly confidential. As your participation is voluntary, you are free to decline to answer any particular question or questions.

I would also like to get your permission to audio record our interview so I can concentrate on what you have to say rather than making notes. Is it all right if I switch the tape recorder on now? Thank you.

Before we begin with the interview, I would like to give you the Participant Information Sheet and would like to ask you to read and sign the Participant Consent Form of which you will also receive a copy.

Are there any questions you would like to ask me before we start?

Introduction to knowledge sharing

From what I understand, you are a/the [Vice President, Global Support].

1. What does this role involve?
2. How long have you been in this position?
3. How did you acquire all the things that you needed to know to perform your role? What were they?
4. Looking back, what would you do now to support someone in a new position?
5. How important do you think it is in your job to share knowledge?ⁱ

Definition of knowledge

6. We spoke about knowledge sharing. What does knowledge mean to you?ⁱⁱ
7. From your perspective, would you differentiate between information and knowledge?
8. Do you share knowledge when someone asks you or do you share knowledge regardless of being asked a question?

A positive sharing incident

Can you think back to a good knowledge sharing experience you had at ITSC when you shared your knowledge with somebody else? A good knowledge sharing experience may be one where you felt was effective in getting your point across or where the recipient appreciated your valuable knowledge. << Give respondents a few seconds to think>>ⁱⁱⁱ

9. Can you describe that experience for me and how it unfolded? <<If no response, use probes>>^{iv}

- o How did the knowledge sharing experience arise?^v
- o When did it happen?^{vi}
- o Who was the recipient of this interaction?^{vii}
- o What kind of knowledge was this person seeking?^{viii}
- o How much do you know about the topic?^{ix}
- o Do you perceive the knowledge you shared as valuable to you?^x
- o How did you feel about being contacted?^{xi}
- o What communication media were you using for this interaction?^{xii}
- o Do you feel that this was effective?^{xiii}
- o What is your preferred communication method?^{xiv}
- o Does it have an impact on knowledge sharing?

Expectations

10. What, if anything, did you expect to get out of it?^{xv} << if no response, use permission statement below>>

Sometimes employees share knowledge because they expect the recipient to share valuable knowledge with them in return. Sometimes they expect some type of reward. Please tell me what prompts you to share knowledge?

Relationship factors

11. How would you describe the relationship to this person?
12. Would you share the same amount of knowledge with other people such as your colleagues? Manager? Or customers?^{xvi}

General questions

Until now we've been talking about a specific knowledge sharing experience. The next questions are more general in nature.

13. Now, can you tell me what encourages you to share knowledge? << if no response, use permission statement below>>^{xvii}

Sometimes employees share knowledge because it is part of their job. Sometimes they share knowledge because they like to help out. Sometimes they share because they want to create a good impression. Please tell me what prompts you to share knowledge?^{xviii}

14. Are there any instances in which you would be less willing to share your knowledge? What could influence that?^{xix}

15. Are there things about other people that make you less likely to share knowledge? << if no response, use permission statement below>>
 Sometimes cultural background, language or gender influences behaviour. Please tell me what things influence you?^{xx}
16. You are part of the [GSS] team. How would you describe this team?^{xxi}
17. What impact, if any, do you think it has on your knowledge sharing behaviour?
18. What, if any, encouragements does the organisation have for you to share your knowledge?^{xxii}
19. Is there anything you think the organisation should do differently? What? How?^{xxiii}
20. Is it common for ITSC employees to socialise outside working hours?^{xxiv} <<If yes>> Do you believe that it impacts what and how knowledge is shared? Is this a usual thing to do in [US]?^{xxv}
21. In your experience, are you aware of any difference in the knowledge sharing of workers of different age? National cultures?^{xxvi}
22. Do you think that regulating bodies, such as local and national governments, have an impact on your knowledge sharing behaviour? << if no response, use permission statement below>>
 Sometimes governments publish codes of conduct for an industry. Sometimes governments have regulations such as privacy acts which restrict knowledge sharing. Sometimes governments discourage certain kinds of communication methods. Can you think of any regulating bodies that have an impact on your knowledge sharing behaviour? <<If yes>> Do you feel that they are enforced?^{xxvii}
23. In addition to regulating bodies, do you think that there are professional bodies or associations that create knowledge sharing “standards”?^{xxviii}
24. Let’s move on to a slightly different topic. Suppose that I was an expatriate new to [US]. What tips would you give me that I should follow, when it comes to knowledge sharing?^{xxix} << if no response, use permission statement below>>
 In some countries, people should not contradict their superiors. In others personal matters should not be discussed with work colleagues. What are some of the guidelines you could give me?^{xxx}
25. Is there any other effect you would like to talk about?^{xxxi}

Demographic questions

Finally, I have a sheet here with brief demographic questions. Could you please read it and fill it out for me?^{xxxii}

Conclusion

This completes our interview.^{xxxiii} Is there anything you would like to add?

Thank you for taking the time to participate in this study. I am grateful for your help.^{xxxiv}

Pre-interview checklist

<input type="checkbox"/>	Audio recorder <ul style="list-style-type: none"> <input type="checkbox"/> Fully charged batteries <input type="checkbox"/> Sufficient space
<input type="checkbox"/>	Watch
<input type="checkbox"/>	1x Participant Information sheet
<input type="checkbox"/>	2x Participant consent form
<input type="checkbox"/>	2x Pen
<input type="checkbox"/>	Folder for documents
<input type="checkbox"/>	Position description of interviewee
<input type="checkbox"/>	Business cards & holder

Post-interview notes

Question	Answer
To which one of the following departments does the interviewee primarily belong?	<input type="checkbox"/> Sales <input type="checkbox"/> Finance <input type="checkbox"/> Operations
Does the interviewee supervise other employees? A supervisor or manager is responsible for overseeing the work of other employees on a day to day basis.	<input type="checkbox"/> Yes <input type="checkbox"/> No
Did the audio recorder function properly?	<input type="checkbox"/> Yes <input type="checkbox"/> No
Gender?	<input type="checkbox"/> Female <input type="checkbox"/> Male
Where did the interview occur?	To be recorded on tape.
How were the interview conditions?	
How did the interviewee react to the questions?	
How well were the questions answered?	
How was the perceived rapport?	
Were the research questions answered?	
Any problems?	

Demographic information

Instructions: Please tell me a few basic facts about yourself. Answer as completely and accurately as you can.

	Question	Response
1.	In which age range do you fall? (please tick one)	<input type="checkbox"/> Below 21 <input type="checkbox"/> 21 to 30 <input type="checkbox"/> 31 to 44 <input type="checkbox"/> 45 to 55 <input type="checkbox"/> 56 to 64 <input type="checkbox"/> 65 and above
2.	What is the highest level of qualification that you have completed? (please tick one)	<input type="checkbox"/> No qualification <input type="checkbox"/> High school or equivalent <input type="checkbox"/> Trade, technical or vocational training <input type="checkbox"/> Bachelor or equivalent <input type="checkbox"/> Master or equivalent <input type="checkbox"/> PhD and above or equivalent
3.	To which one of these ethnic groups do you consider you primarily belong? (please tick one)	<input type="checkbox"/> African <input type="checkbox"/> Arab <input type="checkbox"/> Bangladeshi <input type="checkbox"/> Caribbean <input type="checkbox"/> Chinese <input type="checkbox"/> Hispanic/Latino <input type="checkbox"/> Indian <input type="checkbox"/> Korean <input type="checkbox"/> Pakistani <input type="checkbox"/> White <input type="checkbox"/> Other, please specify _____
4.	What is your religion? (please tick one)	<input type="checkbox"/> Buddhist <input type="checkbox"/> Christian (including Catholic, Protestant and all other Christian denominations) <input type="checkbox"/> Daoist <input type="checkbox"/> Hindu <input type="checkbox"/> Jewish <input type="checkbox"/> Muslim <input type="checkbox"/> No religion <input type="checkbox"/> Sikh <input type="checkbox"/> Any other religion, please specify _____
5.	In which country or countries did you spend the first 18 years of your life?	<input type="checkbox"/> China <input type="checkbox"/> France <input type="checkbox"/> the Netherlands <input type="checkbox"/> UK <input type="checkbox"/> USA <input type="checkbox"/> Other, please write: _____
6.	Approximately how many years have you been working for ITSC?	
7.	What is your mother-tongue?	
8.	What language(s) do you speak?	

