# ANTECEDENTS AND PERFORMANCE EFFECT OF ORGANIZATIONAL RESILIENCE: AN EXAMINATION OF SMALL AND MEDIUM ENTERPRISES IN NIGERIA.

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#### Abstract

Given an increasingly turbulent business environment, organisations are becoming more fragile and suffering from disruptions. Research has proposed that organizational resilience is an effective way to survive and thrive. However, significant ambiguity remains in the literature about what organizational resilience is and empirical work on its antecedents and performance effects are still lacking. This thesis addresses these concerns by adopting a three-phase sequential exploratory mixed method research design starting with a qualitative study and followed by two consecutive quantitative studies. The thesis provides a definition of organisational resilience and classifies it into two dimensions: bounce back and bounce forward resilience. These dimensions were distinguished conceptually, operationally, and empirically. Employing the resource-based view of the firm and the dynamic capability perspective, the thesis empirically examines the antecedents to organisational resilience and its effect on firm performance. In particular, the thesis examines the roles of organisational-level human and social capital on bounce back and bounce forward resilience and how these in turn influence firm performance. The relationships were tested by structural equation modelling (SEM) using a sample of 177 small and medium size enterprises from Lagos, Nigeria. The findings suggest that different forms of organisational-level human and social capital indeed relates to the two dimensions of resilience, and that bounce forward resilience enhance firm performance. Hence, SME managers seeking to improve organizational resilience should note that bounce back and bounce forward resilience can be effectively improved by enhancing appropriate forms of organisational-level human and social capital. Overall, this thesis contributes to organisational resilience literature by providing a definition and measurement of organisational resilience, as well as an empirical evidence of the antecedents and performance effects of organisational resilience that forms a solid foundation for future research to adopt a multidimensional perspective.

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## **Author Declaration**

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

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# Chapter One Introduction

## 1.1 Research Overview and Objectives

The environment in which organisations operate has been characterized by much turbulence and uncertainty, involving abrupt changes in customer demands and preferences, rapid technological evolutions, globalization, heightened market competition, and unstable political situations (Akgün and Keskin, 2014; Luo and Shi, 2011). For organisations to survive and possibly even thrive in the face of such turbulence and uncertainty, resilience as a concept becomes important (Ates and Bititci, 2011; Demmer, Vickery, and Calantone, 2011; Hamel and Valikangas, 2003; Moore and Manring 2009; Longstaff, 2005; Weick and Sutcliffe 2011; Lengnick-Hall, Beck, and Lengnick-Hall, 2011; Sheffi 2006). Resilience cushions the effect of sudden changes (Gibson et al., 2010; Home and Orr, 1997), reduces vulnerability and creates competitive advantage (Gunasekaran, Rai, and Griffin 2011; Teixeira and Werther 2013; Webb and Schlemmer 2006), and enhances organisational performance, growth and survival (Bhamra, Dani, and Burnard 2011; Hamel and Valikangas 2003; Lengnick-Hall, Beck, and Lengnick-Hall 2011; Burnard and Bhamra 2011; Ho et al. 2014; Reinmoeller and Van Baardwijk 2005). As Dahms (2010) notes, the new guarantee for promoting organisational survival and growth in the face of unexpected disruptions is resilience. Resilience does not only enable organisations to recover from disruptions but also helps them take advantage of emerging opportunities (Lengnick-Hall et al., 2011).

Given its importance, the question of what drives organisational resilience has become one of the most important questions in modern-day management and organisational studies literature (Bhamra et al., 2011; Cooper et al., 2015; Lengnick-Hall et al., 2011; William et al., 2018; Sutcliffe and Vogus, 2003; Linnenluecke, 2017). More so, organisations, realizing that disruptions can have adverse effects on their operations and performance, are beginning to focus on how resilience can be developed to mitigate the impact of disruptions and continue to thrive (Ambulkar, Blackhurst, and Grawe, 2014; Wieland and Wallenburg, 2013). While resilience may be crucial to an organisation's ability to manage threats and disruptions and even thrive in the face of disruptions, there is limited research on how organisations can develop resilience (Bhamra et al., 2011). A clear explanation of the factors that help organisations develop resilience will enable organisations take more practical and proactive steps towards building resilience (Cooper et al., 2015).

However, prior to exploring factors that contribute to the development of organisational resilience, it is important to provide a clear definition of organisational resilience. While research on organisational resilience is developing and the term is increasingly used in both government and industry policy, there is some disagreement and significant ambiguity regarding the conceptualization of the concept. The literature is frustratingly disjointed as different studies use varying definitions of the concept, and scholars sometimes invoke the term without providing a precise definition (Bhamra et al., 2011; Branicki, Steyer, and Sullivan-Taylor 2016; Linnenluecke 2017; Williams et al. 2017). The lack of agreement regarding the meaning of organisational resilience is problematic as it has limited the usefulness of the construct for both scholars and practitioners. Moreover, it has hampered the development of an appropriate measurement instrument (Bhamra et al., 2011; Manyena, 2006) and contributed to a lack of consistency in identifying the factors that drive organisational resilience (Cowell, Gainsborough, and Lowe, 2016). Consequently, the literature lacks large scale quantitative studies and research into the antecedents and consequences of organisational resilience is not welladvanced; thereby how managers and their organisations can develop resilience remains unclear. The varying interpretations of the concept also presents an analytical challenge such that generalization of findings across studies and comparison, have been problematic. A clear conceptualization and measurement of constructs enable scholars to compare results across studies and easily build on the work of others and simplify the use of various research results for practitioners (Giese and Cote, 2000; Sharma and Chrisman, 2007). Similarly, recent studies have emphasized the need for a clear definition of organisational resilience as this will encourage more research into how organisations can build resilience (Annarelli et al., 2016; Ho et al., 2014; Xiao and Cao, 2017). Therefore, the first objective of this thesis is to provide a clear and unified definition of organisational resilience.

Meanwhile, research on organisational resilience has started to investigate antecedents of the construct. Linnenluecke's (2017) recent review of the organisational resilience literature shows different streams of research on the antecedents of organisational resilience which details crisis and risk management, disaster planning, organisational strategies, financial reserves, mindfulness processes, information processing, learning from minor losses, experimentation, etc. as key factors contributing to organisational resilience. Critical to this literature are the resources and capabilities endowments of organisations (such as financial, technological, and human resources) that contribute to the development of organisational resilience (Meyer, 1982; Gittell, Cameron, Lim & Rivas, 2006; Lengnick-Hall et al., 2017; Sutcliffe & Vogus, 2003; William et al., 2017). For example, Meyer (1982) found slack resources and organisational strategies to be key factors in developing organisational resilience (labelled 'resiliency'). Similarly, Pal et al.'s (2014) study on the antecedents of organisational resilience in Swedish textile and clothing SMEs found assets and resourcefulness including, material assets, networking, investment finance and cash flow, and strategic and operational flexibility to be key enablers of organisational resilience.

While resources, which include both tangible and intangible resources (and capabilities), are clearly important in developing organisational resilience, employees' capabilities seem to play a critical role in the effectiveness of organisations in responding to threats and disruptions as well as reconfiguring and developing new capabilities (Weick, 1993; Lengnick-Hall et al., 2018; Mallak, 1998; William et al., 2018). For instance, Weick's (1993) study on how a group of smokejumpers responded to the Mann Gulch disaster showed that employees' capabilities: ability to improvise, virtual role systems, organisational wisdom and respectful interaction, are associated with organisational resilience. In the face of continuous change and uncertainty, a workforce that is capable of responding positively and competently to threats and disruptions is crucial to organisational survival and future success (Cooke et al., 2016; Wang et al., 2014).

An organisation's human and social capital may help build organisational resilience capability especially as they are at the core of innovation, speed and adaptation (Datta et al., 2005), and the success of an organisation is underpinned by its employees' response to changes (Shin et al., 2012). Recent studies have underscored how the knowledge, skills and abilities of an organisation's employees is associated with the resilience capacity of the organisation (Demmer et al., 2011; Lengnick-Hall et al., 2011; Pal et al., 2014). Similarly, the key role of social capital on organisational resilience is documented (Gittell et al. 2006; Lengnick-Hall et al., 2011; Pal et al., 2011; Pal et al., 2014). However, there is dearth of empirical research that examines the role of human and social capital in building organisational resilience as most studies remain theoretical and conceptual.

The human resource management literature pays special attention to human and social capital as significant drivers of organisational outcomes such as innovative capabilities (Subramaniam and Youndt, 2005), organisational ambidexterity (Kang, Snell and Swart, 2012; s, Bozionelos, and Syrigos, 2015), superior performance and competitive advantage in organisations (Takeuchi et al., 2007; Lepak et al., 2003; Nahapiet and Ghoshal, 2000).

The literature in this area has consistently theorized the role of high levels of valuable human and social capital in increasing organisational outcomes. This implies that organisations with high levels of valuable human and social capital are more likely to develop better innovative capabilities, ambidexterity, superior performance and competitive advantage. By the same logic, it can be argued that high levels of valuable human and social capital contribute to organisational resilience (Demmer et al., 2011; Lengnick-Hall et al., 2011; Gittell et al., 2006).

However, management literatures have begun to examine multiple dimensions of human and social capital especially at the organisational/unit-level (Adler and Kwon, 2002; Burt, 2000; Payne et al., 2013; Ployhart and Moliterno, 2011; Ployhart et al., 2006). Ployhart and Moliterno (2011) distinguished between different combinations of unit-level human capital (labelled 'human capital resource') based on their emergence processes composition and compilation, while the literature also emphasizes two main forms of organisational-level social capital – bonding and bridging social capital (Adler and Kwon, 2002; Burt, 2000; Payne et al., 2013). Yet, how these different forms of human and social capital relate to organisational resilience remains unclear as studies merely link human and social capital to organisational resilience at a more general level (e.g., Lengnick-Hall et al., 2011; Pal et al., 2014). This represents a significant research gap as the inherent differences in the main attributes of the different dimensions of human and social capital are expected to make each of them have unique influences on organisational resilience. More so, a knowledge of how each dimension impacts on organisational resilience will help organisations determine their strategic focus on aspects of human and social capital in developing organisational resilience. Consequently, the second objective of this thesis is to build on the multidimensional typologies of organisational-level human and social capital (Ployhart et al., 2014; Payne et al., 2013) to examine the relationship between different forms of organisational-level human and social capital and organisational resilience.

Furthermore, while various existing studies suggest a positive relationship between organisational resilience and firm performance (Bhamra et al., 2011; Fiskel, 2006; Mallak, 1998; Moore and Manring, 2009; Lengnick-Hall et al., 2011), it is surprising that empirical evidence substantiating this relationship is scarce in the literature (Cooper et al., 2014). There are a number of possible explanations for this deficiency. First, organisational resilience has proved to be difficult to operationalize and empirical studies in this domain are lacking. Second, a variety of organisational resilience definitions and antecedents have been proposed, resulting in a somewhat fragmented literature (Linnuenuecke, 2017). The lack of a solid empirical assessment of the performance effects of organisational resilience represent a major gap in the literature as concepts related to organisational resilience are only partially formed and there is lack of agreement on how the concept is constructed. Bhamra et al. (2011), based on an extensive literature review on resilience in the SME context, indicated an urgent need for research to empirically prove theories. Without solid empirical foundation, the validity of the assertions about organisational resilience and firm performances would be called into question. Therefore, a third objective of this thesis is to examine the effect of organisational resilience on firm performance.

Meanwhile, extant research on organisational resilience focuses mostly on large organisations with multiple business units. It is possible that organisational resilience research has contained selection bias towards resource rich large organisations (Herbane, 2010, 2013; Sullivan-Taylor and Branicki, 2011) as the SME context is under-explored and the literature lacks resilience theories from SMEs (Annarelli and Nonino, 2016; Bhamra et al., 2011; Runyan, 2006). More specifically, research on HRM and

organisational resilience has almost exclusively focused on large organisations and SMEs tend to be ignored commonly because data about them are not readily accessible. The paucity of organisational resilience research on SMEs could be significant as research on large organisation does not necessarily inform our understanding of organisational resilience in the SME context, and in fact, might be misleading in the face of evidence that SMEs differ from large organisation especially with regards to organisational size, structure, and resource constraints (Pal et al., 2014; Storey, 2010). Sullivan and Branicki (2011) used a standard framework designed by Weick (1993) to examine the extent to which frameworks designed for large organisations are applicable in an SME context and concludes that attempts to adopt 'a one-size-fits-all' approach in studies of organisational resilience have considerable limitations (p. 5565).

Moreover, SMEs constitute more than 90% of all enterprises and employ a significant percentage of the adult population as well as contribute to the industrial output in most economies. In the UK for example, SMEs account for 99% of all enterprises in the country, they employ 59.2% of the private sector workforce and generate 51.5% of the turnover in the private sector (BERR, 2008; Sullivan-Taylor and Branicki 2011). While Nigeria lacks statistics on relevant economic indices, it is reported that SMEs account for over 95% of all enterprises in the country and employ over 70% of the adult population and contribute over 50% of the country's industrial output (Ihua and Siyanbola 2012). Constituting such a large percentage of businesses, the resilience of SMEs becomes especially fundamental. Accordingly, recent studies have called for more research on organisational resilience in the SME context (e.g., Annarelli and Nonino, 2016; Bhamra et al., 2011; Kamalahmadi and Parast, 2016). Hence, within the spectrum of organisations, this thesis gives special attention to SMEs.

Accordingly, the purpose of this thesis is to define, operationalize and validate organisational resilience as well as investigate the antecedents (resources and capabilities)

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to the development of organisational resilience in SMEs and assess the extent to which organisational resilience is related to firm performance effects for SMEs. In particular, it aims to provide a definition and measurement tool for organisational resilience, identify the factors that contributes to organisational resilience in SMEs, investigate the role of human and social capital in building organisational resilience and whether firm performance is influenced by organisational resilience. These relationships are examined in the context of Nigerian SMEs.

This thesis takes several steps to address the above issues. First, based on a review of the organisational resilience literature in Chapter two, this thesis compares the existing definitions of organisational resilience and develops a definition. This definition is then used to develop measurement items that corresponds to the treatment of the concept in the literature. The measurement items were subjected to expert judging process through a validity test. Subsequently, an exploratory factor analysis is performed to identify reflective measures that reduce the vagueness surrounding the conceptualization of organisational resilience. This is in line with Gilliam and Voss's (2013) criteria of reducing ambiguity and confusion surrounding a construct and resolving issues of imbalance between the conceptualization of a construct and its empirical validation. The development of the measurement items, validity test and exploratory factor analysis are detailed in Chapter five.

Second, an exploratory qualitative study was conducted to inductively explore the types of resources and capabilities that organisations, and in particular SMEs, use to counteract threats and disruptions. The findings reveal that human and social capital are particularly important in building organisational resilience capability in SMEs. The exploratory qualitative/inductive approach is being used increasingly in entrepreneurship and small business management research (e.g., Castrogiovanni, Urbano, and Loras; 2011; Olivas-

Lujan et al., 2007; Perren and Ram, 2004), particularly where topics are studied in the first stages of analysis (Gartner and Birley, 2002). It has the benefit of providing contextually grounded new insights that can engender theory open to subsequent testing. When studies use existing insight to define a priori variables leading to organisational resilience, their resulting conclusions are largely driven by the initial selection of variables (Cumming et al., 2005).

Third, as the findings of a qualitative study cannot be extended to wider populations, a further large-scale quantitative study with a sample of SMEs was undertaken. A set of research hypotheses and a theoretical framework of the antecedents and performance effects of organisational resilience were therefore developed and tested. In particular, the relationships between two dimensions of organisational-level employees' capabilities (human and social capital) and organisational resilience, and its subsequent effect on firm performance were examined. This quantitative study was also used to retest the factor structure and further validate the organisational resilience scale developed and validated in the preceding quantitative study.