Appendix E: Twenty-two qualitative data analysis techniques

Table E.0.1 below lists the 22 qualitative data analysis techniques described by Bairstow (2012) as well as the researcher's comments as to the techniques' suitability for the present study.

Table E.0.1

Qualitative data analysis methods

No.	Method name	Brief description	Researcher's comment
1	Typology	'is the classification of observations in terms of their attributes on two or more variables'. They enable 'to understand the relationships between the research topics [... and] been used [...] to analyse trends, compare research outputs, etc.'	The aim of this study is not to classify data points in a typological matrix but rather to classify and group them.
2	Grounded theory	'is a systematic methodology in the social sciences involving the generation of theory from data'	Please see discussion in Section 3.8
3	Analytic induction	'Refers to a systematic examination of similarities between various social phenomena in order to develop concepts or ideas'	Not only are contextual similarities examined in this study but also contextual differences, making this analysis only partially relevant.
4	Logical analysis	'attempts to resolve philosophical disputes by clarifying language and analysing the expressed in ordinary assertions'	No philosophical disputes are considered in this study.
5	Quasi-statistics	'simple counts of things to make statements such as 'some,' 'usually,' and 'most' more precise'	Quasi statistics are utilised to some degree in this study to gauge which influences are similar and different between contexts but no formal technique is employed.
6	Narrative event analysis	'involves stories and the systematic investigation of chains of events and / or actions that lead to a conclusion'	While stories are a by-product when asking interviewees questions, the aim of this study is not to analyse these in depth but rather extract influences that influence their

			knowledge sharing.
7	Domain analysis	‘helps in Knowledge Management to discover patterns that exist in the cultural behaviour, cultural artefacts and cultural knowledge in the group from whom the data was gathered’ and is considered and ethnographic analysis	As discussed in the research methods section, this research does not constitute an ethnographic study.
8	Taxonomic analysis	‘is a search for the way that cultural domains are organized. It usually involves drawing a graphical interpretation of the ways in which the individual participants’ moves, form groups and patterns that structure the conversation’	Relationships between individuals interviewed are not considered in this study.
9	Thematic analysis	‘was used as a method to identify, analyse and report patterns (themes) within data’	Please see discussion in Section 3.8
10	Metaphorical analysis	‘is conceptualized in cognitive linguistics—as a qualitative method for psychological research [...]’	The aim of this study is not to analyse metaphors used by interviewees.
11	Hermeneutical analysis	‘is the study of meaning or of meaningful things and actions such as those found in literature and culture’	While interview transcripts are interpreted, there aren’t any incomplete or seemingly contradictory statements that require hermeneutical analysis as they have been clarified during the interview.
12	Discourse analysis	‘a study of the way versions or the world, society, events and psyche are produced in the use of language and discourse’	While this study examines contextual differences, the language used by interviewees is not examined; nor are power relations between interviewees.
13	Semiotics	‘is the science of signs and symbols, such as body language’	The body of data in this study is based on interview transcripts, not on semiotics, such as body language.
14	Content analysis	‘examine documents, text, or speech to see what themes emerge’ and ‘theory determines what	As discussed in the philosophical assumptions section, interviews are analysed using an inductive

		you look for'	approach and hence content analysis is not suited.
15	Analytic induction	'is a way of building explanations in qualitative analysis by constructing and testing a set of causal links between events, actions etc. in one case and the iterative extension of this to further cases'	No causal links between knowledge sharing influences are considered in this study.
16	Action research	'is a methodology that combines action and research together. During a study the researcher is repeating the process of performing an action, reflecting on what has happened and using this information to plan their next action'	Although action research is not considered as an analysis method, self-reflection has been conducted throughout the study in order to improve reliability, validity and efficiency. ²⁸
17	Biography	'an approach to research which elicits and analyses a person's biography or life history'	No biographies or life histories are considered in this study.
18	Case study	'a research method (or design) focusing on the study of a single case. Usually it is not designed to compare one individual or group to another. Though it is possible to conduct a series of case studies, each study would not be designed specifically to enable comparison with others'	A case study is primarily considered as a method, design or strategy (see Section 3.3, and not a analysis approach
19	Constructivism	'looks at the systems people create to interpret the world around them and their experiences. It can also be referred to as social constructionism'	Although social constructivism is taken into account on a philosophical level, the aim of the thesis is to generate key categories of influences, not examine social systems.
20	Phenomenography	'the subject investigates the differing ways in which people experience, perceive, apprehend, understand, and conceptualise various	Please see discussion in Section 3.8

²⁸ (McNiff & Whitehead, 2001, p. 15)

		phenomena [...]	
21	Ethnography	'is a broad multi-qualitative method involving (participant observation, interviewing, discourse analyses of natural language, and personal documents) approach that studies people in their '...naturally occurring settings or fields [...]'	As discussed in the research methods section, this research does not constitute an ethnographic study.
22	Mood mapping	'involves plotting how you feel against your energy levels, to determine your current mood'	No mood fluctuations are considered in this study.

Appendix F: Defining sharer and other-sharer

S. Wang and Noe (2010, p. 117) and Niedergassel (2011, pp. 71-72) used the words source/sender and recipient in regards to knowledge transfer to distinguish between an individual sending knowledge and the other individual acquiring the knowledge. This may have stemmed from the communication literature that utilised the words source/sender and recipient in the early action or interaction models of communication (Narula, 2006, pp. 15-18). But authors not only used the words source/sender and receiver in connection with knowledge transfer, the terminology is also commonly drawn upon when speaking about knowledge sharing, as the following table illustrates.

Table F.0.1

Terminology used to describe individuals sharing knowledge

Author(s)	1st individual	2nd individual
Hendriks (1999, p. 92)	Owner	Reconstructor
Husted and Michailova (2002, p. 17)	Transmitter	Receiver
Bart van den Hooff and de Leeuw van Weenen (2004, p. 14)	Donator	Collector
Bircham-Connolly, Corner, and Bowden (2005, p. 1)	Source	Recipient
Usoro and Kuofie (2006, p. 16)	Giver	Receiver
Boyd et al. (2007, p. 140)	Owner	Recipient
S. J. H. Yang and Chen (2008, p. 37)	Contributor	Consumer
Yi (2009, p. 68)	Provider	Recipient
Solano (2009, p. 11)	Sender	Recipient

Examining Table F.0.1 above reveals two aspects. Firstly, there seems to be a lack of interactivity between the two individuals²⁹. Describing the second individual as recipient or receiver suggests that that person absorbs the knowledge and may actively process that knowledge but is not actively engaged in sharing his or her own knowledge with the first person. It is argued therefore that words such as recipient or receiver imply a passiveness that could be more associated with knowledge transfer than knowledge sharing. This issue was alluded to by Usoro and Kuofie (2006, p. 16) when they stated that the ‘receiver is not passively taking “knowledge”’.

²⁹ Individuals might be a more suitable word as participants could imply active participation, which is argued here is not the case with the terminology used by the majority of authors.

They then went on to say that a receiver filtered the knowledge obtained based on his or her cultural background. So while Uoro and Kuofie (2006) acknowledged that the receiver is not passive, their argument centred on the premise that a knowledge receiver is actively applying their cultural lenses when receiving knowledge from others.

In a similar vein, Bart van den Hooff and de Leeuw van Weenen (2004, p. 14) argued that knowledge donating and collecting are active processes but felt that these processes are of different nature. They clarified this by stating that the former is about 'sharing one's intellectual capital' while the latter concentrates on the other person profiting from the shared intellectual capital. Again, this indicates a disconnection where one person is sharing knowledge and another receiving it, suggesting that there is no interaction where both individuals donate and collect within a knowledge sharing act. While the issue of passiveness and lack of interaction has been observed as a limitation in communication literature as early as 1973 and subsequently developed (Narula, 2006, pp. 17, 22), the knowledge sharing literature seems to continue to use this terminology.

One option to avoid differentiating between an individual that is sending and another that is receiving knowledge is to use identical words for both of them. This includes sharer (M.-J. J. Lin, Hung, & Chen, 2009, p. 937; Witherspoon et al., 2013, pp. 252, 254), knowledge worker (Corcoran, 2001, p. 90; O'Neill & Adya, 2007, p. 411) or collaborator (S. J. H. Yang & Chen, 2008, p. 36)³⁰. This may be appropriate in definitions or when there is no requirement to distinguish between individuals. However, findings from the interviews depicted in Section 4.3.3 necessitate a differentiation between one person that is sending and another that is receiving. As none of the words provided by the authors above seem suitable, two words are created that embody interactivity and activeness of both individuals in a knowledge sharing act.

While seeking suitable terminology, another aspect from Table F.0.1 emerges, which are power differences between the individuals. According to Freitag (1999, p. 37) '[i]n a linear communication world the sender is in control; the sender dictates flow and direction. In an interactive communication world, the receiver usurps power'. This was in line with Emmitt and Gorse (2003, p. 34) who stated

³⁰ S. J. H. Yang & Chen (2008) called contributors and consumers of knowledge 'collaborators'.


that the early models of communication theory implied that power was with the sender, not the receiver. In a knowledge management context M. P. Thompson, Jensen, and DeTienne (2009, p. 327) argued that the 'power of knowledge lies in the hands of the receiver, not the sender' as the receiver is the one that acts upon the received knowledge, not the sender that makes the knowledge available to others. The commonality between the three sets of authors is that they maintained that senders and receivers have different degrees of power. It is argued however, that in a knowledge sharing act, both sender and receiver have equal degrees of power as they both donate and collect with the aim to help each other. Based on this, it is argued that when searching for suitable terminology one has to also take into consideration power differences associated with words.

After extensive reflection of terminology that embodies interactivity and activeness of both individuals while minimising power differences between them, two words are chosen: sharer and other-sharer. The word 'sharer' is by no means a new creation, being used by De Mott in 1962 and as recently as 2013 by Witherspoon et al. (p. 252), but it is argued that the word implies active participation.

On the other hand, the word 'other-sharer' has rarely been used and in particular in the library or knowledge management domain with Goddard (1991, p. 195) and Stennett (1994) among the few who have, although they used the non-hyphenated word. The decision to use this instead of other words such as 'sharer one' and 'sharer two' are threefold. Firstly, using sharer for both individuals, instead of sender and receiver for instance, implies an active participation in the knowledge sharing act. Secondly, it creates a relational perspective differentiating between one and another individual. As becomes apparent in Chapter 4, the perspective of self and others is important when examining knowledge sharing. But rather than having to clarify if 'sharer one' or 'sharer two' is relating to the initiator of the knowledge sharing act or the second individual, the terminology of sharer and other-sharer makes it visually distinguishable. Lastly, by using sharer in both instances, it is argued that the inferred power distribution is balanced as both individuals donate and collect knowledge. In short, by using sharer and other-sharer, it is felt that this conveys interactivity and activeness of both individuals while indicating that both have equal power in the knowledge sharing act.

Appendix G: Copyright permission confirmations

Copyright permission for Figure 2.1.

		
1 PAYMENT	2 REVIEW	3 CONFIRMATION
Step 3: Order Confirmation		
<p>Thank you for your order! A confirmation for your order will be sent to your account email address. If you have questions about your order, you can call us at +1.855.239.3415 Toll Free, M-F between 3:00 AM and 6:00 PM (Eastern), or write to us at info@copyright.com. This is not an invoice.</p>		
Confirmation Number: 11167082 Order Date: 03/14/2014		<p>If you paid by credit card, your order will be finalized and your card will be charged within 24 hours. If you choose to be invoiced, you can change or cancel your order until the invoice is generated.</p>
Payment Information		
Alexander Schauer a.schauer@sheffield.ac.uk +44 4915757263950 Payment Method: n/a		
Order Details		
Conducting research literature reviews : from the internet to paper		
Order detail ID: 64525147 Order License Id: 3347631258950 ISBN: 978-1-4522-5949-9 Publication Type: Book Author/Editor: Fink, Arlene	Permission Status: <input checked="" type="checkbox"/> Granted Permission type: Republish or display content Type of use: Republish in a thesis/dissertation	
	Requestor type	Academic institution
	Format	Print, Electronic
	Portion	chart/graph/table/figure
	Number of charts/graphs/tables /figures	1
	Title or numeric reference of the portion(s)	Figure 1.1
	Title of the article or chapter the portion is from	Chapter 1
	Editor of portion(s)	N/A
	Author of portion(s)	N/A
	Volume of serial or monograph	N/A
	Page range of portion	3-5
Note: This item will be invoiced or charged separately through CCC's RightsLink service. More info		\$ 0.00

(continued)

Confirmation Number: 11167082

Special Rightsholder Terms & Conditions

The following terms & conditions apply to the specific publication under which they are listed

Conducting research literature reviews : from the internet to paper

Permission type: Republish or display content

Type of use: Republish in a thesis/dissertation

TERMS AND CONDITIONSThe following terms are individual to this publisher:

None

Other Terms and Conditions:NoneSTANDARD TERMS AND CONDITIONS1. Description of Service; Defined Terms. This Republication License enables the User to obtain licenses for republication of one or more copyrighted works as described in detail on the relevant Order Confirmation (the "Work(s)"). Copyright Clearance Center, Inc. ("CCC") grants licenses through the Service on behalf of the rightsholder identified on the Order Confirmation (the "Rightsholder"). "Replication", as used herein, generally means the inclusion of a Work, in whole or in part, in a new work or works, also as described on the Order Confirmation. "User", as used herein, means the person or entity making such republication.2. The terms set forth in the relevant Order Confirmation, and any terms set by the Rightsholder with respect to a particular Work, govern the terms of use of Works in connection with the Service. By using the Service, the person transacting for a republication license on behalf of the User represents and warrants that he/she/it (a) has been duly authorized by the User to accept, and hereby does accept, all such terms and conditions on behalf of User, and (b) shall inform User of all such terms and conditions. In the event such person is a "freelancer" or other third party independent of User and CCC, such party shall be deemed jointly a "User" for purposes of these terms and conditions. In any event, User shall be deemed to have accepted and agreed to all such terms and conditions if User republishes the Work in any fashion.3. Scope of License; Limitations and Obligations.3.1 All Works and all rights therein, including copyright rights, remain the sole and exclusive property of the Rightsholder. The license created by the exchange of an Order Confirmation (and/or any invoice) and payment by User of the full amount set forth on that document includes only those rights expressly set forth in the Order Confirmation and in these terms and conditions, and conveys no other rights in the Work(s) to User. All rights not expressly granted are hereby reserved.3.2 General Payment Terms: You may pay by credit card or through an account with us payable at the end of the month. If you and we agree that you may establish a standing account with CCC, then the following terms apply: Remit Payment to: Copyright Clearance Center, Dept 001, P.O. Box 843006, Boston, MA 02284-3006. Payments Due: Invoices are payable upon their delivery to you (or upon our notice to you that they are available to you for downloading). After 30 days, outstanding amounts will be subject to a service charge of 1-1/2% per month or, if less, the maximum rate allowed by applicable law. Unless otherwise specifically set forth in the Order Confirmation or in a separate written agreement signed by CCC, invoices are due and payable on "net 30" terms. While User may exercise the rights licensed immediately upon issuance of the Order Confirmation, the license is automatically revoked and is null and void, as if it had never been issued, if complete payment for the license is not received on a timely basis either from User directly or through a payment agent, such as a credit card company.3.3 Unless otherwise provided in the Order Confirmation, any grant of rights to User (i) is "one-time" (including the editions and product family specified in the license), (ii) is non-exclusive and non-transferable and (iii) is subject to any and all limitations and restrictions (such as, but not limited to, limitations on duration of use or circulation) included in the Order Confirmation or invoice and/or in these terms and conditions. Upon completion of the licensed use, User shall either secure a new permission for further use of the Work(s) or immediately cease any new use of the Work(s) and shall render inaccessible (such as by deleting or by removing or severing links or other locators) any further copies of the Work (except for copies printed on paper in accordance with this license and still in User's stock at the end of such period).3.4 In the event that the material for which a republication license is sought includes third party materials (such as photographs, illustrations, graphs, inserts and similar materials) which are identified in such material as having been used by permission, User is responsible for identifying, and seeking separate licenses (under this Service or otherwise) for, any of such third party materials; without a separate license, such third party materials may not be used.3.5 Use of proper copyright notice for a Work is required as a condition of any license granted under the Service. Unless otherwise provided in the Order Confirmation, a proper copyright notice will read substantially as follows: "Republished with permission of [Rightsholder's name], from [Work's title, author, volume, edition number and year of copyright]; permission conveyed through Copyright Clearance Center, Inc." Such notice must be provided in a reasonably legible font size and must be placed either immediately adjacent to the Work as used (for example, as part of a by-line or footnote but not as a separate electronic link) or in the place where substantially all other credits or notices for the new work containing the republished Work are located. Failure to include the required notice results in loss to the Rightsholder and CCC, and the User shall be liable to pay liquidated damages for each such failure equal to twice the use fee specified in the Order Confirmation, in addition to the use fee itself and any other fees and charges specified.3.6 User may only make alterations to the Work if and as expressly set forth in the Order Confirmation. No Work may be used in any way that is defamatory, violates the rights of third parties (including such third parties' rights of copyright, privacy, publicity, or other tangible or intangible property), or is otherwise illegal, sexually explicit or obscene. In addition, User may not conjoin a Work with any other material that may result in damage to the reputation of the Rightsholder. User agrees to inform CCC if it becomes aware of any infringement of any rights in a Work and to cooperate with any reasonable request of CCC or the Rightsholder in connection therewith.4. Indemnity. User hereby indemnifies and agrees to defend the Rightsholder and CCC, and their respective employees and directors, against all claims, liability, damages, costs and expenses, including legal fees and expenses, arising out of any use of a Work beyond the scope of the rights granted herein, or any use of a Work which has been altered in any unauthorized way by User, including claims of defamation or infringement of rights of copyright, publicity, privacy or other tangible or intangible property.5. Limitation of Liability. UNDER NO CIRCUMSTANCES WILL CCC OR THE RIGHTSHOLDER BE LIABLE FOR ANY DIRECT, INDIRECT, CONSEQUENTIAL OR INCIDENTAL DAMAGES (INCLUDING WITHOUT LIMITATION DAMAGES FOR LOSS OF BUSINESS PROFITS OR INFORMATION, OR FOR BUSINESS INTERRUPTION) ARISING OUT OF THE USE OR INABILITY TO USE A WORK, EVEN IF ONE OF THEM HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES. In any event, the total liability of the Rightsholder and CCC (including their respective employees and directors) shall not exceed the total amount actually paid by User for

Copyright permission for Figure 2.2.

Alex Schauer

From: ieg@worldbank.org
Sent: Thursday, 20 March 2014 11:31 PM
To: Alex Schauer
Subject: Re: Copyright permission request
Attachments: SnipImage.jpg; Knowledge Sharing- A Review of the Literature.pdf

Dear Mr. Schauer,

We always grants permission to re-use our information as long as credit is given. The language we would ask you to include with the figure would be as follows:

Reproduced with permission from the Independent Evaluation Group, the World Bank Group, from Cummings, J. (2003), "Knowledge Sharing: A Review of the Literature." Washington, DC: World Bank.

In case you have additional questions, please do not hesitate to contact us.

Thank you for your interest in IEG's work.

IEG Independent Evaluation Group
WORLD BANK | IFC | MIGA
Improving Development Results Through Excellence in Evaluation
<http://www.worldbank.org/ieg>

▼ "Alex Schauer" ---03/18/2014 03:50:28 AM---To whom it may concern,

From: "Alex Schauer" <a.schauer@sheffield.ac.uk>
To: <ieg@worldbank.org>
Date: 03/18/2014 03:50 AM
Subject: Copyright permission request

To whom it may concern,

My name is Alexander Schauer and a postgraduate research student at the University of Sheffield working towards my thesis titled 'From dimensions to clusters: Moving towards a concise and holistic framework of key components influencing an individual's knowledge sharing'.

I wish to reproduce one figure from the following document in my thesis and am contacting you as the author or rights-holder:

Figure 1. Five Contexts of Knowledge Sharing by
Cummings, J. (2003). Knowledge Sharing: A Review of the Literature. Washington, D.C.: The World Bank Retrieved from
[http://inweb90.worldbank.org/oed/oeddoclib.nsf/DocUNIDViewForJavaSearch/D9E389E74148E9DE85256DC600572CA0/\\$file/knowledge_eval_literature_review.pdf](http://inweb90.worldbank.org/oed/oeddoclib.nsf/DocUNIDViewForJavaSearch/D9E389E74148E9DE85256DC600572CA0/$file/knowledge_eval_literature_review.pdf).

Both the original article and reproduced figure are attached for your review.

I wish to include this figure in the printed and electronic versions of my thesis, of which the latter I am required to deposit in White Rose eTheses Online repository (<http://etheses.whiterose.ac.uk/>). The repository is non-commercial and openly available to all.

I would be grateful if you could advise if this will be acceptable.

Best wishes,

Alexander

Alexander Schauer

PhD Student
Information School
The University of Sheffield
<http://www.shef.ac.uk/is/research/groups/kim/schauer.html>
LinkedIn: <http://lnkd.in/ww8-EG>

(See attached file: Knowledge Sharing- A Review of the Literature.pdf)(See attached file: SnipImage.jpg)

Copyright permission for Figure 2.3.

ELSEVIER LICENSE
TERMS AND CONDITIONS

Mar 14, 2014

This is a License Agreement between Alexander Schauer ("You") and Elsevier ("Elsevier") provided by Copyright Clearance Center ("CCC"). The license consists of your order details, the terms and conditions provided by Elsevier, and the payment terms and conditions.

All payments must be made in full to CCC. For payment instructions, please see information listed at the bottom of this form.