### 1.2 Research Contributions

This thesis contributes to the literature on organisational resilience in six distinct ways. First, it provides a definition of organisational resilience that reflects the multidimensional and multifaceted nature of the concept and focuses on the two dimensions of the construct evident in the existing literature: bounce back and bounce forward resilience. While a few studies have also identified these two dimensions (e.g., Lengnick-Hall et al., 2011), definitions of the concept have been one-sided as they focus on either of the two dimensions. For example, Gittell et al. (2006) adopts the bounce back approach and define organisational resilience as the ability to bounce back from untoward events and the capacity to maintain desirable level of functioning constructing, while Hamel and Valikangas (2003) took the bounce forward perspective to define it as the ability to dynamically reinvent business models and strategies as circumstances change. As either of these perspectives falls short of the complete meaning of organisational resilience, this thesis provides a more comprehensive definition that accounts for the two dimensions of organisational resilience identified in the literature. This definition clearly has some implications on the operationalization and measurement of organisational resilience.

Second, this thesis consolidates the fragmented literature on organisational resilience to develop and validate an integrated measurement scale for the organisational resilience construct which is a unique contribution. Prior studies have made some attempts to operationalize and measure organisational resilience (e.g., Kantur and Say 2015; Lee, Vargo, and Seville 2013; Whitman et al. 2013; Wicker, Filo, and Cuskelly 2013; Mallak 1998; e.g., Somers 2009). However, these measures have some limitations that challenge their usefulness in organisational research. For example, Mallak (1998) operationalized three concepts introduced by Weick (1993): bricolage, attitude of wisdom, and virtual role system and developed a measure for organisational resilience in terms of six factors: goal directed solution seeking, avoidance or scepticism, critical understanding, role dependence, source resilience, and access to resources. Although this study represents an important contribution to knowledge, the measure was based on the resilience of employees rather than the organisation. Through the development and validation of an organisational resilience measure that focuses on the organisational-level and thereby, the two dimensions of organisational resilience evident in the literature, this thesis breaks new grounds for subsequent empirical studies and conceptualizations in the organisational resilience domain.

Third, different from prior management and organisational studies research that largely theorized a single overall organisational resilience concept (e.g., Akgun and Keskin, 2014; Gunasekaran et al., 2011; Pal et al., 2014), this thesis constructs and hypothesizes the antecedents and consequence of the two dimensions of organisational resilience. This approach answers the call for a more systematic approach in understanding the factors that drive organisational resilience (Van Der Vegt et al., 2015) as well as provides a lens that adds clarity to the construct and important richness to better situate future work on organisational resilience.

Fourth, this thesis adopts a human resource perspective and draws on the resource-based view (RBV) of the firm (Barney, 1991) and the dynamic capability perspective (Teece et al., 1997) as well as human and social capital literatures (Adler and Kwon, 2002; Burt, 2000; Payne et al., 2013; Ployhart et al., 2014) to provide new insights into the antecedents to organisational resilience. Existing studies have viewed the concept and its antecedents from various perspectives such as business models and strategic initiatives/capabilities (e.g., Demmer et al., 2011; Hamel and Valikangas, 2003; Ismail et al., 2011), risk management (e.g., Starr et al., 2003), change management process (Ates and Bititci, 2011) and business continuity planning (Herbane, 2010) with limited research on the specific resources and capabilities and in particular, human resource capabilities that drive organisational resilience. However, it is argued that it is the identification and use of relevant resources and capabilities that enable organisations build resilience (Pal et al., 2014; Williams et al., 2017) irrespective of the perspective applied. While the RBV justifies how resources can be instrumental in building organisational resilience (Pal et al., 2014; Sullivan-Taylor and Branicki, 2011), the dynamic capability perspective justifies that the two distinct dimensions of organisational resilience require different resources and capabilities and hence, could vary in their impact on firm performance. Consequently, this thesis employs the RBV and dynamic capability perspective to identify and examine organisational resilience antecedents and performance effects.

Following the argument that intangible resources and capabilities have a higher potential to serve as sources of competitive advantage (Barney, 1991), and the strategic HRM literature which suggests that human and social capital constitutes critical resources that organisations can leverage to improve performance and achieve success (e.g., Subramaniam and Youndt, 2005; Snell, Youndt and Wright, 1996; Takeuchi et al., 2007), this thesis further focuses on human and social capital as key antecedents to organisational resilience. Specifically, the thesis builds on the multidimensional typologies of human and social capital to propose different organisational-level antecedents to the dimensions of organisational resilience which differs from prior research that adopted and theorized single overall human and social capital as antecedents to organisational resilience. By building on different dimensions of organisational-level human and social capital, this thesis does not only provide a unique perspective that expands our understanding of the organisational resilience construct, but also develops empirically testable explanations for the role of human and social capital in developing the two dimensions of organisational resilience at the organisational-level. This is a much-needed contribution on the antecedents to organisational resilience as it can supplement our understanding of how human and social capital influence organisational resilience. More so, with specific human resource focus linking organisational-level resources/capabilities to the two dimensions of organisational resilience, it is expected that this thesis will trigger new and fascinating questions and form the basis for valuable future research, while simultaneously serving as a catalyst for new conceptualizations and subsequent testing of theories.

Fifth, in contrast to studies in the management and organisational studies literature that merely theorize the relationship between organisational resilience and firm performance, with a few exceptions (e.g., Akgun and Keskin, 2014; Pal et al., 2014), this thesis offers an alternative approach focusing on theorizing and empirically testing this relationship.

In particular, it contributes to the literature related to organisational resilience and firm performance by proposing and confirming the relationship between the two dimensions of organisational resilience: bounce back and bounce forward, and firm performance. By doing so, it advances an emerging area of organisational resilience research and opens a new path for further exploration and empirical testing.

Sixth, this thesis explores the antecedents and performance effects of organisational resilience specifically for SMEs in Nigeria, an under-explored context in terms of organisational resilience, which adds to the relatively few studies examining organisational resilience in SMEs and developing countries context. Understanding the dynamics of developing organisational resilience in SMEs is vital for both academics and practitioners as there is literature which suggests that the antecedents and performance effects of organisational resilience may be different for large organisations and SMEs (e.g., Sullivan et al., 2011) and examining resilience of SME in developing economies context might reveal new insights for theory building (Cooper et al., 2014; Johns, 2006; Linnenuecke, 2015; Whetten, Felin and King, 2009).

### 1.3 Thesis Structure

This thesis is organized into seven chapters. Chapter two positions the thesis in the broader picture of organisational resilience research. The chapter presents literature on organisational resilience and extends the organisational resilience construct by highlighting two different dimensions that underlie its various conceptualizations in the literature. Specifically, the literature review identified and discussed a bounce back dimension and a bounce forward dimension, and address issues of overlap. The second part of the chapter reviews existing measures of organisational resilience and provides a rationale for developing and validating a new resilience scale. The third part provides a

develops hypotheses and research model by identifying and discussing key concepts and their relationships to bounce back and bounce forward resilience.

Chapter three discusses the processes and decisions involved in undertaking the various studies (studies 1, 2, and 3) in this thesis. It discusses various parts of the research methodology used and provides some justifications. Specifically, a mixed methods multistep approach was adopted. First, the chapter discusses the philosophical positions of this research. Second, the research strategy and design (sequential exploratory mixed method design) adopted in this study is discussed and justified. Third, the context of the study is discussed and justified. Details of the data collection and analysis procedures for the studies are presented within each of the next three chapters (Chapters four, five, and six). Chapter four is aimed at identifying the antecedents of organisational resilience in Nigerian SMEs. To this end, interview data from 20 SME owner-managers were used. Hence, this chapter provides details of the data collection/analysis procedure of Study 1 and presents the findings. The resource-based view of the firm was used to delineate the various antecedents and further narrow the focus of the subsequent quantitative study (Study 3).

The purpose of Chapter five is to develop and validate an organisational resilience scale. This chapter draws on the two dimensions of organisational resilience in the literature to build a foundation for a new organisational resilience measure. Following existing recommendations for scale development and validation, the chapter presents the procedures used to generate items for the scale and describes the sample, data collection/analysis procedures used to validate the newly developed organisational resilience scale. The results of various validity tests are also presented and discussed.

Chapter six builds on the findings of the exploratory study and the organisational resilience scale development and validation study (Study 1 and 2 respectively), as well as

the existing literature to develop a set of hypotheses and describes the method for data collection and analysis employed to test the research hypotheses for Study 3. Specifically, the research setting, sample, data collection procedures, measures of variables of the study, and data analytical techniques are described. Confirmatory factor analysis with structural equation modelling (SEM) was used to further retest and confirm the validity and factor structure of the organisational resilience construct. The research hypotheses were tested using Structural Equation Modelling (SEM) and the findings presented.

Chapter seven presents a detailed discussion of the findings of the thesis. First, a summary of the research objectives and major findings from the three studies is provided. This is followed by a discussion of the theoretical and practical implications of the findings. Finally, the limitations of the studies and some directions for future research are discussed. The chapter concludes with a restatement of the salient findings of the different studies in the thesis (Study 1, 2, and 3).

# Chapter Two Literature Review

### 2.1 Introduction

This chapter reviews the literature on resilience and organisational resilience, with the aim of exploring the meaning of organisational resilience and how it can be assessed, as well as investigating its antecedents and performance effect. First, the existing definitions of organisational resilience are analysed to develop an extensive definition of the construct. Second, constructs related to organisational resilience are identified, defined and analysed through existing literature. Third, existing measures of organisational resilience are reviewed and the need for a new measure is justified. Forth, the theoretical framework that formed the foundation for the current research is proposed. Fifth, major relevant constructs related to the antecedents of organisational resilience are identified, conceptually defined, and analysed through the theoretical lens of the resource-based view. Furthermore, firm performance effects of organisational resilience are analysed. Subsequently, important relationships among the constructs of interest are hypothesized and a research model proposed for testing.

### 2.2 Resilience

The term "resilience" is derived from the Latin word *resilio* which means to 'jump back' or 'bounce back'. In the academic literature the origin of the term can be traced to the work of Holling (1973) in the field of ecology (Xiao and Cao, 2017). Holling (1973) reasoned that resilience determines the persistence of relationships within a system and is a measure of the ability of systems to absorb changes of state variables, driving variables, and parameters and still persist. Going forward, the term has been appropriated and used across several academic disciplines; which makes it a multidisciplinary concept

(Linnenluecke, 2017; Ponomarov and Holcomb, 2009). These disciplines include; psychology (Bonanno, 2004; Masten, 2001; Connor and Davidson, 2003; Powley, 2009), sociology (Neil Adger, 2000), economics (Perrings, 2006; Rose, 2007), strategic management (Hamel and Valikangas, 2003; Reinmoeller and Van Baardwijk, 2005), supply chain management (Sheffi and Rice, 2005), safety engineering (Erik, Woods David and Nancy, 2006; Woods, Hollnagel and Leveson, 2006), risk management (Starr, Newfrock and Delurey, 2003), crisis/disaster management (Bruneau et al., 2003; McManus et al., 2007; Manyena, 2006), and organisational studies/human resources management (Lengnick-Hall and Beck, 2005; Lengnick-Hall et al., 2011; Weick and Sutcliffe, 2007).

Scholars from different disciplines construct varying meanings of the concept depending on the objectives of the research and the circumstances surrounding it (Bhamra et al., 2011; Linnenluecke, 2017; Newman and Dale, 2005) such that even within disciplines where resilience has been used for a long time (such as ecology), there are different definitions and viewpoints of the concept (Adger, 2000; Gunderson et al., 2001). This confusion has been moved into publications that examine the importance of resilience and the understanding it could provide scholars in management and organisational studies. As Linnenluecke (2017) notes, there are multiple and highly fragmented conceptualizations of organisational resilience in the management and organisational studies literature. Overall, the concept lacks clarity and a basic problem of definition of organisational resilience is yet to be addressed (Bhamra et al., 2011; Ho et al., 2014; Linnenluecke, 2017; Williams et al., 2017). This lack of conceptual clarity regarding the construct, has led to a variety of different measures being used to operationalize the organisational resilience construct (e.g., Mallak, 1998; Somers, 2009), a factor that makes it problematic to compare results across studies and accumulate a fundamental set of findings on which to build. Moreover, this conceptual ambiguity has limited the

usefulness of organisational resilience as a construct for both scholars and practitioners. Therefore, one objective of this thesis is to provide greater clarity to the conceptualisation and operationalisation of the of organisational resilience construct, and in doing so, provide a more solid base for future theorizing and for the interpretation of findings and perspicacity of implications for managers. The next section reviews the literature on organisational resilience.

### 2.2 What is organisational resilience?

To date, there is no universally agreed definition of organisational resilience (Linnenluecke, 2017). Scholars in management and organisational studies have offered numerous definitions of organisational resilience (see Table 2.1).

Bounce back versus Bounce forward	Definitions of organisational resilience	References
Bounce Back	Capacity of an organisation to maintain or return to a dynamic stable state which allows it to continue its operations during and after a major incident or in the presence of a continuous stress'	Altinas and Royer (2009)
	Capacity of an organisation to survive and sustain the business in the face of turbulent change.	Ates and Bititci (2011)
	The ability to bounce back from untoward events and the capacity to maintain desirable level of functioning.	Gittell et al. (2006)
	The ability of a system to withstand the stresses of environmental loading based on the combination/composition of subsystems, their structural inter-linkages, and the way environmental change is transmitted and spread throughout the entire system	Horne (1997)

Table 2.1Definitions of Organisational Resilience

A fundamental quality to respond productively to significant change that disrupts the expected pattern of event without introducing an extended period of regressive behaviour.	Horne and Orr (1998)
The capacity to absorb the impact and recover from drastic environmental change.	Linnenluecke and Griffiths (2010)
Capacity to anticipate a disturbance, to resist by adapting or recovery through the restoration of pre-disturbance state as much as possible.	Madni and Jackson (2009)
The ability of an organisation to expeditiously design and implement positive adaptive behaviours matched to the immediate situation, while enduring minimal stress.	Mallak (1998)
An organisation's ability to absorb a discrete environmental jolt and restore prior order.	Meyer (1982)
Capacity for an enterprise to survive, adapts, and grows in the face of change and uncertainty.	Pettit et al. (2013)
The individual quality of organisations that face some difficulties and return to their original position	Robb (2000)
A firm's capacity to maintain or restore an acceptable level of functioning despite perturbations or failures	Robert (2010)
The individual quality of organisations that face some difficulties and return to their original position.	Rudolph and Repenning (2002)
The ability and capacity to withstand systemic discontinuities and adapt to new risk environments	(Starr, et al., 2003)
A firm's ability to be flexible, withstand stress, and recover from a disruption	Van de Vegt et al. (2015)
An organisation's ability to recover in the presence of adverse events.	Weick et al., 1999
The ability to "bounce back"	Weick and Sutcliffe (2001, p. 14)

	The capacity of organisations to cope with unanticipated dangers after they have become manifest, learning to bounce back.	Wildavsky (1988)
Bounce forward	The capacity to be robust under conditions of enormous stress and change. The ability of an organisation to face reality with staunchness, make meaning of hardship and improvise solutions from thin air.	Coutu (2003)
	Capacity to continuous reconstruction. The ability to dynamically reinvent business models and strategies as circumstances change.	Hamel and Valikangas (2003)
	A firm's ability to effectively absorb, develop situation- specific responses to, and ultimately engage in transformative activities to capitalize on disruptive surprises that potentially threaten organisational survival.	Lengnick-Hall et al. (2011)
	The search for opportunities during a crisis in order to emerge stronger and in better conditions to those prevailing before the critical event.	McManus (2008)
	The ability to self-renew overtime by innovation.	Reinmoeller and Van Baardwijk (2005)
	Capacity of an organisation to adapt to disturbances and seize opportunities emerging from the changed environment.	Smit and Wandel (2006).
	The capacity to rebound from adversity strengthened and more resourceful.	(Sutcliffe and Vogus, 2003, p. 94).

When these definitions are carefully scrutinised, two perspectives can be distinguished – one pertaining to an organisation's ability to quickly recover from disruptive, unexpected events which is termed as "Bounce Back Resilience", and the other pertaining to an organisation's ability to develop new capabilities thus to capitalise on emerging opportunities from disruptive, unexpected events which is labelled as "Bounce Forward

Resilience" in this thesis. The distinction between these two dimensions seems to be accepted and/or at least partially covered by some scholars (e.g., Boin et al., 2017; Hamel and Valikangas, 2003; Lengnick-Hall et al., 2011; Manyena et al., 2011). Lengnick-Hall et al. (2011), note that one group of scholars focuses primarily on organisational resilience as simply an ability to rebound from unexpected, stressful, adverse situations and to pick up where they left off (e.g., Gittell et al., 2006; Horne and Orr, 1998; Mallak, 1998) while the second group defines organisational resilience as the development of new capabilities and an expanded ability to keep pace with and even create new opportunities (e.g., Lengnick-Hall and Beck, 2003, 2005; Hamel and Valikangas, 2003). Hamel and Valikangas (2003) as well as Valikangas and Roome (2012) made similar distinction between the two dimensions under the headings 'operational' and 'strategic' resilience. They defined operational resilience as bouncing back after a disruption while strategic resilience means converting threats into opportunities. Likewise, Gilly et al. (2014) distinguished between two dimensions of resilience: capacity for 'resistance' and 'adaptation'.