Supplier	Elsevier Limited The Boulevard, Langford Lane Kidlington, Oxford, OX5 1GB, UK
Registered Company Number	1982084
Customer name	Alexander Schauer
Customer address	Regent Court, Portobello Street Sheffield, other S1 4DP
License number	3347630728093
License date	Mar 14, 2014
Licensed content publisher	Elsevier
Licensed content publication	Human Resource Management Review
Licensed content title	Knowledge sharing: A review and directions for future research
Licensed content author	Sheng Wang, Raymond A. Noe
Licensed content date	June 2010
Licensed content volume number	20
Licensed content issue number	2
Number of pages	17
Start Page	115
End Page	131
Type of Use	reuse in a thesis/dissertation
Portion	figures/tables/illustrations
Number of figures/tables /illustrations	1
Format	both print and electronic
Are you the author of this Elsevier article?	No
Will you be translating?	No
Title of your thesis/dissertation	From dimensions to clusters: Moving towards a concise and holistic framework of key components influencing an individual's knowledge sharing
Expected completion date	Aug 2014
Estimated size (number of pages)	290
Elsevier VAT number	GB 494 6272 12

(continued)

Permissions price	0.00 EUR
VAT/Local Sales Tax	0.00 EUR / 0.00 GBP
Total	0.00 EUR
Terms and Conditions	

INTRODUCTION

1. The publisher for this copyrighted material is Elsevier. By clicking "accept" in connection with completing this licensing transaction, you agree that the following terms and conditions apply to this transaction (along with the Billing and Payment terms and conditions established by Copyright Clearance Center, Inc. ("CCC"), at the time that you opened your Rightslink account and that are available at any time at <http://myaccount.copyright.com>).

GENERAL TERMS

2. Elsevier hereby grants you permission to reproduce the aforementioned material subject to the terms and conditions indicated.

3. Acknowledgement: If any part of the material to be used (for example, figures) has appeared in our publication with credit or acknowledgement to another source, permission must also be sought from that source. If such permission is not obtained then that material may not be included in your publication/copies. Suitable acknowledgement to the source must be made, either as a footnote or in a reference list at the end of your publication, as follows:

"Reprinted from Publication title, Vol /edition number, Author(s), Title of article / title of chapter, Pages No., Copyright (Year), with permission from Elsevier [OR APPLICABLE SOCIETY COPYRIGHT OWNER]." Also Lancet special credit - "Reprinted from The Lancet, Vol. number, Author(s), Title of article, Pages No., Copyright (Year), with permission from Elsevier."

4. Reproduction of this material is confined to the purpose and/or media for which permission is hereby given.

5. Altering/Modifying Material: Not Permitted. However figures and illustrations may be altered/adapted minimally to serve your work. Any other abbreviations, additions, deletions and/or any other alterations shall be made only with prior written authorization of Elsevier Ltd. (Please contact Elsevier at permissions@elsevier.com)

6. If the permission fee for the requested use of our material is waived in this instance, please be advised that your future requests for Elsevier materials may attract a fee.

7. Reservation of Rights: Publisher reserves all rights not specifically granted in the combination of (i) the license details provided by you and accepted in the course of this licensing transaction, (ii) these terms and conditions and (iii) CCC's Billing and Payment terms and conditions.

8. License Contingent Upon Payment: While you may exercise the rights licensed immediately upon issuance of the license at the end of the licensing process for the transaction, provided that you have disclosed complete and accurate details of your proposed use, no license is finally effective unless and until full payment is received from you (either by publisher or by CCC) as provided in CCC's Billing and Payment terms and conditions. If full payment is not received on a timely basis, then any license preliminarily granted shall be deemed automatically revoked and shall be void as if never granted. Further, in the event that you breach any of these terms and conditions or any of CCC's Billing and Payment terms

(continued)

and conditions, the license is automatically revoked and shall be void as if never granted. Use of materials as described in a revoked license, as well as any use of the materials beyond the scope of an unrevoked license, may constitute copyright infringement and publisher reserves the right to take any and all action to protect its copyright in the materials.

9. Warranties: Publisher makes no representations or warranties with respect to the licensed material.

10. Indemnity: You hereby indemnify and agree to hold harmless publisher and CCC, and their respective officers, directors, employees and agents, from and against any and all claims arising out of your use of the licensed material other than as specifically authorized pursuant to this license.

11. No Transfer of License: This license is personal to you and may not be sublicensed, assigned, or transferred by you to any other person without publisher's written permission.

12. No Amendment Except in Writing: This license may not be amended except in a writing signed by both parties (or, in the case of publisher, by CCC on publisher's behalf).

13. Objection to Contrary Terms: Publisher hereby objects to any terms contained in any purchase order, acknowledgment, check endorsement or other writing prepared by you, which terms are inconsistent with these terms and conditions or CCC's Billing and Payment terms and conditions. These terms and conditions, together with CCC's Billing and Payment terms and conditions (which are incorporated herein), comprise the entire agreement between you and publisher (and CCC) concerning this licensing transaction. In the event of any conflict between your obligations established by these terms and conditions and those established by CCC's Billing and Payment terms and conditions, these terms and conditions shall control.

14. Revocation: Elsevier or Copyright Clearance Center may deny the permissions described in this License at their sole discretion, for any reason or no reason, with a full refund payable to you. Notice of such denial will be made using the contact information provided by you. Failure to receive such notice will not alter or invalidate the denial. In no event will Elsevier or Copyright Clearance Center be responsible or liable for any costs, expenses or damage incurred by you as a result of a denial of your permission request, other than a refund of the amount(s) paid by you to Elsevier and/or Copyright Clearance Center for denied permissions.

LIMITED LICENSE

The following terms and conditions apply only to specific license types:

15. Translation: This permission is granted for non-exclusive world **English** rights only unless your license was granted for translation rights. If you licensed translation rights you may only translate this content into the languages you requested. A professional translator must perform all translations and reproduce the content word for word preserving the integrity of the article. If this license is for use of 1 or 2 figures then permission is granted for non-exclusive world rights in all languages.

16. Posting licensed content on any Website: The following terms and conditions apply as follows: Licensing material from an Elsevier journal: All content posted to the web site must maintain the copyright information line on the bottom of each image; A hyper-text must be included to the Homepage of the journal from which you are licensing at <http://www.sciencedirect.com/science/journal/xxxxx> or the Elsevier homepage for books at <http://www.elsevier.com>; Central Storage: This license does not include permission for a scanned version of the material to be stored in a central repository such as that provided

(continued)

by Heron/XanEdu.

Licensing material from an Elsevier book: A hyper-text link must be included to the Elsevier homepage at <http://www.elsevier.com>. All content posted to the web site must maintain the copyright information line on the bottom of each image.

Posting licensed content on Electronic reserve: In addition to the above the following clauses are applicable: The web site must be password-protected and made available only to bona fide students registered on a relevant course. This permission is granted for 1 year only. You may obtain a new license for future website posting.

For journal authors: the following clauses are applicable in addition to the above: Permission granted is limited to the author accepted manuscript version* of your paper.

***Accepted Author Manuscript (AAM) Definition:** An accepted author manuscript (AAM) is the author's version of the manuscript of an article that has been accepted for publication and which may include any author-incorporated changes suggested through the processes of submission processing, peer review, and editor-author communications. AAMs do not include other publisher value-added contributions such as copy-editing, formatting, technical enhancements and (if relevant) pagination.

You are not allowed to download and post the published journal article (whether PDF or HTML, proof or final version), nor may you scan the printed edition to create an electronic version. A hyper-text must be included to the Homepage of the journal from which you are licensing at <http://www.sciencedirect.com/science/journal/xxxxx>. As part of our normal production process, you will receive an e-mail notice when your article appears on Elsevier's online service ScienceDirect (www.sciencedirect.com). That e-mail will include the article's Digital Object Identifier (DOI). This number provides the electronic link to the published article and should be included in the posting of your personal version. We ask that you wait until you receive this e-mail and have the DOI to do any posting.

Posting to a repository: Authors may post their AAM immediately to their employer's institutional repository for internal use only and may make their manuscript publically available after the journal-specific embargo period has ended.

Please also refer to Elsevier's Article Posting Policy for further information.

18. For book authors the following clauses are applicable in addition to the above: Authors are permitted to place a brief summary of their work online only. You are not allowed to download and post the published electronic version of your chapter, nor may you scan the printed edition to create an electronic version. Posting to a repository: Authors are permitted to post a summary of their chapter only in their institution's repository.

20. Thesis/Dissertation: If your license is for use in a thesis/dissertation your thesis may be submitted to your institution in either print or electronic form. Should your thesis be published commercially, please apply for permission. These requirements include permission for the Library and Archives of Canada to supply single copies, on demand, of the complete thesis and include permission for UMI to supply single copies, on demand, of the complete thesis. Should your thesis be published commercially, please apply for permission.

Elsevier Open Access Terms and Conditions

Elsevier publishes Open Access articles in both its Open Access journals and via its Open Access articles option in subscription journals.

(continued)

Authors publishing in an Open Access journal or who choose to make their article Open Access in an Elsevier subscription journal select one of the following Creative Commons user licenses, which define how a reader may reuse their work: Creative Commons Attribution License (CC BY), Creative Commons Attribution – Non Commercial - Share Alike (CC BY NC SA) and Creative Commons Attribution – Non Commercial – No Derivatives (CC BY NC ND)

Terms & Conditions applicable to all Elsevier Open Access articles:

Any reuse of the article must not represent the author as endorsing the adaptation of the article nor should the article be modified in such a way as to damage the author's honour or reputation.

The author(s) must be appropriately credited.

If any part of the material to be used (for example, figures) has appeared in our publication with credit or acknowledgement to another source it is the responsibility of the user to ensure their reuse complies with the terms and conditions determined by the rights holder.

Additional Terms & Conditions applicable to each Creative Commons user license:

CC BY: You may distribute and copy the article, create extracts, abstracts, and other revised versions, adaptations or derivative works of or from an article (such as a translation), to include in a collective work (such as an anthology), to text or data mine the article, including for commercial purposes without permission from Elsevier

CC BY NC SA: For non-commercial purposes you may distribute and copy the article, create extracts, abstracts and other revised versions, adaptations or derivative works of or from an article (such as a translation), to include in a collective work (such as an anthology), to text and data mine the article and license new adaptations or creations under identical terms without permission from Elsevier

CC BY NC ND: For non-commercial purposes you may distribute and copy the article and include it in a collective work (such as an anthology), provided you do not alter or modify the article, without permission from Elsevier

Any commercial reuse of Open Access articles published with a CC BY NC SA or CC BY NC ND license requires permission from Elsevier and will be subject to a fee.

Commercial reuse includes:

- Promotional purposes (advertising or marketing)
- Commercial exploitation (e.g. a product for sale or loan)
- Systematic distribution (for a fee or free of charge)

Please refer to Elsevier's Open Access Policy for further information.

21. Other Conditions:

(continued)

v1.7

If you would like to pay for this license now, please remit this license along with your payment made payable to "COPYRIGHT CLEARANCE CENTER" otherwise you will be invoiced within 48 hours of the license date. Payment should be in the form of a check or money order referencing your account number and this invoice number RLNK501251147.

Once you receive your invoice for this order, you may pay your invoice by credit card. Please follow instructions provided at that time.

Make Payment To:
Copyright Clearance Center
Dept 001
P.O. Box 843006
Boston, MA 02284-3006

For suggestions or comments regarding this order, contact RightsLink Customer Support: customer care@copyright.com or +1-877-622-5543 (toll free in the US) or +1-978-646-2777.

Gratis licenses (referencing \$0 in the Total field) are free. Please retain this printable license for your reference. No payment is required.

Copyright permission for Figure 2.4 and Figure 2.5.

Alex Schauer

From: Chris Tutill <CTutill@emeraldinsight.com>
Sent: Monday, 17 March 2014 2:20 PM
To: 'a.schauer@sheffield.ac.uk'
Subject: FW: Emerald Group Publishing Limited Pending Request Notification

Dear Alexander Schauer,

Please allow me to introduce myself, my name is Chris Tutill and I am the Editorial Support Assistant here at Emerald Group Publishing. On 14th March 2014, you placed a Rightslink order for permission to use Emerald content in your thesis/dissertation.

With regards to your request, subject to full referencing, Emerald is happy for you to use this content within your thesis. Please note, however, that if in the future you wish to publish your thesis commercially, you will need to clear permission again.

Please note, the above grants permission for content that is © Emerald Group Publishing only. Any content used from the article that makes reference to a copyright holder other than Emerald, will require you to clear permission with that party directly.

Good luck with your thesis!

Kind Regards,

Chris Tutill
Editorial Support Assistant | Emerald Group Publishing Limited
Fax: +44 (0)1274 785200
CTutill@emeraldinsight.com | www.emeraldinsight.com



 Please consider the environment before printing this email

From: Copyright Clearance Center [<mailto:rightslink@marketing.copyright.com>]
Sent: 14 March 2014 14:00
To: Permissions
Subject: Emerald Group Publishing Limited Pending Request Notification

To view this email as a web page, go [here](#).

Do Not Reply Directly to This Email

To ensure that you continue to receive our emails,
please add rightslink@marketing.copyright.com to your address book.



(continued)

Your Request Has Been Submitted

Dear Alexander Schauer,

Thank you for submitting your request through Copyright Clearance Center's RightsLink service. Emerald Group Publishing Limited has partnered with RightsLink to license its content online.

Your request will be reviewed within fifteen business days by a member of Emerald Group Publishing Limited permissions team, after which time you will receive an email with a royalty fee set by Emerald Group Publishing Limited. **At that time, you must accept the fee and terms to complete the order.**

Please Note: Emerald Group Publishing Limited may deny your request or you may decline an approved request. In either case, you will receive an e-mail notification. You will not be charged for any request not accepted by you.

Your requested order details are available by clicking the link below:
<https://s100.copyright.com/CustomerAdmin/SVP3.jsp?ref=5a58fa92-1372-4c08-89c8-2ce670977003&pName=emerald>

Order Details

Licensee:	Alexander Schauer
Order Date:	Mar 14, 2014
Order Number:	500849795
Publication:	Journal of Knowledge Management
Title:	Antecedents of organizational knowledge sharing: a meta-analysis and critique
Type of Use:	Dissertation/Thesis
Total:	Not Available

B.3:v6.6

+1-877-622-5543 / Tel: +1-978-646-2777
customercare@copyright.com
<http://www.copyright.com>



This email was sent to: permissions@emeraldinsight.com

Please visit [Copyright Clearance Center](#) for more information.

This email was sent by Copyright Clearance Center
222 Rosewood Drive Danvers, MA 01923 USA
To view the privacy policy, please [go here](#).

Emerald Group Publishing Limited, Registered Office: Howard House, Wagon Lane, Bingley, BD16 1WA
United Kingdom. Registered in England No. 3080506, VAT No. GB 665 3593 06

Copyright permission for Table 2.1.

SPRINGER LICENSE
TERMS AND CONDITIONS

Jul 19, 2014

This is a License Agreement between Alexander Schauer ("You") and Springer ("Springer") provided by Copyright Clearance Center ("CCC"). The license consists of your order details, the terms and conditions provided by Springer, and the payment terms and conditions.

All payments must be made in full to CCC. For payment instructions, please see information listed at the bottom of this form.

License Number	3432480466421
License date	Jul 19, 2014
Licensed content publisher	Springer
Licensed content publication	AI & Society
Licensed content title	Knowledge sharing for sustainable development in civil engineering: a systematic review
Licensed content author	Nicholas Meese
Licensed content date	Jan 1, 2011
Volume number	27
Issue number	4
Type of Use	Thesis/Dissertation
Portion	Figures
Author of this Springer article	No
Order reference number	None
Original figure numbers	Table 4
Title of your thesis / dissertation	From dimensions to clusters: Moving towards a concise and holistic framework of key components influencing an individual's knowledge sharing
Expected completion date	Aug 2014
Estimated size(pages)	290
Total	0.00 USD
Terms and Conditions	

Introduction

The publisher for this copyrighted material is Springer Science + Business Media. By clicking "accept" in connection with completing this licensing transaction, you agree that the following terms and conditions apply to this transaction (along with the Billing and Payment terms and conditions established by Copyright Clearance Center, Inc. ("CCC"), at the time that you opened your Rightslink account and that are available at any time at <http://myaccount.copyright.com>).