The bounce back view follows closely the original meaning of the word - to leap or jump back, to recover form and position elastically following a disturbance - as it interprets resilience as organisations' coping strategies and ability to respond quickly to unexpected disruptions so as to return to previous levels of performance/operations. In this case, organisations focus on achieving a strong balance between the organisation and a normal state of things while at the same time avoiding any form of backward activities, thereby 'preserving' its pre-disruption state (Home and Orr, 1997). Studies which adopt the bounce back resilience perspective primarily focus on the short-term goal of responding to immediate disruptions and recovering or returning quickly to status quo. For instance, Gittell, et al. (2006), defining organisational resilience as an organisation's ability to bounce back from untoward events and the capacity to maintain desirable level of functioning, examine how quickly organisations in the airline industry recovered after the World Trade Centre terrorist attack of September 2001. Similarly, Meyer's (1982) study, referring to resilience as an organisation's ability to absorb a discrete environmental jolt and restore prior order, shows how hospitals adapted to an unexpected doctors' strike. Therefore, an organisation is considered resilient when it is less vulnerable to disruptions and recovers quickly from disruptions when they occur. Similarly, it is core for organisations to build up capacities and capabilities that would enable them recover from disruptions after they have occurred, before they get worse and result in severe organisational damage (Weick and Sutcliffe, 2011).

This notion of bounce back resilience also bears a close affinity with the ecological equilibrium model in engineering which anchors on the ability to persevere and survive in the event of an unexpected disruption or return to equilibrium when exposed to perturbations and disturbances (Comfort et al., 2001; Boin, Comfort and Demchak, 2010; Pimm, 1984). However, this view has been criticised on the grounds that the attributes of normality (returning to normal levels of operation/performance) and what it involves is not known (Pendall, Foster and Cowell, 2010).

With its predominant focus on maintaining status quo, bounce back resilience does not account for organisations' ability to develop new growth paths or the continuous reconstruction of business models as it only addresses capacity for resistance and recovery (Gilly, Kechidi and Talbot, 2014; Hamel and Valikangas, 2003). It disregards the possibility of opportunities that might emerge in the face of environmental changes and disruptions that, if properly exploited, can be advantageous for organisations (Dewald and Bowen, 2010; Lengnick-Hall, Beck and Lengnick-Hall, 2011; Vargo and Seville, 2011). Totally focusing on the ability to bounce back after a disruption implies that an

organisation is unlikely to renew itself or affect its environment; and organisational resilience can only be demonstrated after a disruption has happened (Somers, 2009).

Moreover, bounce back resilience defined as a capacity for preserving what organisations have and recovering to where they were reveals a lack of the underlying assumption that resilient organisations can thrive in the face of disruptions (Lengnick-Hall et al., 2011; Sutcliffe and Vogus, 2003; Vargo and Seville, 2011; Weichselgartner and Kelman, 2014). An organisation relying on this type of resilience approaches the future by strengthening the status quo and making the present system of the organisation opposed to change (Gilly et al., 2014). Other literatures question why organisations would want to 'bounce back' to a position in close proximity to where they had disruptions, since it is most likely to be a position of extensive, constant vulnerability, and one which cannot be sustainable (Wisner, 2004). Organisations need more than a capacity to bounce back, if they must survive and thrive in turbulent and uncertain times (Hamel and Valikangas, 2003). Gilly et al. (2013) advocate that organisational resilience should therefore consist of two parts such that apart from coping with disruptions, organisations are able to identify and exploit fresh opportunities and develop new organisational growth paths. Accordingly, Smit and Wandel (2006) emphasise that there is value for organisations in building capacity to both adapt to disturbances and seize opportunities emerging from the changed environment.

In contrast to bounce back resilience, bounce forward resilience, which is a relatively new development in the literature, focuses on the ability of organisations to take advantage of threats and disruptions by having the capacity to identify and capitalise on opportunities emerging from the disruptions. In this case, resilient organisations thrive because of their ability to build new capabilities and capitalise on threats and disruptions (Lengnick-Hall et al., 2011). An example of this view is evident in the case of Sandler O'Neill and Partners following the attacks on the World Trade Centre in 2001. Formerly of the South

Tower, the organisation lost almost forty percent of its people and the majority of physical assets and records. Regardless of the massive losses, they began trading again the week after the attack. Within one year they were doing better than ever with records of profits and revenues and new highly desirable lines of business (Freeman, Hirschhorn and Maltz, 2004).

Bounce forward resilience transcends traditional preservative actions, to embrace transformative measures and activities (Lengnick-Hall et al., 2011). Under this perspective, resilient organisations do not only survive but thrive in the face of disruptions as they combine resources and capabilities not merely to 'bounce back' or 'recover' from disruptions but to more fully recognize and take advantage of emerging opportunities and develop new capabilities (Lengnick-Hall and Beck, 2003). This perspective seems to be influenced by socio-ecological perspective of resilience in the ecology literature, which accepts increased fluctuation and transformation between multiple equilibrium positions, and focuses on the maintenance of critical system functions and processes rather than concentrating on system efficiency and return to single equilibrium state (Holling, 2001).

It is expected that threats and disruptions can be sources of opportunities which if well prepared for and exploited, can lead to positive transformation of organisations. Organisations taking this approach, therefore, focus on finding ways to identify and practically exploit any opportunities ensuing from the threats and disruptions. Vargo and Seville (2011, p. 5620) note that this form of resilience involves an organisation's ability to find the 'silver lining' – seeking out the opportunities – that always arise during a disruption in order to become stronger and better than before the disruption. While bounce forward resilience changes the etymology of the concept, it provides the promise of a

framework against which organisations can develop new growth pathways, self-renew and transform to form a successful future.

Bounce forward resilience may involve an organisation's capability to be innovative for continuous organisational transformation in order to survive and thrive (Hamel and Valikangas, 2003; Reinmoeller and Van Baardwijk, 2005) as well as the ability to strategically manage the human resource of the organisation and get the best out of them (Lengnick-Hall et al., 2011). This form of resilience is particularly relevant if organisations are to thrive in the face of environmental turbulence and uncertainty as the focus here is not simply on solving current problems but developing new capabilities, identifying new opportunities or creating and capitalizing on them (Akgun and Keskin, 2014; Gilly et al., 2014; Hamel and Valikangas, 2003; Lengnick-Hall and Beck, 2005).

Given the above discussion, this thesis argues that the definition of organisational resilience should include the two dimensions expressed in the literature (resilience as bounce back or bounce forward). Therefore, the following definition is proposed:

The capability of an organisation not only to cope with and respond quickly to disruptions, but also to constantly renew its business model, and even capitalize on emerging opportunities in ways that aid the organisation to survive and secure a successful future.

This is a more extensive definition of the concept as it borrows key aspects of the multiple definitions to reflect the fact that organisational resilience does not only mean an organisation's ability to respond quickly to disruptions but also involve developing new capabilities and capitalizing on emerging opportunities. More so, this definition of organisational resilience is in line with the criteria for reducing ambiguity and uncertainty surrounding a construct and ensuring a balance between conceptualization and empirical

validation of the construct (Gilliam and Voss, 2013). The following section discusses other concepts that share some resemblance with organisational resilience to address any overlaps.

### 2.3 Organisational Resilience and Related Constructs

Some organisational attributes (e.g., organisational agility and adaptability) have common elements with organisational resilience. While these organisational attributes can be developed from complementary resources/capabilities and are specifically critical for organisational survival, they each differ from organisational resilience in some ways. As Lengnick-Hall et al. (2011, p. 244) puts it, they have "different origins and outcomes". Organisational agility refers to an organisation's "ability to develop and quickly apply flexible, nimble and dynamic capabilities" for the purpose of adjusting and adapting strategic direction in a core business as circumstances warrant. Otherwise stated, organisational agility summarises an organisation's capacity to efficiently and effectively redirect its resources and capabilities to quickly initiate and take advantage of opportunities while circumventing any adverse effects of change (McCann, 2004; McCann et al., 2009; Teece, Peteraf and Leih, 2016). As such, organisational agility supports the continuous stockpiling of strategic resources and capabilities to ensure quick and effective reactions to change and disruptions. However, organisational resilience is activated by unexpected disruptions and change. An organisation proves its resilience when it experiences disruptions, but then reinventing itself around its core values (Hamel and Valikangas, 2003). For example, several airlines tried to restructure themselves by redefining their business models to preserve their core identities after the September 9/11 attack. Hence, organisational resilience and agility differ in their origins.

Organisational adaptability refers to an organisation's "ability to change itself, or the way in which it behaves, in order to survive in the face of external changes which were not predicted in any precise way when the organisation was designed" (Tomlinson, 1976, p.533). Simply put, it is the ability of an organisation to realign itself with the environment (Chakravarthy, 1982). Hence, organisational adaptability stresses the importance of maintaining a fit with the external environment, thereby taking an outside-in approach. In contrast, organisational resilience incorporates adaptation, renewal, transformation and dynamic capability through an inside-out process.

Although, organisational agility and adaptability can help foster organisational resilience, no one of these organisational attributes can by itself develop organisational resilience. While agility enables organisations to respond to disruptions in a timely manner, resilience seems also to require the capacity to adapt to circumstances and some amount of flexibility (Erol, Sauser, and Mansouri, 2009; Fricke and Schulz, 2005; Hollnagel, 2006; McCann, 2004). Quickly responding to disruptions and identifying opportunities is indeed important in building resilience, but organisations need to be able to identify and deploy relevant resources and capabilities to respond quickly and take advantage of emerging opportunities to develop resilience (Weick, 2001).

Another important point that flags their difference is the fact that the few empirical studies investigating organisational resilience and the other related organisational attributes identified above utilise different measures to operationalize each construct. For example, McCann et al. (2009) in their study of how organisations could build agility, resilience and improve performance in turbulent times used different measures for organisational resilience and agility, indicating that distinct organisational constructs are being examined.

Meanwhile, there is limited research on developing a measurement tool for organisational resilience despite several calls for the development of reliable and valid tools to assess the construct and discussions on its importance as the foundation for more empirical

research (Annarelli and Nonino, 2016; Bhamra et al., 2011; Kamalahmadi and Parast, 2016; Vogus and Sutcliffe, 2007). While there are previous attempts to operationalize and measure the organisational resilience construct (e.g., Kantur and Say, 2015; Lee, Vargo and Seville, 2013; Whitman et al., 2013; e.g., Somers, 2009; Wicker, Filo and Cuskelly, 2013), these measures have some weaknesses that compromise their validity. The following section critically reviews existing measures of organisational resilience and establishes the need for a new measurement tool.

### 2.4 Extant Organisational Resilience Scales

Mallak (1998) operationalized three concepts introduced by Weick (1993): bricolage, attitude of wisdom, and virtual role system. The resultant measurement instrument characterizes organisational resilience in terms of six factors: goal directed solution seeking, avoidance or scepticism, critical understanding, role dependence, source resilience, and access to resources. Somers (2009) built on the work of Mallak (1998) and with data from 142 public work organisations presented four additional factors as metrics for organisational resilience: decision structure and centralization, connectivity, continuity planning, and agency accreditation. Although both studies have provided valuable contributions to knowledge, one significant limitation of these measures is that none of them was developed using random sample and as such is lacking in terms of validity (Lee et al., 2013).

McManus (2008) explored organisational resilience using the grounded theory approach and hypothesized a model for organisational resilience - relative overall resilience (ROR) model – which comprises of three factors. Hence, she defines organisational resilience as "...a function of an organisation's overall situation awareness, management of keystone vulnerabilities and adaptive capacity in complex, dynamic and interconnected environment" (McManus, 2009, p. 82). Based on the three factors of the ROR model, she proposed fifteen indicators of organisational resilience (five for each of the three factors). Lee et al. (2013) used the indicators proposed by McManus (2008) in her three-factor relative overall resilience (ROR) model to develop a measure for resilience. They adjusted the ROR model based on the results of their study and proposed four factors: resilience ethos, situation awareness, management of keystone vulnerabilities, and adaptive capacity. The resultant measurement consisted of 53 items. This scale does not only include items that are unsuitable for the SME context, the number of items require a large commitment in time and energy on the part of respondents.

More importantly, a significant weakness of the existing measures of organisational resilience lies in the operationalization of the construct. As they do not account for the two dimensions and differentiate between them, it is argued that existing measures do not accurately reflect the organisational resilience construct. This deficiency is theoretically significant because the inability to sufficiently capture the basic nature of the organisational resilience construct greatly limits the ability of scholars and practitioners to interpret the role and usefulness of this vital construct (Churchill, 1979). Given that the two dimensions seem theoretically different, this thesis contends that a set of organisational resilience scales that reflects the two dimensions is needed, rather than combine them into a single undifferentiated scale.

Moreover, as the two resilience dimensions differ in their focus and they may require different resources and capabilities (Staw et al., 1981; Boin et al., 2015). Accordingly, recent research calls for scholars to develop a theoretical framework that delineate enablers of specific forms of organisational resilience and their relationships (Boin and Van Eeten, 2013). Similarly, Ho et al. (2014) stress the need for research that delineate the dimensions of organisational resilience as this might have important implications for organisational outcomes such as recovery, rebounding, organisational evolution,

performance, innovation and change. However, existing research have not explicitly distinguished types of organisational resilience at the conceptual level, nor have examined their inter-relationship, or their distinct antecedents and outcomes. By explicitly distinguishing between these organisational resilience dimensions, this thesis aims to operationalise the construct with greater precision and establish a basis on which to explore relationships that have theoretical and practical implications. Specifically, doing so could uncover different resources by which the two dimensions of organisational resilience develop and thus, break new grounds for testing theories about antecedents and outcomes of bounce back and bounce forward resilience.

The main research question of this thesis is – what are the antecedents and performance effects of organisational resilience? This thesis draws on the resource-based view (RBV) of the firm (Barney, 1991) and the dynamic capability perspective (Teece et al., 1997) to guide investigation of the unique antecedents and performance effects of bounce back and bounce forward resilience. Hence, the following section focuses on reviewing the literature on the RBV and dynamic capability perspective to develop a comprehensive theoretical framework.

# 2.5 A Review of Theories

The following theoretical perspectives – RBV and dynamic capability perspective – serve as the underpinning rationales for the proposed research framework for organisational resilience in this thesis.

#### 2.5.1 Resource-Based View (RBV)

The RBV, which is also referred to by some scholars as the resource-based theory (RBT) of the firm (Barney, 1996; Kogut and Zander, 1992; Barratt and Oke, 2007) was developed with an inside-out orientation emphasising internal resources and capabilities as determinants of an organisation's competitive advantage. While various scholars had

earlier discussed and contributed to the notion of the RBV (e.g., Dierickx and Cool, 1989; Rumelt, 1984; Wernerfelt, 1984; Barney, 1991) made the principal contribution to the development of RBV by specifically explaining how the internal resources and capabilities of an organisation result in sustainable competitive advantage. Resources are "stocks of available factors that are owned and controlled by the firm," while capabilities are "a firm's capacity to deploy resources usually in combination using organisational processes to effect a desired end" (Amit and Shoemaker, 1993, p. 35).