Limited License

With reference to your request to reprint in your thesis material on which Springer Science and Business Media control the copyright, permission is granted, free of charge, for the use indicated in your enquiry.

Copyright permission for Figure 2.8.

Alex Schauer

From: Tellis, Ruth <R.Tellis@palgrave.com>
Sent: Friday, 14 March 2014 3:51 PM
To: a.schauer@sheffield.ac.uk
Subject: RE: Permission Request

It is our policy to grant permission free of charge to students and researchers who are looking to quote excerpts from our titles for strictly academic purposes. This is subject to the following conditions:

- Your work must be of an entirely academic nature; no commercial publication of the work at hand is allowed;
- You must acknowledge our edition directly below the reproduced material as follows : «author/editor, title, year of publication, publisher (as it appears on our copyright page) reproduced with permission of Palgrave Macmillan. This material may not be copied or reproduced without permission from Palgrave Macmillan»

Your thesis may be reproduced through academic aggregators but should it become eligible for commercial publication at a later stage, you will need to re-apply for our permission.

Best wishes

Ruth Tellis

Rights and Digital Licensing Manager

Palgrave Macmillan

Houndmills

Basingstoke

Hampshire

RG21 6XS

+44 (0)1256 303516

fax +44(0)1256 353774

-----Original Message-----

From: Palgrave, Rights
Sent: 14 March 2014 14:47
To: Tellis, Ruth
Subject: FW: Permission Request

-----Original Message-----

From: a.schauer@sheffield.ac.uk [<mailto:a.schauer@sheffield.ac.uk>]
Sent: 14 March 2014 14:11
To: Palgrave, Rights
Subject: Permission Request

(continued)

Title: Mr
FName: Alexander
Name: Schauer
Organisation: University of Sheffield
Address: Regent Court, 211 Portobello Street Sheffield, England
Telephone: +491575 7263950
Email: a.schauer@sheffield.ac.uk
Publisher: Palgrave Macmillan
Journal: Knowledge Management Research & Practice
Author: Nonaka, Ikujiro and Toyama, Ryoko
Article_Title: The knowledge-creating theory revisited: knowledge creation as a synthesizing process
Content_DOI: 10.1057/ palgrave.kmrp.8500001
Publication_Date: 17/03/2003
Vol_Number: 1
Issue_Number: 1
Start_Page: 2
End_Page: 10


Message: Reproduction of Figure 1 on page 5 for my PhD thesis titled 'From dimensions to clusters: Moving towards a concise and holistic framework of key components influencing an individual's knowledge sharing'. I wish to include this figure in the printed and electronic versions of my thesis, of which the latter I am required to deposit in White Rose eTheses Online repository (<http://etheses.whiterose.ac.uk/>). The repository is non-commercial and openly available to all. I would be grateful if you could advise if this will be acceptable.

Best wishes,

Alexander

DISCLAIMER: This e-mail is confidential and should not be used by anyone who is not the original intended recipient. If you have received this e-mail in error please inform the sender and delete it from your mailbox or any other storage mechanism. Neither Macmillan Publishers Limited nor any of its agents accept liability for any statements made which are clearly the sender's own and not expressly made on behalf of Macmillan Publishers Limited or one of its agents. Please note that neither Macmillan Publishers Limited nor any of its agents accept any responsibility for viruses that may be contained in this e-mail or its attachments and it is your responsibility to scan the e-mail and attachments (if any). No contracts may be concluded on behalf of Macmillan Publishers Limited or its agents by means of e-mail communication. Macmillan Publishers Limited Registered in England and Wales with registered number 785998 Registered Office Brunel Road, Houndmills, Basingstoke RG21 6XS

Copyright permission for Figure 3.1, Figure 3.2 and Figure 3.4.



1
PAYMENT
2
REVIEW
3
CONFIRMATION

Step 3: Order Confirmation

Thank you for your order! A confirmation for your order will be sent to your account email address. If you have questions about your order, you can call us at +1.855.239.3415 Toll Free, M-F between 3:00 AM and 6:00 PM (Eastern), or write to us at info@copyright.com. This is not an invoice.

Confirmation Number: 11167906
Order Date: 03/18/2014

If you paid by credit card, your order will be finalized and your card will be charged within 24 hours. If you choose to be invoiced, you can change or cancel your order until the invoice is generated.

Payment Information

Alexander Schauer
a.schauer@sheffield.ac.uk
+44 4915757263950
Payment Method: n/a

Order Details

Research design : qualitative, quantitative, and mixed methods approaches

<p>Order detail ID: 64530850 Order License Id: 3351791214160 ISBN: 978-1-4129-6557-6 Publication Type: Book Publisher: SAGE PUBLICATIONS Author/Editor: CRESWELL, JOHN W.</p>	<p>Permission Status: <input checked="" type="checkbox"/> Granted Permission type: Republish or display content Type of use: Republish in a thesis/dissertation</p>
	<p>Requestor type: Academic institution</p>
	<p>Format: Print, Electronic</p>
	<p>Portion: chart/graph/table/figure</p>
	<p>Number of charts/graphs/tables /figures: 1</p>
	<p>Title or numeric reference of the portion(s): Figure 1.1</p>
	<p>Title of the article or chapter the portion is from: The Selection of a Research Design</p>
	<p>Editor of portion(s): N/A</p>
	<p>Author of portion(s): N/A</p>
	<p>Volume of serial or monograph: N/A</p>
	<p>Issue, if republishing an article from a serial: N/A</p>

Note: This item will be invoiced or charged separately through CCC's **RightsLink** service. More info **\$ 0.00**

(continued)

Confirmation Number: 11167906

Special Rightsholder Terms & Conditions

The following terms & conditions apply to the specific publication under which they are listed

Research design : qualitative, quantitative, and mixed methods approaches

Permission type: Republish or display content

Type of use: Republish in a thesis/dissertation

TERMS AND CONDITIONSThe following terms are individual to this publisher:

None

Other Terms and Conditions:NoneSTANDARD TERMS AND CONDITIONS1. Description of Service; Defined Terms. This Republication License enables the User to obtain licenses for republication of one or more copyrighted works as described in detail on the relevant Order Confirmation (the "Work(s)"). Copyright Clearance Center, Inc. ("CCC") grants licenses through the Service on behalf of the rightsholder identified on the Order Confirmation (the "Rightsholder"). "Replication", as used herein, generally means the inclusion of a Work, in whole or in part, in a new work or works, also as described on the Order Confirmation. "User", as used herein, means the person or entity making such republication.2. The terms set forth in the relevant Order Confirmation, and any terms set by the Rightsholder with respect to a particular Work, govern the terms of use of Works in connection with the Service. By using the Service, the person transacting for a republication license on behalf of the User represents and warrants that he/she/it (a) has been duly authorized by the User to accept, and hereby does accept, all such terms and conditions on behalf of User, and (b) shall inform User of all such terms and conditions. In the event such person is a "freelancer" or other third party independent of User and CCC, such party shall be deemed jointly a "User" for purposes of these terms and conditions. In any event, User shall be deemed to have accepted and agreed to all such terms and conditions if User republishes the Work in any fashion.3. Scope of License; Limitations and Obligations.3.1 All Works and all rights therein, including copyright rights, remain the sole and exclusive property of the Rightsholder. The license created by the exchange of an Order Confirmation (and/or any invoice) and payment by User of the full amount set forth on that document includes only those rights expressly set forth in the Order Confirmation and in these terms and conditions, and conveys no other rights in the Work(s) to User. All rights not expressly granted are hereby reserved.3.2 General Payment Terms: You may pay by credit card or through an account with us payable at the end of the month. If you and we agree that you may establish a standing account with CCC, then the following terms apply: Remit Payment to: Copyright Clearance Center, Dept 001, P.O. Box 843006, Boston, MA 02284-3006. Payments Due: Invoices are payable upon their delivery to you (or upon our notice to you that they are available to you for downloading). After 30 days, outstanding amounts will be subject to a service charge of 1-1/2% per month or, if less, the maximum rate allowed by applicable law. Unless otherwise specifically set forth in the Order Confirmation or in a separate written agreement signed by CCC, invoices are due and payable on "net 30" terms. While User may exercise the rights licensed immediately upon issuance of the Order Confirmation, the license is automatically revoked and is null and void, as if it had never been issued, if complete payment for the license is not received on a timely basis either from User directly or through a payment agent, such as a credit card company.3.3 Unless otherwise provided in the Order Confirmation, any grant of rights to User (i) is "one-time" (including the editions and product family specified in the license), (ii) is non-exclusive and non-transferable and (iii) is subject to any and all limitations and restrictions (such as, but not limited to, limitations on duration of use or circulation) included in the Order Confirmation or invoice and/or in these terms and conditions. Upon completion of the licensed use, User shall either secure a new permission for further use of the Work(s) or immediately cease any new use of the Work(s) and shall render inaccessible (such as by deleting or by removing or severing links or other locators) any further copies of the Work (except for copies printed on paper in accordance with this license and still in User's stock at the end of such period).3.4 In the event that the material for which a republication license is sought includes third party materials (such as photographs, illustrations, graphs, inserts and similar materials) which are identified in such material as having been used by permission, User is responsible for identifying, and seeking separate licenses (under this Service or otherwise) for, any of such third party materials; without a separate license, such third party materials may not be used.3.5 Use of proper copyright notice for a Work is required as a condition of any license granted under the Service. Unless otherwise provided in the Order Confirmation, a proper copyright notice will read substantially as follows: "Republished with permission of [Rightsholder's name], from [Work's title, author, volume, edition number and year of copyright]; permission conveyed through Copyright Clearance Center, Inc. " Such notice must be provided in a reasonably legible font size and must be placed either immediately adjacent to the Work as used (for example, as part of a by-line or footnote but not as a separate electronic link) or in the place where substantially all other credits or notices for the new work containing the republished Work are located. Failure to include the required notice results in loss to the Rightsholder and CCC, and the User shall be liable to pay liquidated damages for each such failure equal to twice the use fee specified in the Order Confirmation, in addition to the use fee itself and any other fees and charges specified.3.6 User may only make alterations to the Work if and as expressly set forth in the Order Confirmation. No Work may be used in any way that is defamatory, violates the rights of third parties (including such third parties' rights of copyright, privacy, publicity, or other tangible or intangible property), or is otherwise illegal, sexually explicit or obscene. In addition, User may not conjoin a Work with any other material that may result in damage to the reputation of the Rightsholder. User agrees to inform CCC if it becomes aware of any infringement of any rights in a Work and to cooperate with any reasonable request of CCC or the Rightsholder in connection therewith.4. Indemnity. User hereby indemnifies and agrees to defend the Rightsholder and CCC, and their respective employees and directors, against all claims, liability, damages, costs and expenses, including legal fees and expenses, arising out of any use of a Work beyond the scope of the rights granted herein, or any use of a Work which has been altered in any unauthorized way by User, including claims of defamation or infringement of rights of copyright, publicity, privacy or other tangible or intangible property.5. Limitation of Liability. UNDER NO CIRCUMSTANCES WILL CCC OR THE RIGHTSHOLDER BE LIABLE FOR ANY DIRECT, INDIRECT, CONSEQUENTIAL OR INCIDENTAL DAMAGES (INCLUDING WITHOUT LIMITATION DAMAGES FOR LOSS OF BUSINESS PROFITS OR INFORMATION, OR FOR BUSINESS INTERRUPTION) ARISING OUT OF THE USE OR INABILITY TO USE A WORK, EVEN IF ONE OF THEM HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES. In any event, the total liability of the Rightsholder and CCC (including their respective employees and directors) shall not exceed the total amount actually paid by User for

Copyright permission for Figure 3.3.

Alex Schauer

From: Academic Permissions <Academic.permissions@oup.com>
Sent: Friday, 14 March 2014 3:45 PM
To: 'a.schauer@sheffield.ac.uk'
Subject: FW: Academic Permissions Request Form

Dear Mr Schauer,

Thank you for your enquiry. You have our permission to use the OUP Material you list in your email below in your thesis for submission to University of Sheffield.

If at some future date your thesis is published it will be necessary to re-clear this permission. Please also note that if the material to be used is acknowledged to any other source, you will need to clear permission with the rights holder.

The acknowledgement below is fine.

Kind regards,
Guffi

Guffi Chohdri (Ms)
Rights Assistant
Academic Rights & Journals
Tel: +44 (0)1865 354454
Email: guffi.chohdri@oup.com

From: no.reply@oup.com [<mailto:no.reply@oup.com>]
Sent: 14 March 2014 14:33
To: Academic Permissions
Subject: Academic Permissions Request Form

O_0_URL	/uk/academic/rights/permissions/request
A_Z_firstname	Alexander
A_Z_lastname	Schauer
B_Z_Company	University of Sheffield
C_Z_Address	Information School, University of Sheffield Regent Court, 211 Portobello St Sheffield
C_Z_zip	S1 4DP
D_Z_PhoneNo	
D_Z_country	UK
E_Z_FaxNo	
F_Z_Email	a.schauer@sheffield.ac.uk
F_Z_VATnumber	
G_Z_TheirTitle	PhD thesis titled: "From dimensions to clusters: Moving towards a concise and holistic framework of key components influencing an individual's knowledge sharing"
H_Z_Author	Alexander Schauer
H_Z_Publisher	University of Sheffield
I_Z_Covers	Both
I_Z_PrintRunHard	5
I_Z_pubDate	Aug 2014

(continued)

J_Z_Territory	World
K_Z_Language	English
K_Z_Notes	I wish to include this figure in the printed and electronic versions of my thesis, of which the latter I am required to deposit in White Rose eTheses Online repository (http://etheses.whiterose.ac.uk/). The repository is non-commercial and openly available to all. I would be grateful if you could advise if this will be acceptable.
L_Z_Media1	illustration
M_Z_Author1	Bryman, A.
M_Z_Title1	Social Research Methods
M_Z_editedby1	
N_Z_Material1	Reproduction of Page 186, Figure 8.2 Main modes of administration of a survey
O_Z_ISBN1	9780199588053
O_Z_OUPpubDate1	2012
P_Z_Media2	Text
Q_Z_Author2	
Q_Z_Title2	
Q_Z_editedby2	
R_Z_Material2	
S_Z_ISBN2	
S_Z_OUPpubDate2	
T_Z_Media3	Text
U_Z_Author3	
U_Z_Title3	
U_Z_editedby3	
V_Z_ISBN3	
V_Z_Material3	
V_Z_OUPpubDate3	
W_Z_Additional	Reproduction of Figure 8.2 on page 186. The following text is intended to be displayed below the reproduced image in the thesis: Figure 3. Main modes of administration of a survey. From Social Research Methods (p. 186), by A. Bryman, 2012, Oxford: Oxford University Press. Copyright 2012 by Alan Bryman. Reprinted with permission. Would be great if you could kindly advise if this is correct. Best wishes, Alexander Schauer
subject	
view	submitform

Oxford University Press (UK) Disclaimer

This message is confidential. You should not copy it or disclose its contents to anyone. You may use and apply the information for the intended purpose only. OUP does not accept legal responsibility for the contents of this message. Any views or opinions presented are those of the author only and not of OUP. If this email has come to you in error, please delete it, along with any attachments. Please note that OUP may intercept incoming and outgoing email communications.