RBV suggests that firms are able to achieve competitive advantage over competing firms by accumulating resources and capabilities that are valuable, rare, difficult to imitate, and non-substitutable – VRIN - (Barney, 1991; Rumelt, 1984; Wernerfelt, 1984). Resources and capabilities are valuable if they can be utilised to either exploit opportunities or neutralise threats to the organisation and rare when not available to a large number of an organisation's competitors. Inimitability means it is difficult for other organisations to replicate the resources or can only do so at a significant cost disadvantage and lastly, nonsubstitutability implies that other resources cannot be used by competitors in order to replicate the benefit (Barney, 1991; Hoskisson et al., 1999). These attributes were later modified to value, rare, inimitable, and organisation (VRIO) by Barney and Clark (2007). "Organisation" plays a key role in achieving competitive advantage as an organisation needs appropriate management systems and processes to fully leverage the value embedded in its internal resources. Irrespective of the criteria used (whether VRIN or VRIO), the RBV suggests that an organisation will achieve competitive advantage when it possesses resources that satisfy these conditions (Barney, 1991; Allen and Wright, 2007). This implies that organisations ought to identify resources that will most likely make them more competitive, and then utilise these resources to exploit their value (Sirmon et al., 2007).

The RBV has made important contributions to various academic domains such as strategic management (Lorenzoni and Lipparini, 1999), entrepreneurship (Alvarez and Busenitz, 2001), supply chain management (Barratt and Oke, 2007), corporate governance (Lockett and Thompson, 2001), and strategic human resource management research (Colbert, 2004; Merssersmith and Gurthrie, 2010; Saridarkis, Lai and Copper, 2017; Takeuchi et al., 2007; Wright et al., 2001). However, in the process of its development, it has been assessed and extensively criticized by various scholars in the management literature (e.g., Priem and Butler, 2001; Kraaijenbrink et al., 2010; Leiblein, 2011; Wernerfelt, 2013) and the HRM literature in particular (e.g., Becker and Huselid, 2006; Allen and Wright, 2007; Boxall and Purcell, 2011; Kaufman, 2015).

Scholars have argued that the RBV does not satisfy the criteria for a legitimate theory (e.g., Foss, 1996) on several grounds. First, they argue that the basic logic of RBV is tautological (Foss and Knudsen, 2003; Priem and Butler, 2001). This problem originates from the absolute statement that value and rarity of resources generates competitive advantage as both the independent (value and rare organisational resources) and dependent (competitive advantage) variables are defined in terms of value and rarity - improved efficiency and effectiveness (Priem and Butler, 2001). As a consequence, most empirical research adopting the RBV use a method whereby a particular resource is argued to satisfy the RBV criteria – VRIN, and then correlate the amount of the resource with firm performance or competitive advantage (Newbert, 2007). This approach, apart from creating a tautology, interferes with the meaning of competitive advantage and poses strong limitations on the relevance of RBV to managers in terms of decision making as it fails to prescribe the specific resource characteristics that matter the most in gaining competitive advantage and other organisational outcomes (Foss and Kudned, 2003).

Second, scholars argue that the RBV lacks a clear definition of competitive advantage as its criteria which emphasises valuable, rare, inimitable, and non-substitutable resources and capabilities plus organisation (VRIN/O) is neither necessary nor enough for sustainable competitive advantage (Armstrong and Shimizu, 2007; Newbert, 2007). Third, the definition of resources – everything controlled by a firm that enables the implementation of strategies to improve efficiency or effectiveness (Barney, 1991) - is too general such that many potentially advantageous resource configurations are possible, thereby suggesting equifinality (Priem and Butler, 2001; Victer, 2014). Fourth, it falls short of an adequate explanation of why firms exist (Foss, 1996). Fifth, it does not provide managers with useful advice on the specific resources they require to achieve competitive advantage and how they should be used (Foss and Knudsen, 2003; Priem and Butler, 2001).

Sixth, RBV has some methodological issues as it does not sufficiently consider the synergy within resource bundles as a source of sustainable competitive advantage and fully consider how resources and capabilities are measured especially in terms of the time it takes to conduct analysis. The notion of sustained competitive advantage strongly implies a need for longitudinal analysis, involving both quantitative and qualitative approaches (Priem and Butler, 2001). This poses some challenges for researchers in terms of costs including money and time.

Seventh, the RBV proposes that an organisation's possession of valuable and rare resources forms the basis for value creation (Sirmon et al., 2007), thereby adopting a static perspective of resource application as it pays less attention to change overtime and is insufficient to elucidate how firms develop competitive advantage in changing environments (Priem and Butler, 2001). However, the very nature of resources could change to generate competitive advantage, based on the life cycle of the organisation and

its industry (Castanias and Helfat, 2001; Helfat and Peteraf, 2003). More so, organisations do not operate in a vacuum and the environment in which they operate is characterised by constant change and uncertainty that necessitates innovative, flexible, and rapid organisational responsiveness (Zhang, Wan, and Jia, 2008). This implies that the importance of resources to firm performance and competitive advantage is largely dependent on the characteristics of the business environment. Resources are not supposed to impact firm competitive advantage in a permanent and consistent manner, as in a standardized process.

A number of scholars have discussed the increasing complexity and velocity of change in the business environment including rapid change in customer needs and preferences, rapidly changing technologies, changes in government policies and regulations (e.g., D'Aveni, 1994; Eisenhardt, 1989; Eisenhardt and Martin, 2000; Hamel and Valikangas, 2003, 2010). As these circumstances are sources of both threats and opportunities, it is necessary for organisations to adapt and reorganise quickly to not only survive but also thrive. This implies that the mere possession of valuable and rare resources is not enough in understanding how organisations develop competitive advantage and superior performance especially in dynamic environments.

Resources need to be managed effectively, mobilized and used efficiently to achieve superior firm performance, for example, by building the organisation's capacity for ambidexterity (Fu et al., 2015), innovation (Messersmith and Guthrie, 2010), or exploiting marketing opportunities (Sirmon et al., 2007). In the same vein, it is argued that an organisation's ability to effectively develop, deploy, and utilise resources is key to achieving organisational resilience and creating value for the organisation in environments of rapid change (Lengnick-Hall et al., 2011; Williams et al., 2017). This notion originates from dynamic capability perspective which helps augment the RBV

(e.g., Amit and Shoemaker, 1993; Eisenhardt and Martin, 2000; Helfat, 2000; Helfat and Lieberman, 2002; Teece et al., 1997).

The above criticisms of the RBV were further categorised by Kraaijenbrink et al. (2010) based on an extensive review of the RBV literature. The following table (Table 2.2) summarizes the most significant and pertinent categories to the current research along with an assessment of the criticisms provided by Kraaijenbrink et al. (2010) and applicability to this research.

Limitations and references	Assessment	Relevance to the current research
The RBV has no managerial implication as it does not provide managers with useful advice on the specific resources they require to achieve competitive advantage and how they should be used (Foss and Knudsen, 2003; Priem and Butler, 2001)	Not all theories should have direct managerial implications. Through its wide dissemination, the RBV has evident impact.	A combination of the RBV and dynamic capability perspective used in this thesis results in conceptual framework that has both theoretical and managerial implications.
The RBV is not a theory of the firm (Foss, 1996).	The RBV does not adequately explain why firms exist, but it could offer some useful insights	This is not the focus of the current research and RBV is augmented with another theoretical framework.
The RBV's applicability is too limited (Barney, 2001; Miller, 2003).	The RBV is applicable to firms only in predictable environments.	The dynamic capability perspective which is an extension of the RBV makes up for this shortcoming in the context of the current research.
Sustainable competitive advantage is not achievable (Fiol 2001; Eisenhardt and Martin, 2000).	By including dynamic capability, the RBV is not purely static, though it only explains ex post, not ex ante, sources of sustainable competitive advantage. While no competitive	Sustained competitive advantage is not directly measured in this research, rather firm performance is researched.

 Table 2.2

 Assessment of Selected Limitations to the RBV

	advantage can be sustained forever, a focus on sustained competitive advantage can still provide useful insights.	
necessary nor sufficient for sustainable competitive	The VRIN/O criteria are not always necessary and sufficient to explain a firm's sustainable competitive advantage.	Sustained competitive advantage is not directly measured in this research. However, the dynamic capability perspective makes up for this.

In summary, a dynamic capability perspective is applied in this thesis to make up for the limitations of the RBV. This is line with scholars' recommendations for the use of a more dynamic version of the RBV (e.g., Priem and Butler, 2001; Kraaijenbrink et al., 2010) which aligns with developments in the dynamic capability perspective (Teece et al., 1997; Teece, 2007). Hence, the next section discusses the dynamic capability perspective.

### 2.5.2 Dynamic Capability Perspective

There are numerous and somewhat different definitions of dynamic capability in the existing literature. Teece et al. (1997) originally define dynamic capability as "a firm's ability to integrate, build, and reconfigure internal and external competencies to address rapidly changing environments" (p. 516). Helfat et al. (2007), define it as the capacity of an organisation to purposefully create, extend, or modify its resource base. Teece (2007) further disaggregated dynamic capabilities into the capacity (a) to sense and shape threats and opportunities, (b) to seize opportunities, and (c) to maintain competitiveness through enhancing, combining, protecting, and when necessary, reconfiguring the firm's tangible and intangible resources. Reconfiguration reflects the ability to adjust a resource structure and to accomplish the internal and external transformations to address changes in the environment (Teece et al., 1997).

Teece (2007) argue that dynamic capabilities consist of "difficult to replicate" capabilities required to adapt to changing environment and opportunities (p. 1320). They can be specific processes and routines that combine, transform, or renew resources into new competencies as markets evolve (Eisenhardt and Martin, 2000). This implies that dynamic capabilities are not bought in the market but are rather developed or built over time (Makadok, 2001). They contribute to the competitiveness of an organisation by enabling a series of short-term advantages which helps the organisation stay ahead of its competitors and thereby, maintain competitive advantage (Eisenhardt and Martin, 2000; Teece, 2007). Consequently, an organisation's possession of dynamic capabilities by enabling, for instance, quick response to disruption and development of new capabilities, promises to hold great potential especially in modern day rapidly changing environment (Ambrosini and Bowman, 2009).

While the dynamic capability perspective shares similar assumptions with the RBV, an essential idea of the dynamic capability perspective is that organisations do not only compete through their ability to exploit existing resources and capabilities, but also through their ability to renew and develop them (Nielsen, 2006). This notion further reflects how organisations can develop the two dimensions of resilience identified in this thesis: bounce back and bounce forward resilience, and thereby, might offer important insights into the factors contributing to organisational resilience.

The dynamic capability perspective has been suggested to help explain how organisations could develop and maintain competitive advantage in rapidly changing environments (Teece and Pisano, 1994; Wu, 2010). However, Eisenhardt and Martin (2000) argue that dynamic capabilities are useful not only in rapidly changing environment but also in moderately dynamic environments. Conversely, Zahra et al., (2006) emphasise that a volatile or changing environment is not a requirement for dynamic capabilities. This

viewpoint was supported by Zollo and Winter (2002) who note that dynamic capabilities exist and are used even in stable environments while admitting that they may be more useful in rapidly changing environments.

Eisenhardt and Martin (2000) argue that dynamic capabilities can take different forms. Within a stable environment, they can be a set of complex, detailed, analytical processes that depend heavily on prior knowledge to generate foreseeable results but, in a dynamic environment they are simple, experiential, unstable processes that depend on speedily generated new knowledge to generate unpredictable results (Eisenhardt and Martin, 2000). This implies that the two forms of dynamic capabilities require distinct knowledge resources and organisations need to manage and reconfigure their resources to generate the right form of dynamic capability for each type of environment.

More so, previous research has distinguished between two types of capabilities – operational and dynamic capabilities (Collis, 1994; Helfat et al., 2007; Winter, 2003; Zollo and Winter, 2002). For example, Zollo and Winter (2002) differentiate between operational and dynamic capabilities which are also labelled zero-order and first-order capabilities (Collis, 1994) respectively. Operational capabilities are geared towards the operational functioning of an organisation and are focused on how the organisation earns its living in the present. On the other hand, dynamic capabilities are dedicated to the modification of operational capabilities. In other words, these types of capabilities enable organisations to modify how it currently makes its living, that is, capabilities differ in focus and activities, organisations need to develop appropriate resources and/or reconfigure their resources to create the desired form of capability (Helfat and Winter, 2011). Consequently, knowing what resources are important in developing each form of capability is important. In the same vein, this thesis argues that the development of bounce

back and bounce forward resilience, which represent two distinct forms of capabilities, will require different resources. This resonates with Ho et al.'s (2014) argument that "there may be differing processes and capabilities associated with different types of organisational resilience" (p. 6). In this thesis, therefore, the RBV is augmented with the dynamic capability perspective to explain different resources required to develop the two dimensions of organisational resilience: bounce back and bounce forward resilience.

## 2.6 What Constitute Resources?

At the most basic level, resources include physical capital, human capital, and organisational capital resources (Barney, 1991). Physical capital resources are tangible assets possessed by the organisation which include plant and equipment, physical technology, money, and inventory (Williamson, 1975). Human capital resources are intangible assets of the organisation which include education, experience, relationships, and management training (Becker 1964). Organisational capital resources are intangible assets of the organisation which include an organisation's formal reporting structure, coordinating systems, as well as relationships between employees of the focal organisation and relationships between an organisation and others in its environment such as, suppliers (Tomer 1987). Hence, resources can be tangible or intangible (capabilities).

Existing research argues that the resilience of an organisation is determined by the extent to which the organisation is endowed with resources (Gittell et al., 2006; Meyer, 1982; Sutcliffe and Vogus, 2003; Williams et al., 2017) as these enable them to reconfigure and develop new capabilities, as well as restore and resume performance quickly after a disruption. As Lengnick-Hall et al. (2011) puts it, an organisation can leverage its resources and capabilities not only to resolve current problems but to capitalise on opportunities in order to build a viable future. Prior research has also examined the effects

of various resources (both tangible and intangible) on the organisational resilience construct.

For example, McManus et al. (2008), examined factors that contribute to the resilience of 10 case study organisations to severe shocks in New Zealand and found that an organisation's financial endowment was a key enabler of its resilience. Pal et al. (2014), on their part, investigated factors that facilitate or constrain the resilience of SMEs to economic crisis in Sweden and found that lack of resources such as material, financial and technological resources impaired SME resilience. While these studies clearly show that the endowment and strategic use of resources can enable organisations overcome disruptions and even thrive (Sullivan-Taylor and Branicki, 2011; William et al., 2017), research within the RBV argue that it is more likely for intangible resources (capabilities) to produce a competitive advantage than tangible resources (Barney, 1991; Hitt et al., 2001). In line with this, scholars have identified an organisational internal resources implices and capabilities) as important organisational internal resources in building organisational resilience (Coutu, 2002; Lengnick-Hall and Beck, 2009; Lengnick-hall et al., 2011; Luthans, 2002; Mallak, 1998).

Lengnick-Hall and Beck (2009) contend that an organisation's resilience is embedded in the knowledge, skills, and abilities of its human resources as well as the organisational routines and processes which enables the organisation to overcome possible devastating effects of an unexpected event. Accordingly, Lengnick-hall et al. (2011) propose that strategic human resource management systems are helpful in developing the required knowledge, skills, abilities and other attributes (KSAOs) and in generating suitable organisational routines and processes for the development of organisational resilience. However, research on human resources (employees' strengths and capabilities) and human resource management (HRM) are still relatively lacking in the organisational resilience literature (Copper et al., 2014; Ho et al., 2014). This deficiency is theoretically significant as it limits our understanding of how an organisation's human resources and HRM may contribute to organisational resilience. The next section reviews the literature on human resources, HRM and organisational resilience.

# 2.7 Human Resources, HRM and Organisational Resilience

There is a growing interest in the relationship between human resources, HRM and organisational resilience and there are empirical studies that illustrates the importance of human resource capabilities in building organisational resilience. This stream of research considers employee capabilities such as employee resilience, defined as a set of skills and attitudinal qualities such as problem-solving skills and interpersonal/social relationship (Wang et al., 2014), as a key resource for navigating adversity (Avey et al., 2009) and developing organisational resilience (Mallak, 1998). Accordingly, such studies emphasize and examine the role of HR practices in developing and maintaining employee resilience in the organisation context and its effect on individual and organisational wellbeing and performance (Avey et al., 2009; Bardoel et al., 2014; Cooke et al., 2016; Robertson, et al., 2015).

For example, Cooke et al. (2016), in a study of the banking industry in China, examined the role of high-performance work systems in developing employee resilience and the extent to which individuals and the organisation benefit from them. Huang, Xing, and Gamble (2016), on their part, concluded that organisational resilience can be enhanced by the use of bundles of HR practices that enhance individual employee well-being and ability to cope with adversity (employee resilience). Taking a slightly different approach, Lengnick-Hall et al. (2011) studies HR system as a factor influencing organisational resilience by explaining how different HR practices and policies configurations contribute to improve an organisation's ability to build a capacity for resilience through developing its human capital. Apart from HR practices, scholars also propose the use of HR interventions (e.g., training) as a way of engaging employees and developing a resilient workforce to enable organisations compete in the marketplace (e.g., Mallak, 1998; Robertson et al., 2015).

While emerging stream of research has approached the process through which HR practices may impact resilience in different ways, a common feature of these studies is the use of bundles of HR practices. For example, Bardoel et al. (2014) emphasise that a coherent set of HR practices such as the development of social support at work, work-life balance practices, employee assistance programmes, employee development programmes, flexible work arrangements, reward and benefit systems, occupational health and safety systems, crisis management systems, and diversity management may strengthen employee resilience. Moreover, Cooke et al. (2016) study of employee resilience in the Chinese banking sector asserted that HPWS can develop and maximize employee resilience to enable organisations respond more effectively to disruptions.

This is consistent with the extant HRM literature which regularly emphasise that the influence of HR practices on individual and organisational outcomes demands a focus on the overall HRM system (Huselid, 1995; Wright et al., 2001). This is because an organisation's employees are exposed to various HR practices simultaneously and so, these practices do not independently influence the employees (Jiang et al., 2012), but rather work in harmony to shape the skills and behaviours/motivations of employees towards the achievement of organisational goals (Jiang et al., 2012; Lado and Wilson, 1994; Lepak et al., 2006).

Accordingly, the strategic human resource management (SHRM) research has mostly hypothesized that bundles of HR practices referred to as high-performance work systems

(HPWS) contribute to superior firm performance by increasing the ability of employees (Huselid, 1995; Lepak, Taylor, Tekleab, Marrone, and Cohen, 2007) and motivating them to adopt behaviours that utilize the organisation's resources in a creative manner and in line with organisational strategy (Appelbaum, Bailey, Berg, and Kallerberg, 2000; Becker and Huselid, 1998; Drummond and Stone, 2007; Schuler and Jackson, 1987).

HPWS is generally referred to as a system of horizontally and vertically aligned employment practices designed to influence both the ability and motivation of an organisations' employees (Huselid, 1995; Patel et al., 2013; Takeuchi, Chen, and Lepak, 2009). Based on the work of Huselid (1995), the practices include comprehensive employee recruitment and selection procedures, incentive compensation, performance management systems, as well as employee involvement and training practices. The literature in this domain has consistently argued that the practices themselves do not constitute a source of competitive advantage; rather, competitive advantage and superior firm performance results from the human resources that are developed by the HPWS (Huselid, 1995; Patel et al., 2013; Wright, Dunford, and Snell, 2001; Wright et al., 1994). The underlying logic is that employees will increase the contributions they make to their organisation if they possess the abilities, motivation and opportunity to control and understand their work (Appelbaum et al., 2000).

By the same logic, organisational resilience is not likely to arise from a set of HR practices, but rather out of an organisation's unique human resource base (Barney, 1991; Cooper et al., 2016; Lengnick-Hall et al., 2011). More precisely, it is achieved through shaping the knowledge, skills, abilities and behaviours of an organisation's human resources toward exhibiting quick response to threats and disruptions and capitalizing on emerging opportunities (Demmer et al., 2011; Lengnick-Hall et al., 2011; Williams et al., 2011). In other words, HR systems are likely to influence organisational resilience

through various HR practices that work in concert to influence the abilities and motivation of employees, which are noted to be necessary elements of a resilient organisation (Bell, 2002; Lengnick-Hall et al., 2011). This is possible since HPWS may improve employees' abilities, motivations, and opportunities to combine, integrate and create knowledge, and therefore, provide a means for organisations to build resilience.

As Lengnick-Hall et al. (2011) stated, an organisation's capacity for resilience derives from a set of individual level knowledge, skills, and abilities, and organisational routines and processes that makes it possible for the organisation to overcome disruptions so that it is inextricably tied to the organisation's effort to proactively and strategically manage human resources. They argue that to become resilient, organisations must design their human resource systems in such a way that connects and aligns the human resource principles, human resource policies, and the desired employee contributions. In other words, organisations aiming to build resilience must put in place HRM practices that work to develop capabilities in their human resource base, so that employees have the ability and motivation to devote their efforts towards activities associated with resilience such as quickly responding to disruptions that may otherwise have devastating effects on the organisation and capitalizing on emerging opportunities.

However, existing research on HRM and organisational resilience majorly focus on large organisations (e.g., Bustinza et al., 2016; Khan et al., 2017; Lengnick-Hall et al., 2011) and it is not clear how such insights can be transferred to the SME context. SMEs differ from large organisations in terms of structure and suffer resource constraints (Herbane, 2010; Storey, 2010) and models designed for large organisations are considered too complex and costly for SMEs. For example, formal procedures for employee recruitment and selection which are designed as an approach to getting skilled employees and have been widely used by large organisations to get required expertise are considered too

complicated and expensive for SMEs to implement (Klaas, McClendon, and Gainey, 2000; Sels et al., 2006). Also, the use of detailed performance management systems is scare in the SME context as developing and implementing such complex systems need formal controls, HR expertise, and takes a lot of time which constitute constraints in SMEs (Cardon, 2003; Cardon and Stevens, 2004; Klaas et al., 2000; Patel and Cardon, 2010). Hence, effective human resource management is a key issue facing SMEs (Cardon and Stevens, 2004; Grigore, 2013; Hornsby and Kuratko, 1990; Patel and Cardon, 2010; Tocher and Rutherford, 2009), particularly in the area of employee recruitment, compensation, and motivation (Cardon and Stevens, 2004).

Nonetheless, the survival of SMEs in the increasingly complex and rapidly changing environment may depend on the effective management of their employees (Patel and Cardon, 2010) especially, as they have limited resources and lack legitimacy (Stinchcombe and March, 1965). Indeed, much is lost if an organisation does not manage its human resources effectively. It is argued that this is true for SMEs as it is for large organisations. As SMEs are often more labour intensive (Hayton et al., 2013), effective HRM may help improve their performance in creativity, innovation, flexibility and resilience (Lai et al., 2016) especially in times of economic uncertainty.

HR practices may be less formal and more limited in scope and sophistication in SMEs given resource constraints (Andenova and Zuleta, 2007; Cardon and Stevens, 2004; Castrogiovanni et al., 2011). However, a growing stream of research shows that there are many exceptions to this pattern (Kok and Uhlaner, 2001; Pajo et al., 2010; Zheng et al., 2006). On the other hand, while HR practices involve a diverse set of activities such as staffing, developing, retaining, empowering and motivating, some SMEs may develop only a few specific practices.

Existing research emphasize the importance of HR practices in the SME context and there are empirical studies on the relationship between individual or multiple HR practices and firm performance in the SME context (e.g., Drummond and Stone, 2007; Sels et al., 2006; Sheehan, 2014; Way, 2002). For example, Way (2002) found a positive relationship between the use of formal HR practices and labour productivity among SMEs in the United States of America. A recent study of British SMEs also found a significant positive longitudinal link between the use of formal HR practices and different indicators of firm performance (Sheehan, 2014). However, it is unlikely that HRM has much influence for very small firms that are without specialist HR professionals. These at best might use hard HRM as a means of maximizing shareholder value over the short term. They might focus more on making profits and so focusing on employee rights might be a distraction. Rather, by focusing on returns, the organisation might perform most efficiently, which ultimately is in the interests of all (e.g., performance-based pay).

Overall, HRM has been identified to play an important role in the development of organisational resilience to the extent that they influence the development of desired employee outcomes required by organisations to cope with disruptions and even develop new capabilities to capitalise on opportunities (Sheehan, 2012). These theoretical relationships push to the forefront the significance of human resources (employees' strengths and capabilities). This resonates with the stream of HRM literature which argues that a firm's competitive advantage is entrenched in the human resources themselves and not the HR systems used to select and develop them (Wright et al., 1994) and the logic that organisational resilience does not directly arise from HR systems but emerges from employees' strengths and capabilities (e.g., human capital, social capital) that HR systems help build and shape (Cooper et al., 2014; Khan et al., 2017; Lengnick-Hall et al., 2011) In this same vein, this thesis argues that employee strengths and capabilities (e.g., employee resilience, employee well-being, human capital, social capital etc.) are essential

components of the organisational toolbox through which organisations can develop capabilities such as bounce back and bounce forward resilience (Cooper et al., 2014; Ho et al., 2014; Mallak, 1998; Wang, Jaw, and Tsai, 2012).

While there is a growing stream of research on the relationship between human resources and organisational resilience as detailed earlier, scholars have predominantly focused on the psychological attributes of human resources (e.g., employee resilience, employee well-being, etc) and there is dearth of empirical research on the role of human and social capital in the development of organisation resilience. Moreover, the few existing research tend to draw on the RBV to merely imply the influence of human and social capital on organisational resilience (e.g., Lengnick-Hall and Beck, 2009; Lengnick-Hall et al., 2011) and there is lack of empirical evidence supporting the theories. This has led Ho et al. (2014) to urge researchers to untangle and examine the human resource elements that are important in developing organisational resilience. The current research answers this call by further focusing on human and social capital as two strategic resources that are particularly important in developing organisational resilience and subsequent firm performance. By doing so, this thesis supplements research that focuses on HR practices and human resource psychological attributes as antecedents to organisational resilience which is relatively established in the literature (e.g., Bardoel et al., 2014; Bustinza, Vendrell-Herrero, Perez-Arostegui, and Parry, 2016; Khan et al., 2017; Lengnick-Hall et al., 2011; Roberson et al., 2015). The next section reviews the literature on human and social capital and organisational resilience.

# 2.8 Human Capital, Social Capital and Organisational resilience

Human capital is an aspect covered by human capital theory which maintains that knowledge provides human resources with increased cognitive abilities, leading to better efficiency and productivity (Davidsson and Honig, 2003). It has been defined as the knowledge, skills, and abilities embedded within an organisation's employees that are developed from and shaped by their learning, education, and training (Becker, 1964; 1993). Various scholars consider human capital as a strategic resource that enables organisations to achieve competitive advantage (e.g., Adner and Helfat, 2003; Carmeli and Tishler, 2004; Kostopolous et al., 2015; Messersmith and Guthrie, 2010; Reed et al., 2006). Besides, various studies have found a relationship between human capital and some organisational outcomes such as organisational ambidexterity (e.g., Kostopolous et al., 2015), innovation (Subramaniam and Youndt, 2005), and firm performance (Carmeli and Tishler, 2004; Youndt and Snell, 2004; Takeuchi, 2007).

This thesis argue that human capital can support an organisation's resilience capacity as employees possess the competence and creativity that organisations require to adapt to disruptions and leverage emerging opportunities (Bell, 2002; Lengnick-Hall and Beck, 2005, 2009; Lengnick-Hall et al., 2011; Snell and Dean, 1992). It is indeed through human capital that organisations are able to access and use knowledge from various sources, determine innovative solutions to disruptions, and challenge prevailing assumptions (Subramaniam and Youndt, 2005). Akgun and Keskin (2014) emphasize that an organisation's resilience depends on the cognitive capital possessed by the organisation and the specificity of its mode of governance, that is, the totality of the nature and quality of knowledge acquired by the organisation. This cognitive capital and knowledge reside in employees.

Organisational resilience involves constructive sense making which enables a firm and its employees to interpret and provide meaning to disruptive surprises (Weick, 1995). The extent to which an organisation makes sense of changes in the environment, sees opportunities, identifies the range of alternatives, determines actions, and carries them out depends on the organisation's human capital (Amabile, 1988; Carmeli et al., 2013; Lengnick-Hall et al., 2011). As Lengnick-Hall and Beck (2009) note, human capital enables organisations to develop more diverse mental models and dynamically adapt to disruptions and capitalise on opportunities. Such diverse cognitive frames developed through human capital enables organisations to quickly respond to disruptions in effective ways as well as transform themselves by taking advantage of the opportunities that emerge from the disruptions (Lengnick-Hall et al., 2011) to both survive and thrive in the face of disruptions. In essence, human capital increases the problem-solving capacity of the organisation, especially in the face of disruptions. Since responding quickly to disruptions and the development of new capabilities require some level of knowledge (Demmer et al., 2011; Pal et al., 2014; Subramaniam and Youndt, 2005), employees' skills, knowledge and expertise are important predictors of organisational resilience. Creative and knowledgeable employees are more likely to develop solutions and new ideas (Anand, Gardner, and Morris, 2007) or question existing ways of doing things and act as organisational change agents (Amabile, 1997).

Social capital which is covered by social capital theory (Adler and Kwon, 2002; Burt, 1992; Coleman 1988; Nahapiet and Ghosal, 1998) is a resource resulting from relationships among persons in a social setting. Nahapiet and Ghoshal (1998) define it as "the sum of the actual and potential resources embedded within, available through, and derived from the network of relations possessed by an individual or social unit" (p. 243). It involves employees' ability to access resources through relationships and connections (Adler and Kwon, 2002). The formal and informal network ties of an organisation's employees help acquire essential resources and provide critical information for problem solving (Burt, 2000). Social capital is different from human capital in the sense that while human capital resides exclusively within an individual and focuses on the stock of expertise accumulated by the individual (Halpern, 2005), social capital resides in the

social relationships between individuals and incorporates the resources that exist in these relationships and networks (Burt, 1992; Coleman, 1988; Zheng, 2010).

Social capital has also been identified as a source of competitive advantage. Subramaniam and Youndt (2005) found that social capital leads to both incremental and radical innovation capabilities. Also, Kostopoulos et al. (2015) found that social capital contributes to unit ambidexterity and subsequent unit performance in a study of business units from various organisations in the US. These studies indicate the crucial role that social capital play in developing competitive advantage.

Like human capital, social capital constitutes a vital factor that contributes to organisational resilience. Pal et al. (2014) noted the importance of social capital as a valuable source that can facilitate the recovery of organisations, particularly SMEs, from disruptions. In an analysis of organisational recovery after Hurricane Katrina, Doerfel et al. (2010) found that social capital formed a fundamental recovery source and that relational resources could be renewed, restored, and formed where there was no previous relationship. Likewise, Powley (2009) proposed a model to explain how resilience is activated by social connections and interpersonal relationships. He introduced the term "resilience activation" which involves social mechanisms and emphasizes the value of interpersonal networks to enable organisational resilience.

The above discussion clearly forms part of the story on antecedents to organisational resilience. However, more remains to be known about the exact nature of the relationships between human and social capital and the two dimensions of organisational resilience: bounce back and bounce forward resilience as studies to date, only link these variables to an overall construct of organisational resilience (e.g., Lengnick-Hall et al., 2011; Pal et al., 2014). This is theoretically misleading as the two forms of organisational resilience are conceptually distinct. Accordingly, recent research has called attention to the need for

a theoretical framework that proposes precise relations between organisational-level attributes and specific types of organisational resilience (Boin and Van Eeten, 2013). To fill this gap, this thesis examines the role of organisational-level human and social capital in building bounce back and bounce forward resilience. This is because current research suggests that human and social capital at the organisational-level may manifest in various forms (Ployhart et al., 2014; Nyberg et al., 2014). In particular, when aggregated to the organisational-level, employees' knowledge, skills, abilities and other attributes (KSAOs) can range from being homogeneous (i.e., employees have more or less the same KSAOs) to being heterogeneous (i.e., employees have different KSAOs) in content. Similarly, the two main conduits through which organisations develop social capital could result in two different forms of organisational-level social capital: bonding and bridging social capital (Adler and Kwon, 2002; Burt, 2000; Payne et al., 2013). It is reasoned that by investigating how these organisational-level human and social capital relate to bounce back and bounce forward resilience, the thesis could help uncover and specify different resources and capabilities that could have important implications for developing bounce back and bounce forward resilience.

The remainder of this chapter presents a review of the literature on the key research constructs in this thesis – organisational-level human capital, organisational-level social capital, and firm performance. To avoid repetition, bounce back and bounce forward resilience are excluded from this discussion as they have been defined and discussed earlier in the chapter. Subsequently, hypotheses are developed to address the interrelationships of the research constructs under study and a conceptual framework is set out. Different forms of organisational-level human and social capital are considered key antecedents to bounce back and bounce forward resilience while firm performance is taken as an important outcome in this thesis.

## 2.9 Organisational-Level Human and Social Capital, and Firm Performance

### 2.9.1 Organisational-Level Human Capital

Scholars have recently distinguished between human capital (individual-level) and human capital resource (organisational-level), and more importantly, SHRM researchers have defined human capital as a higher-level phenomenon (Nyberg, 2018; Ployhart and Moliterno, 2011; Ployhart et al., 2014). Ployhart and Moliterno (2011, p. 127) differentiating between different forms of human capital define organisational-level human capital, which they labelled *human capital resource*, as a "unit-level resource that is created from the emergence of individuals' knowledge, skills, abilities and other characteristics (KSAOs)". Similarly, Ployhart et al. (2014) discussed how unique human capital is combined at the firm level, conceptualizing firm-level human capital as emanating from individual level differences in KSAOs. First, these definitions highlight the collective nature of the human capital and does so in a way that aligns with how SHRM literature have examined firm-level constructs that has individual-level origin. Second, they account for the possibility of having multiple different types of organisational-level human capital resulting from the interactions and complementarities of multiple individual KSAOs.

Drawing on this literature, this thesis examines two forms of organisational-level human capital: homogenous collective human capital and heterogeneous collective human capital. The former represents a combination of individual-level KSAOs that results in collective human capital homogeneous in its content (Ployhart et al., 2014). On the other hand, the latter reflects a combination of individual-level KSAOs that results in collective human capital that is heterogeneous in its content (Ployhart et al., 2014). These two forms of collective human capital are expected to be uniquely relevant to bounce back and bounce forward resilience.

#### 2.9.2 Organisational-level Social Capital

The social capital literature distinguished two types of social capital: bonding and bridging social capital (Adler and Kwon, 2002). Bonding social capital is the resources made available from social connections among individuals or groups within an organisation, while bridging social capital goes beyond the internal connections within an organisation to focus on the resources accessible through external linkages of individuals or groups. The former reflects inward looking homogeneous relationships within a collective such as an organisation while the latter represents network diversity or heterogeneity which emphasizes the importance of relationships external to the organisation. Hence, bonding and bridging social capital capital can be interpreted as homogeneous and heterogeneous networks respectively. Again, these two types of social capital at the organisational-level are expected to have distinct relationships with bounce back and bounce forward resilience.

In summary, the inherent differences in the main attributes of different combinations of organisational-level human and social capital could account for their influence on bounce back and bounce forward resilience. As noted by some scholars (e.g., Ployhart et al., 2006; Moynihan and Peterson, 2004), the facets of organisational-level human and social capital are theoretically and empirically distinct with unique consequences. Moreover, the RBV literature suggests that a combination of resources is more likely to lead to superior firm performance or other organisational outcomes than resources used in isolation (Dierickx and Cool, 1989; Newbert, 2008). In other words, the combination of interdependent resources can create value for the organisation above and beyond the value created by individual resources. It is the premise of this research that organisational-level human capital (homogeneous collective human capital and heterogeneous collective human capital) and organisational-level social capital (bonding and bridging social

capital) can be considered strategic resources that can possibly improve bounce back and bounce forward resilience.

### 2.9.3 Firm Performance

Firm performance indicates how effectively an organisation runs its business (Chan et al., 2017). It is a key measure used to evaluate the success, or the mere possibility of survival, of an organisation. Firm performance is one of the most relevant constructs in management and organisational studies (Rumelt, Schendel, and Teece, 1994) and is frequently considered the final outcome of a business model (e.g., Fu, Flood, Bosak, Rousseau, Morris, and O'Regan, 2017; Richard, Devinney, yip, and Johnson, 2009; Sun, Aryee, and Law, 2007; Wright et al., 2005). In this thesis, firm performance is being considered as the principal consequence of the two dimensions of organisational resilience.

In practical terms, firm performance can be measured in a number of ways. Dyer and Reeves (1995) noted four different measures of firm performance that are suitable for research in the strategic human resource management (SHRM) domain. These include, (1) financial or accounting outcomes such as profitability, return on assets, and return on invested capital; (2) human resource outcomes such as absenteeism, turnover, and individual or group performance; (3) stock market performance (stock value or shareholder return); (4) organisational outcomes such as productivity, quality and service. This thesis used Delaney and Huselid's (1996) subjective market performance measure as the firm performance indicator. This subjective firm performance measure includes growth in sales, market share, profitability, customer satisfaction, employee satisfaction, innovativeness and quality (Delaney and Huselid, 1996). While there are some issues with the use of subjective measures, such as the potential for common method biases and increased measurement errors, there remains some convincing justifications for employing such measures (Chuang and Liao, 2010; Takeuch et al., 2007). First, research

notes that objective data on the financial performance of SMEs are hardly available especially, as SME owner-managers are not legally required to publish these information (Lubatkin et al., 2006; Miles, Covin, and Heeley, 2000). Second, Wall et al. (2004) in their research on relationship between management practices and performance, established convergent, discriminant, and construct validities of subjective performance measures judged against objective performance measures, indicating that subjective measures are appropriate proxies to measure firm performance especially when objective measures are unavailable. Wall and colleagues also estimated an average of .52 correlations between managers' perceived firm performance and actual firm performance, suggesting that subjective measures of firm performance correspond to objective ones. Similarly, Forth and McNabb (2008) found strong positive correlations between both measures, signifying that subjective measures of firm performance can be considered appropriate alternatives to objective measures. Third, some previous studies have frequently used subjective performance measures without directly testing objective ones (e.g., Den Hartog and Verburg, 2004; He and Wong, 2004; Kostopoulos and Bozionelos, 2011; Patel and Conklin, 2012; Saridakis, Muñoz Torres and Johnstone, 2013; Sun et al., 2007; Yin Wong and Merrilees, 2008).

## 2.10 Hypotheses Development

As discussed earlier, this thesis builds on the theoretical foundation of the RBV and dynamic capability perspective. Combined, these theoretical lenses drive the research hypotheses generation and facilitate the theoretical model development. Six hypotheses are developed to examine the interrelationships of bounce back and bounce forward resilience with their two major antecedents and one chief consequence (firm performance). The first set of hypotheses link homogeneous and heterogeneous collective human capital to bounce back and bounce forward resilience while the second set relates bonding and bridging social capital to bounce back and bounce forward respectively.

Following these, the effects of bounce back and bounce forward resilience on firm performance are hypothesised. The theoretical model is graphically presented in Figure 2.1.

2.10.1 Organisational-level Human Capital Effects on Bounce Back and Bounce Forward Resilience.

Organisational-level human capital, that is, "unit-level resource that is created from the emergence of individuals' knowledge, skills, abilities, and other characteristics that are accessible for unit-relevant purposes" (Ployhart et al., 2011, p. 127) is an important resource in developing organisational resilience. In this thesis, two forms of organisational-level human capital, homogeneous and heterogeneous collective human capital, are considered strategic resources that could enable bounce back and bounce forward resilience respectively. These strategic resources are needed for organisations to best respond to disruptions and/or take advantage of emerging opportunities, enabling the creation of dynamic capabilities under the RBV.

Organisations with homogeneous collective human capital are more likely to have shared and redundant knowledge. This is because homogeneous collective human capital, due to the level of similarity in its content, reduces the quality of ideas, information, and knowledge retrieved for problem solving, and decreases the possibility that organisational members seek innovative and new solutions. Such organisations use knowledge in a manner that is consistent with current organisational processes and routines (Ployhart et al., 2014) and hence, adopt routines for efficiency and status quo, rather than innovation. As bounce back resilience refers to an organisation's ability to quickly recover from disruption and thus focuses on resuming performance to status quo, it usually relies on "well learned" and dominant knowledge skills and processes to recover and preserve the efficiency of existing business model (Staw et al., 1981, p.502). Hence, organisations with high levels of homogeneous collective human capital are more likely to provide the

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necessary resources for organisations to merely recover, resulting in high bounce back resilience.

On the other hand, bounce forward resilience refers to an organisation's ability to develop new capabilities and therefore, to take advantage of opportunities emerging from disruptions (Lengnick-hall et al., 2011). This type of organisational resilience focuses on the renewal or reconfiguration of the organisation's capabilities that promotes its future viability (Hamel and Valikangas, 2003; Reinmoeller and Van Baardwijk, 2005). It's focus on renewal or change implies a need for diverse perspectives that can be combined and synergised to develop new capabilities, novel solutions and alternative growth paths. Heterogeneous collective human capital can help in the development of bounce forward resilience for the following reasons. First, the diverse knowledge base aids the collective sense making process when disruptions happen (Weick, 1995). Second, organisations characterised by heterogeneous collective human capital are more likely to generate new ideas and better problem solving skills that drive innovative solutions in the face of disruptions (Garcia-Vega, 2006; Quintana-García and Benavides-Velasco, 2008). Third, organisations with diverse set of knowledge, skills, and abilities among employees and benefits from complementarities that can enhance the development of new growth paths because they have broader organisational problem-solving routines and search space (Nelson and Winter, 1982; Giovanni Dosi, 1988), and are particularly more innovative (Garcia-Vega, 2006; Quintana-García and Benavides-Velasco, 2008). The works of Laursen et al. (2005) and Han et al. (2014) shows that firms which have employees with diverse knowledge, skills, and abilities and experiences are more likely to develop new combinations of internal knowledge through interaction and learning. Overall, the diversity inherent in this type of human capital is an essential element of an organisation's capacity to renew itself and develop creative and novel solutions in the face of disruptions.

Taken together, homogeneous collective human capital which is prone to shared and possibly redundant knowledge is expected to be positively related to bounce back resilience whereas, heterogeneous collective human capital which facilitates the development and exchange of unique and diverse knowledge is expected to be related to bounce forward resilience as the exchange and combination of non-redundant contributions give rise to a novel solution for organisational problems. Against this backdrop, this thesis posits that;

*Hypothesis 1a (H1a): Homogeneous collective human capital is positively related to bounce back resilience.* 

*Hypothesis 1b (H1b): Heterogeneous collective Human capital is positively related to bounce forward resilience.* 

2.10.2 Organisational-level Social Capital Effects on Bounce back and Bounce Forward Resilience.

Social capital distinguishes between bonding and bridging social capital at the organisational level. Bonding social capital refers to resources, such as information and knowledge, originating from strong relationships and personal interactions between and among members of an organisation (Coleman, 1988; 1990). Hence, it emphasizes strong social capital in line with common norms, consistent decision frames and routine interactions. Bonding social capital can benefit bounce back resilience in various ways. First, the overall connections among individuals in an organisation result in shared understanding of how organisational issues should be handled and coordinated, thereby facilitating the pursuit of collective goals and cohesiveness (Adler and Kwon, 2002). In other words, individuals in an organisation who are closely connected have a shared language, culture, and narratives which suggests common perspectives (Tsai and Ghoshal, 1998), a common frame of reference (Nahapiet and Ghoshal, 2000), and shared

cognitive map of "appropriate" ways of responding to threats and disruptions so that they share routines that aid their organisation in "exploiting old certainties" (March, 1991, p. 71). Second, dense organisational networks, which reflects bonding social capital, can help organisations detect environmental changes early, respond quickly to recover and resume previous performance levels (Van Der Vegt et al., 2015). Third, strong bonding relationships promote reliance on established modes of thinking and performing (Grabher and Others, 1993; Pillai et al., 2017). As employees who are closely connected have a shared language, culture and narratives (Nahapiet and Ghoshal, 2000; Tsai and Ghoshal, 1998), it is unlikely that they would question prevailing assumptions that would highlight the need for experimenting new ideas or developing novel solutions when disruptions occur, and thereby enable bounce forward resilience. In a study of start-up venture capital firms and their co-investing relationships with other firms, Godesiabois (2008) found that bonding social capital leads to the enforcement of common norms that limits alternative ways of solving problems within organisations. Fourth, the strong social norms that are active within bonding relationships could lead to cohesiveness among employees, making them liable to groupthink and restricted to standard routines and practices rather than engaging in opportunism and experimentation (Oh, Labianca and Chung, 2006; Reagans and McEvily, 2003). As Stam and Elfring (2008) note, organisations and in particular, SMEs that rely exclusively on bonding social capital may face significant pressures to conform to the norms and practices that prevail in their organisations. Due to redundant information, organisations with strong bonding social capital might exhaust available ideas fairly quickly and therefore, resort to established routines when disruptions occur, ultimately bouncing back rather than bounce forward.

In contrast to the bonding relationships, bridging social capital focuses on an organisation's external ties to other institutions and people outside the focal organisation. This form of social capital bridges organisational boundaries for access to novel information and ideas (Adler and Kwon, 2002), that may enhance an organisation's ability to respond to threats and disruptions in novel and dynamic ways as well as identify and capitalize on new opportunities (Lengnick-Hall et al., 2011). In this case, social capital is seen as thriving because of the ability to connect to people outside the organisation. The actions of an organisation can be significantly facilitated by the indirect ties it has with external individuals and other institutions through the direct ties it has with its employees. For instance, an organisation's employees may have social relationships with various external stakeholders such as customers, suppliers, and competitors. These relationships are external to the organisation and connect the organisation to a diverse external stakeholder (Cao, Simsek and Jansen, 2015; Granovetter, 1983).

Bridging social capital facilitates an organisation's access to novel ideas, diverse information, knowledge, perspectives and approaches (Burt, 2000; Hargadon, 1998; 2008; Hargadon, 2002) that could help circumvent intra organisational biases in dealing with environmental threats and disruptions. Rather than depending on existing information and knowledge for solving organisational problems, organisations are able to question prevailing assumptions/familiar routines and broaden their repertoires of solutions to disruptions, thereby increasing their likelihood of generating novel solutions and developing new growth paths. The diversity embedded in bridging social capital provides new, non-redundant information and knowledge and encourages intense discussions and careful considerations of various opinions that can develop into debates and the surfacing of new ways of doing things (Baker and Obstfeld, 1999; Beckman and Haunschild, 2002; Beckman, 2006; Pirolo and Presutti, 2010). Since bounce forward resilience involves the development of new capabilities and new growth paths which requires questioning prevailing norms and seeking fundamentally novel solutions to organisational or environmental threats and disruptions (Hamel and Valikangas, 2003; Lengnick-Hall and Beck, 2005; Lengnick-Hall et al., 2011), access and exposure to diverse information and knowledge resources can help organisations discover novel solutions to organisational problems.

The literature on creativity suggests that organisations that have access to diverse information, knowledge, and perspectives facilitate innovative capabilities (Perry-Smith and Shalley, 2003; Perry-Smith, 2006) and prior studies have discussed positive effects of bridging social capital on innovative activities (e.g., Holmen, Pedersen and Torvatn, 2005; Inkpen and Tsang, 2005; Koka and Prescott, 2002; Ozman, 2009; Pérez-Luño, Wiklund and Cabrera, 2011). This is so because variety facilitates better options and novel ways of responding to disruptions such as the development of new markets. When people in an organisation have strong ties with diverse networks, the information and knowledge they share is made up of a wide range of ideas, information, and perspectives. Sharing this sort of broad knowledge from diverse networks further encourages the use of existing resources in new ways to capitalize on opportunities emerging from disruptions more than a consideration of narrow knowledge base that focuses on common norms (bonding social capital) because employees with a variety of networks have different understandings about organisational issues such as customer requirements, productive organisational cultures, appropriate routines and processes. According to Ferrier (2001 p. 858), organisations with strong bridging relationships "can march complex competitive challenges and uncertain contexts with a requisite level of cognitive and experiential variety". Bridging ties broaden the cognitive and behavioural repertoire of the organisation (Harrison and Klein, 2007).

Based on the above, it appears logical that the bonding social capital which emphasizes strong social capital in line with common norms, consistent decision frames and routine interactions would be more likely to result in efforts to achieve bounce back resilience while the bridging social capital which focuses on diversity, dissimilar capabilities and perspectives is aligned with building bounce forward resilience capability. Hence,

*Hypothesis 2a (H2a):* Bonding social capital is positively related to bounce back resilience.

*Hypothesis 2b (H2b):* Bridging social capital is positively related to bounce forward resilience.

#### 2.10.3 Organisational Resilience and Firm Performance

Existing studies indicate that organisational resilience capacity influences firm performance (Akgun and Keskin, 2013; Hamel and Valikangas 2003; Lengnick-Hall et al., 2011; Mallak 1998; Pal et al., 2014), but how it is related to firm performance is not well understood. In particular, the link between the two dimensions of resilience and firm performance has neither been theoretically clear nor empirically established. Therefore, a review of the performance implications of the bounce back and bounce forward resilience is provided with hypotheses.

#### 2.10.3.1 Bounce back and Bounce Forward Effects on Firm Performance

This thesis positions bounce back and bounce forward resilience as capabilities that enable effective use of resources to respond quickly to disruptions and recover or aid efforts to neutralise threats and take advantage of opportunities from changing environments (Lengnick and Beck, 2005; Lengnick-Hall et al., 2011), ultimately leading to the achievement or maintenance of sustainable competitive advantage (Eisenhardt and Martin, 2000; Teece 1997). Existing research suggests that organisational resilience is a complex capability that is a critical element of the competitive strategies of organisations especially in a turbulent environmental condition (e.g., Akgun and Keskin, 2014; Gilbert et al., 2012; Hamel and Valikangas, 2003; Lengnick-Hall et al., 2011). Bounce back resilience, on the one hand, is concerned with an organisation's ability to maximize the efficiency of its existing business model to ensure the current viability of the organisation (Hamel and Valikangas, 2003). Although organisations that focus on bounce back resilience are less likely to identify or capitalize on emerging opportunities, they have the capacity to re-establish equilibrium with the new realities in their prevailing environmental circumstances (Horne and Orr, 1998; Wildavsky, 1998). Rather than develop new capabilities, the organisation aims at optimizing the efficiency and reliability of the existing business model. Hence, existing resources and capabilities are used to maintain the existing business model in the face of threats and disruptions.

On the other hand, bounce forward resilience is concerned with seeking to develop new capabilities and promote innovative ideas, thereby achieving competitive advantage for the organisation. This dimension envisions threats and disruptions to bring about opportunities that can be leveraged to achieve a fundamentally superior performance than before the disruption (Serville and Vargo, 2011). It disregards the existence of any equilibrium towards which the organisations can adapt, and rather embraces resolving organisational dilemmas by drawing from a broad repertoire of possible actions and flexibility to create new capabilities (Lengnick-Hall et al., 2011).

It involves identifying emerging opportunities and capitalizing on them to develop new growth paths such as meeting the needs of a new market, which may yield some competitive advantage (Lengnick-Hall et al., 2011). Taking advantage of emerging opportunities and developing new capabilities can bring about significant benefits to the organisation in terms of firm performance (Akgun and Keskin, 2014; Hamel and Valikangas, 2003; Serville and Vargo, 2011). Organisations that aim for bounce forward resilience do not only take advantage of emerging opportunities for above-average return (Akgun and Keskin, 2014), but create new niches (Lumpkin and Dess, 2001).

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Accordingly, Hamel and Valikangas (2003) emphasize the need for the continuous reconstruction of an organisation's business model for a viable future. The business model changes in unique ways, resulting in new methods of operations, new markets and products to deal with disruptions (Hamel and Valikangas, 2003). Organisations that have high levels of bounce forward resilience are able to overcome disruptions and continue forward, often thriving as they reinvent themselves (Dahles and Susilowati, 2015; Hamel and Valikangas, 2003; Reinmoeller and Van Baardwijk, 2005), and develop new growth paths (Annarelli and Nonino, 2016; Lengnick-Hall et al., 2011; Seville and Vogus, 2011). Bounce forward resilience often goes beyond immediate effectiveness to reconfigure an organisation's model quickly to respond to uncertainty in a way that promotes future viability (Sutcliffe and Vogus, 2003). The performance benefits come along with reinventing the business model as Hamel and Valikangas (2003) note, and capitalizing on opportunities resulting from disruptions as Vogus and Seville (2011) point out.

Organisations with high levels of bounce forward resilience are able to embrace drastic change, identify opportunities in disruptive situations, and branch out into new growth paths (Dahles and Susilowati, 2015). Williams and Vorley (2014) referred to this as an entrepreneurially led response and an effective catalyst for subsequent firm performance in times of crisis. Dahles and Susilowati (2015) note that it is often in situations of chaos that entrepreneurial zest is triggered and opportunities are created that bring about superior firm performance and growth. Accordingly, when organisations are better able to take advantage of emerging opportunities and innovate or expand into new markets, they are likely to improve their market share and profits.

Bounce forward resilience takes into account alternative options for growth to capitalize on new trends in the marketplace. As organisations develop new capabilities that serve multiple growth avenues (Ismail, Poolton, and Sharifi, 2011) they are bound to perform better. Scholars have long established that the ability to identify and capitalize on new opportunities is a source of competitive advantage and firm performance (Powell, 1992; Greenley and Oktemgil, 1996).

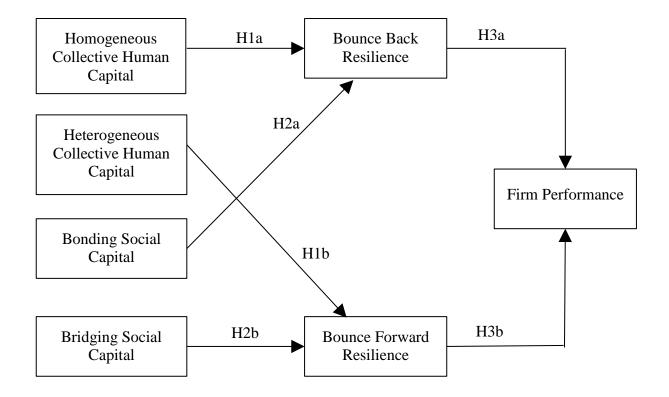
For bounce back resilience, there may be minor improvements and extensions from the current offerings of the organisation as it tries to align its activities with prevailing environmental circumstances, hence, this might enhance firm performance (Lengnick-Hall and Beck, 2005). Such organisations use their resources and capabilities to overcome disruptions in an optimal manner (Boisot and Child, 1999), thereby, impacting on performance outcomes. However, the benefits accruing from such provisions ensures the viability and efficiency of the organisation in the short-term (Gilbert, Eyring and Foster, 2012; Hamel and Valikangas, 2003). On the other hand, bounce forward resilience which involves fundamental changes in the existing business model in ways that capitalizes on new trends and opportunities is able to offer substantial new benefits to the organisations and hence, secure its long-term success (Hamel and Valikangas, 2003; Lengnick-Hall et al., 2011). In a nutshell, for bounce back resilience, the organisation exploits its existing competencies but for bounce forward resilience, the organisation develops new competencies.

When conceptualized in the way described above, this thesis argues that bounce back and bounce forward resilience are both conducive to firm performance. While at this point there is no adequate insight into the magnitude of the effect of each dimension on firm performance, there is a case to be made that bounce forward resilience which is geared towards developing new capabilities that serve multiple growth paths is more promising in terms of firm performance. Consequently, this thesis hypothesizes that:

*Hypothesis 3a (H3a):* Bounce back resilience is positively related to firm performance.

*Hypothesis* 3b (H3b): Bounce forward resilience is positively related to firm performance.

Based on the foregoing discussions, this thesis presents a model of the antecedents to bounce back and bounce forward resilience and their effects on firm performance, as shown in Figure 2.1 below.



**Figure 2.1. Proposed Theoretical Framework for Bounce back and Bounce Forward Resilience** 

## 2.11 Chapter Summary

On the basis of the evaluation of different definitions of organisational resilience in the extant literature, this chapter derived an integrated and a more comprehensive definition of organisational resilience. Consonant with the various definitions, it was obvious that there are two dimensions of organisational resilience: bounce back and bounce forward resilience. This has some implications on the operationalization and measurement of

organisational resilience. The chapter also provides a theoretical justification from which the organisational resilience (bounce back and bounce forward) model was developed. The model suggests that organisational-level human and social capital are important antecedents to bounce back and bounce forward resilience which in turn have some implications on firm performance. The proposed relationships between the constructs of interest were presented in the form of six research hypotheses and represented in a research model as shown in Figure 2.1.

# Chapter Three Research Methodology

## 3.1 Introduction

This chapter provides a detailed discussion of the processes and decisions involved in undertaking this research. It presents various aspects of the research methodology utilised and the rationale for their use. In particular, a mixed methods multi-step approach (three studies) was adopted to answer the research questions. First, the chapter discusses the research approach including the rationale for the mixed method design and philosophical position of this research. Second, the research design (sequential exploratory mixed method design) is discussed and justified. Third, the research methods used in the various studies are summarized, and ethical considerations addressed. Details of the research procedures for the various phases (i.e., the data collection and analysis processes of the three studies) are discussed within each of the next three chapters (Chapter 4, 5, and 6).

## 3.2 Research Approach

Creswell (2014, p.5) broadly described research approach as the 'plan or proposal to conduct research, which involves the intersection of philosophy, research designs, and specific methods. Saunders, et al. (2011) assert that the degree to which a researcher is clear about the theory at the start of the research raises key questions concerning the research approach and design to be adopted. There are two basic research approaches: deductive and inductive approach.

In the deductive approach, there is a well-established role for the existing theory such that it informs the development of hypotheses which will be tested by the collection and analysis of data. Here, the researcher formulates a theoretical framework and subsequently designs a research strategy to test it. This approach works well for a topic which has been widely researched and has a wealth of literature from which theoretical frameworks and hypotheses can be defined. However, the researcher will only be able to test whether, or to what extent, the hypothesised relationships exist. The inductive approach works in the opposite direction, such that it begins with the collection of data after which theories are developed based on the analysis of the data collected. Hence, a topic that is new with little existing literature gives itself more to the inductive approach such that data is collected and analysed to develop theories. While the two approaches vary, some research methodologists (Bryman and Bell 2015; Collis and Hussey 2013; M. Saunders, Lewis, and Thornhill 2015) propose an option of using a combination of the two within a single study.

Creswell (2009) used different categorization and identified three research approaches: quantitative, qualitative and mixed methods. He defined the quantitative research approach as one for testing objective theories by examining the relationship among variables. These variables can be measured using predetermined instruments that yield numerical data which can be analysed using statistical techniques. This approach synchronises with the deductive approach. On the other hand, the qualitative research approach is one in which the researcher explores and understands the meaning individuals or groups assign to a social problem (Creswell 2013). This resonates with the inductive approach. Qualitative methods often use an inductive approach and are discovery oriented, whereas quantitative studies commonly use deduction and focus on theory testing. A mixed method approach is one which involves collecting, analysing, and combining or integrating both qualitative and quantitative data at some point of the research process within a single project to better understand the research problem and questions (Creswell 2014; Creswell and Clark 2007; Burke Johnson, Onwuegbuzie, and Turner 2007; Tashakkori and Teddlie 1998; Teddlie and Tashakkori 2009). This entails selecting a suitable combination of both methods (quantitative and qualitative) to arrive at a research approach that is appropriate for the research in view. The key assumption of the mixed methods approach is that the mix of qualitative and quantitative approaches provide a more comprehensive understanding of the research problem than either approach on its own (Creswell, 2014).

Creswell (2014) propose three factors that affect the choice of a research approach that a researcher adopts; the research problem and questions, personal experience and the audience. However, the research problem and questions should guide the researcher on the appropriate research approach (Bryman and Bell, 2015). While the researcher's personal experience, training and preferences could obviously influence his/her choice of research approach, it is important that the researcher selects an approach that will address the aims and objectives of the research (Creswell, 2014). As a result, if the purpose of the research is to identify factors that impact the phenomenon or investigate possible outcomes, quantitative approaches are considered appropriate. Nevertheless, if the research is aimed at understanding the phenomenon and the process by which it occurs due to dearth of research on the specific phenomenon, then qualitative approaches are suitable.

The mixed method approach is suitable when either approach (quantitative or qualitative) by itself is insufficient to provide a robust understanding of the phenomenon and address the research problem. This approach could take different forms; it could start by exploring generally what variables to study and subsequently, study those variables with a larger sample of participants. Alternatively, it could start with survey of a large sample and then, follow up with few participants on specific variables about a phenomenon. Hence, through mixing both approaches, some complementary benefits that enable the researcher build stronger arguments are gained. However, Creswell and Clark (2017) emphasize that adopting a mixed methods research approach is quite challenging and should only be used when there is a specific reason to do so. This thesis adopts a mixed method approach and

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the next section details the rationale for using mixed methods approach, the philosophical position of this research and the specific research design.

## 3.2.1 Rationale of mixed methods approach

Greene, Caracelli and Graham (1989) identified five points for the use of mixed methods approach; triangulation, complementarity, development, initiation, and expansion. Triangulation refers to the intentional use of more than one method of collecting and analysing data about the same phenomenon with the aim of seeking convergence and corroboration and eliminating the inherent biases of using a single method (Greene et al., 1989). The various methods need to be implemented at the same time but independently achieve triangulation. Complementarity looks for elaboration, enhancement, to illustration and clarification of findings from one method with the findings of the other. In this sense, qualitative and quantitative approaches and findings are used to measure overlapping but different phenomena. Complementarity is easily achieved when both methods are used interactively and simultaneously. Development implies using the findings from one method to develop or inform the other. Therefore, the methods are implemented sequentially and the results from one method, for instance qualitative interviews, may be used to develop hypotheses to assess the same phenomenon. Initiation seeks for paradox, contradiction and novel perspectives and uncovers the reasons behind them. Expansion looks to extend the breath and range of inquiry by using different methods for different enquiry components.

Building on Greene et al.'s (1989) typology, Bryman (2006) developed a more elaborate list of reasons based on the practices of researchers. These reasons are summarized in Harrison and Reilly (2011, p.10) as shown in table 3.1. The bolded sections constitute some justifications for the choice of mixed method approach used for this thesis.

Rationale for mixed methods research approaches		
Rational	Explanation	Design Type
Triangulation	Quantitative and qualitative combined to triangulate findings to be mutually corroborated	Concurrent
Offset	Combining strands offsets their weaknesses to draw on the strengths of both.	Concurrent
Completeness	Bringing together a more comprehensive account of both if both quantitative and qualitative is employed.	Exploratory, explanatory, or concurrent.
Process	Quantitative provides an account of structures in social life but qualitative provides sense of process.	Exploratory or explanatory
Different research questions	Qualitative and quantitative each answer different research questions.	Concurrent
Explanation	One is used to help explain findings generated by the other.	explanatory
Unexpected results	When one strand generates surprising results that can be understood by employing the other.	Explanatory or embedded
Instrument development	Qualitative is employed to develop scale items	Exploratory
Sampling	One approach is used to facilitate the sampling of respondents or cases.	Explanatory or exploratory
Credibility	Employing both approaches enhances the integrity of findings.	Explanatory, exploratory, or concurrent.
Context	Qualitative providing contextual understanding coupled with either generalizable, externally valid findings or broad relationships among variables uncovered through a survey.	Explanatory or exploratory
Illustration	Qualitative to illustrate quantitative findings (putting 'meat on the bones' of 'dry' quantitative findings)	Explanatory
Utility	Among articles with an applied focus, the combining of the two approaches will be more useful to practitioners and others.	Explanatory, exploratory, Concurrent,

 Table 3.1

 Rationale for mixed methods research approaches

		or embedded
Confirm and discover	This entails using qualitative data to generate hypotheses and using quantitative research to test them within a single project.	Exploratory
Diversity of views	Combining researchers' and participants' perspectives through quantitative and qualitative research, respectively, and uncovering relationships between variables through quantitative research while also revealing meanings among research participants through qualitative research.	
Enhancement	Building upon quantitative and qualitative findings entails a reference to making more of or augmenting either quantitative or qualitative findings by gathering data using a qualitative or quantitative research approach	or

Source: Adapted from Harrison and Reilly (2011)

As Bryman (2006) notes, most mixed methods research provide multiple justifications for mixing methods and new justifications may emerge as the research progresses. This is labelled a 'moveable feast phenomenon' (Bryman, 2006, p.10). As represented by the bolded sections in Table 3.1, this research adopts multiple rationale for mixing methods; using qualitative approach to understand factors contributing to organizational resilience in the SME context, develop instrument for quantitative measures, and specify variables for subsequent quantitative phase, while using qualitative approach to confirm and enhance initial findings.

The use of mixed method approach allows for a more robust analysis and provides strengths that make up for the weaknesses of both quantitative and qualitative approach (Creswell et al. 2003; Tashakkori and Teddlie 1998; Greene, Caracelli, and Graham 1989). For instance, the quantitative approach is weak in understanding the context or setting in which people behave, an aspect that qualitative research makes up for (Merriam 2002; Creswell 2013). An important objective of this research has been to extend our understanding of organizational resilience. Even though a purely quantitative study

comprising a large number of organizations could be useful for identifying differences between organizations and relationships between variables, it might fail to capture vital aspects concerning different potential factors or elements for organizational resilience capability building and would probably not result in adequate empirical insights into the complex nature of the phenomenon.

Moreover, some qualitative researchers (e.g., Creswell and Clark 2007; Flick 2013; Silverman 2013; Symon and Cassell 2012) note that qualitative approach provides significant information which may not have been identified in previous studies, and elicit meaningful insights that are unanticipated by the researcher. Such important information might not be noticed with the use of a quantitative approach. However, the results of a purely qualitative study are limited by the extent to which they can be generalised to the wider population. Mixed method approach makes up for this limitation as the quantitative study will provide the larger sample size for greater generalizability. Bhamra et al. (2011) emphasize that in-depth empirical studies are highly needed in studies of organizational resilience as there are currently very few studies on how organizations can develop resilience. In this regard, a mixed methods design is believed to yield the depth and breadth needed for studies on organizational resilience.

Research methodologists (e.g., Bryman and Bell, 2011; Saunders et al., 2011) detail two important elements in each research approach that needs significant attention; philosophical assumptions and methods. However, Creswell (2014) discuss three components involved in a research approach; philosophical worldviews, designs and research methods. The research approach adopted for this study is the mixed method approach as discussed in the above section and represented in Figure 3.1.

The three components of the research approach employed are the pragmatic philosophical worldview, sequential exploratory mixed method design as well as qualitative interviews

and multiple quantitative surveys being the research methods. The next section presents a discussion on each of these and the rationale for choosing them.

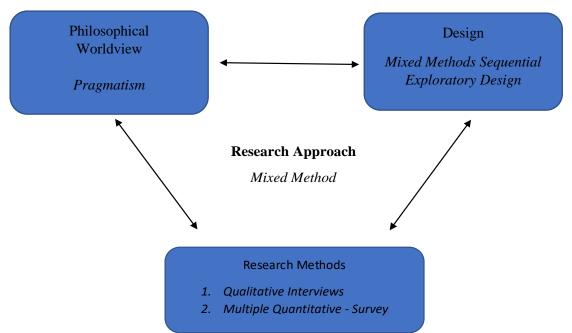


Figure 3.1 Research Approach adapted for this thesis based on Creswell's (2014) framework

## 3.3 Philosophical worldview

The philosophical worldview is also called research philosophy. This involves key assumptions about the way a researcher views the world, and those assumptions underlines the research strategy and the methods the researcher selects as part of the strategy (Bryman and Bell 2015; Thorpe, Jackson, and Easterby-Smith 2012; M. Saunders, Lewis, and Thornhill 2015; Easterby-Smith, Thorpe, and Jackson 2012).

Saunders and Lewis (2009, p. 108), posit that, 'The philosophical assumption i.e. the way in which you view the world will underpin the research strategy and methods you choose.' Easterby-Smith et al. (2012) point out that understanding the research philosophy helps the researcher to clarify the research method, recognise which research design is appropriate, and to be creative and innovative in the selection and use of methods. The two main ways of thinking about research philosophy are ontology and epistemology (Johnson and Duberley 2000).

Ontology concerns the nature of reality which raises questions about the assumptions researchers make with regards to the way the world operates and their commitment to particular views (Bryman and Bell, 2011; Collis and Hussey, 2009; Saunders, et al., 2011). Objectivism and subjectivism are the two extremes on the ontology spectrum. Whether the study is objective and external to the researcher, or socially constructed and only understood by examining the perceptions of the human actors considered (Collis and Hussey, 2009).

Epistemology deals with what constitutes acceptable knowledge or the source of knowledge in a field of study. Saunders et al. (2011) identified two extremes of the epistemology spectrum as that of positivism and interpretivism, emphasizing that positivism assumes that the social world exists externally and that its properties should be measured objectively rather than subjectively, and that research should be carried out, as much as possible, in a value-free way. On the other hand, interpretivism assumes that reality is determined by people rather than by objective and external factors. This epistemological stance advocates the need for the researcher to understand the differences between humans in their role as social actors and to highlight those differences when conducting research among people rather than objects (Collis and Hussey, 2009). Saunders et al. (2011) further identified a view that lies between the two extremes as pragmatism, in which the research question determines the epistemological stance.

Creswell (2014) represented the ontology and epistemology assumptions with four worldviews which are; postpositivism, constructivism, transformative, and pragmatism. *Postpositivism* worldview which is also called *empirical science* resonates more with

quantitative approaches than qualitative approaches. This form of worldview holds a deterministic philosophy whereby causes most likely determine effects or outcomes. It is also reductionist as it aims to reduce ideas into small, discrete sets of ideas to test, such as variables that comprise hypotheses and research questions. Knowledge generated through this lens is based on careful observation and measurement of the objective reality that exists "out there" in the world. Lastly, there are theories governing the world which needs to be tested or verified and refined in order to understand the world. Consequently, in doing science research, the accepted approach to research by postpositivists, the research starts with an existing theory, collects data that either supports or debunks the theory, and then makes required adjustments prior to performing further tests.

*Constructionism* which is often called social constructionism is strongly associated with qualitative research approaches. This worldview is characterized by the understanding and meaning of phenomena that formed through research participants and their subjective views. In this case, research is shaped 'from bottom up', starting from individual's point of view to broad patterns and then ultimately, to broad understanding (Creswell, 2014).

*Transformative* worldview is more associated with qualitative than quantitative approaches. This view is influenced by social and political issues such as inequality, suppression, domination, and alienation. Researchers holding this view focuses on the needs of groups of people or individuals that may be marginalized, providing a voice for them and advancing an agenda for change to improve their lives. Hence, it is geared towards reform and change (Creswell, 2014).

*Pragmatic* worldview is typically associated with mixed methods research. This worldview focuses on the research question(s) asked and the various approaches available to address the question(s) rather than on the method (Creswell, 2014). It is pluralistic as it involves the use of multiple approaches to obtain knowledge about the research problem

and questions. Teddlie and Tashakkori (2009) emphasize that pragmatism and mixed methods research are formally connected, arguing that;

- Both qualitative and quantitative research methods may be used in the same study.
- The research question should be the primary driving force
- The forced-choice dichotomy between postpositivism and constructivism should be dumped
- The use of metaphysical concepts such as 'truth' and 'reality' should also be dumped
- Methodological choices should be based on practical and applied research philosophy

Tashakkori and Teddlie (2003) further note the popularity of pragmatism, stating that minimum of thirteen different scholars embrace pragmatism as the worldview for mixed method research. Pragmatists advocate that truth is 'what works' best for understanding and addressing a research problem (Creswell, 2014; Tashakkori and Teddlie, 1998). Pragmatists view reality as a double-edged sword whereby on one hand, they agree with positivists and post positivists that there is an external reality, and on the other hand, just like the constructionists, they deny that there is an absolute truth (Tashakkori and Teddlie, 1998). Therefore, adopting a pragmatist view means the research question(s) becomes the primary driving force that guides the researcher to explore reality with the help of multiple methods and different assumptions as well as forms of data collection and analysis.

In the context of this research, pragmatism is considered appropriate as this research is not only trying to explore and understand factors contributing to a relatively new phenomenon - organizational resilience, but also trying to examine the extent to which these factors influence organizational resilience and the relationship between organizational resilience and firm performance. Although Tashakkori and Teddlie (2003) note that pragmatism resonates with mixed methods design, it is important to clarify and justify the type of mixed method design adopted. The next section details the mixed method design utilised for this research and provides the rationale for the choice.

## 3.4 Research design

Research designs which are also called strategies of inquiry (Denzin and Lincoln 2011) are types of inquiry within the different research approaches (qualitative, quantitative, and mixed methods approach) that provide specific directions for procedures (Creswell, 2014). As each research approach constitute assorted designs, it is important to identify and justify the type of research design adopted within the choice of research approach.

This thesis adopts a mixed methods approach and therefore needs to discuss the selected research design within the chosen approach. While, there are several mixed method research designs described in the literature, Creswell (2013) identified six basic designs, which include three concurrent (triangulation, nested and transformative designs) and three sequential designs (exploratory, explanatory, and transformative designs). These six mixed method designs vary in terms of three planning elements - timing of method, weight of method and data mixing methods.

*Concurrent triangulation design* involves the simultaneous collection of both qualitative and quantitative data, separate analysis of the two data strands, and subsequent comparison of the data strands to determine whether or not there is convergence, differences, or some mixture (Creswell 2008). This type of design is often aimed at combining the strengths of both qualitative and quantitative approaches to compare results or validate, confirm, disconfirm, or corroborate qualitative findings with quantitative results. In this case, both strands of data are collected simultaneously, and equal weight is assigned to them. Hence this design lends itself to rigorous data collection and analysis (Creswell and Creswell 2017; R. L. Harrison and Reilly 2011). Additionally, it requires shorter time period for data collection in relation to the sequential approaches as both the qualitative and quantitative data are collected at same time. However, it requires heroic effort and skill to sufficiently study a phenomenon with two separate strands of data. Comparing results between the two methods can also pose a challenge (Creswell 2013).

*Concurrent embedded design* relates to the simultaneous collection of both qualitative and quantitative data but in this case, there is a primary method that guides the research and a secondary database that plays a supporting role. The latter is given less priority as it is embedded in the former. The secondary method may address a different question from the primary method but both of them can be qualitative or quantitative. An example is an experimental model where qualitative data are used to explore the mechanisms in the model (Tashakkori and Teddlie, 1998). This perspective can provide access to various views from the different types of data (Harrison and Reilly, 2011). However, this design can generate unequal evidence that may pose problems for the researcher at the point of interpreting the findings. This is especially because the two methods are unequal in their priority (Creswell, 2008).

*Concurrent transformative design* is guided by the adoption of a specific theoretical views and the simultaneous collection of both qualitative and quantitative data (Creswell, 2008). This view can be based on ideologies (e.g., transformative worldview) or a conceptual framework. This type of design may have one approach embedded in another such that the voices of different individuals or groups of people are represented in the change or reform process of an organization. It may also involve the triangulation of qualitative and quantitative data to generate better evidence for an inequality of policies in an organization. Both data can be mixed by merging, connecting or embedding. This design shares the same strengths and weaknesses with the triangulation and embedded designs.

Sequential exploratory design involves a first stage of qualitative data collection and analysis, followed by subsequent phase(s) of quantitative data collection and analysis that builds on the results of the qualitative phase. This design is useful for developing new instruments based on initial qualitative analysis; exploring and specifying variables that need to be included in a follow up quantitative phase(s); generalizing qualitative findings; and refining or testing an emergent theory (Creswell et al., 2003; Harrison and Reilly, 2011). The literature shows two common forms of this design; taxonomy design and instrument design. The former involves the use of the views of participants in the qualitative phase to develop a taxonomy (or classification system), or to develop an emergent theory, which is then tested or further developed with a secondary quantitative phase. The latter uses the qualitative results to develop scale items for a quantitative survey instrument. The qualitative and quantitative databases are usually integrated during the interpretation stage and in the discussion section (Creswell et al., 2003). Advantages of this research design include ease of implementation as data collection and analysis are done in phases. It is also straightforward to describe and report. It is particularly useful for research that aims to explore a phenomenon and also expand on the qualitative findings. However, it requires a considerable amount of time to complete data collection and analysis for the various phases. Moreover, key decisions need to be made about what findings in the first phase will be the focus of the second phase (e.g., one theme, multiple themes etc).

*Sequential explanatory design* is the reverse sequence from exploratory sequential design. In this case, the researcher first collects and analyse quantitative data, and then builds on the results in a qualitative phase with the aim of explaining the initial quantitative results. The quantitative phase can be used to either select cases for the secondary qualitative phase or identify questions that need further explanations. Hence, it is called explanatory design. Like the sequential exploratory design, there are two common forms of the explanatory designs; participant selection and follow up explanation models (Creswell et al., 2003). This design has the same advantages as the sequential exploratory design. It is straightforward and easy to implement because the phases fall into different periods. It is easy to describe and report. However, the disadvantages of this design are lengthy time and feasibility of resources required for the collection and analysis of both data types.

Sequential transformative design involves two phases with a theoretical lens covering the sequential procedures. It has an initial phase which could be qualitative or quantitative followed by a secondary phase that builds on the initial phase. The secondary phase could also be either qualitative or quantitative. The theoretical lens is briefly discussed in the introduction to a proposal, shapes a directional research question aimed at exploring a problem (e.g., inequality), creates sensitivity to collecting data from marginalized groups and ends with a call for action. Unlike the other two sequential designs, the sequential transformative design has a theoretical perspective to guide the study and the purpose of this design is to best serve the theoretical perspective of the researcher. The sequential transformative design shares the strengths and weaknesses of the other sequential designs.

3.4.1 The rationale for the research design adopted for this thesis

This thesis adopts a *sequential exploratory mixed method design* which implies that the collection and analysis of data was done in consecutive phases with the qualitative data collection and analysis preceding the quantitative data phases (Plano Clark and Creswell 2008; Creswell 2013; Tashakkori and Teddlie 1998; 2009). While some of the characteristics of this design has already been discussed in proceeding sections, the

rationale for its use and how it helps address the research questions of this thesis is discussed next.

The aim of this research is to examine the dynamics of organizational resilience capability building. The limited literature and empirical studies on organizational resilience (Vogus and Sutcliffe, 2007; Bharma et al., 2011; Lenuencke et al., 2015) together with complexities inherent in studying the concept, and the context specific processes typical of SMEs (Sullivan-Taylor and Branicki, 2011) obviously indicate the suitability of a design which considers the research problem in its entirety by first getting close to participants, penetrating their realities, interpreting their perceptions and providing a more complete and comprehensive understanding of the research problem (Creswell, 2008).

As organizational resilience is still a relatively underexplored concept, neither qualitative nor quantitative method is enough, on its own, to capture the developments and various aspects of the concept. Therefore, the researcher first used the qualitative approach to explore and understand the factors that contribute to organizational resilience. This qualitative study provided valuable insights into variables that were subsequently studied with a large sample. This is in line with Bryman and Bell (2011) argument that qualitative methods provide a deeper and comprehensive understanding of the concept as well as the research problem. In addition, the qualitative phase was particularly useful in identifying preliminary scale items as the researcher needed to develop a new scale for the organizational resilience construct since existing instruments are inadequate for the present research. Accordingly, Creswell (2014) posits that the qualitative phase may be used to specify variables that the researcher needs to include in a subsequent quantitative study as well as develop items for scale development. Building on the findings of the qualitative study, two consecutive quantitative studies were undertaken to fully address the research problem and questions.

In particular, this research adopted a three-phase approach (three studies), the researcher first collected qualitative data and analysed it (Study 1), and generated some scale items (from interview quotes and existing literature) for a quantitative survey instrument which was administered to a sample of population and analysed (Study 2), and then, building on the findings of these two consecutive studies and the literature, a second quantitative study (Study 3) was designed to test a set of hypotheses and confirm the findings of the previous quantitative study (Study 2). The second quantitative study (Study 3) was administered to a larger and different population sample. As some scholars note (e.g., Morgan 1998; R. L. Harrison and Reilly 2011), a quantitative study can be used to test a theory emerging from a previous qualitative study as well as enhance the generalizability of the qualitative findings on a larger sample. Thus, this research is primarily concerned with exploring the concept of organizational resilience, expanding on the qualitative findings of the concept in combination with existing literature and developing a measurement tool for the organizational resilience construct.

However, this sequential exploratory mixed methods design is not without challenges and some research methodologist (e.g., Morgan, 1998; Creswell, 2003; Creswell et al; 2003) have identified a few challenges associated with its use. These include issues relating to; priority and integration of the approaches used (Creswell and Creswell 2017; Morgan 1998; Ivankova, Creswell, and Stick 2006). Priority refers to the approach (qualitative or quantitative or both) a researcher gives more weight throughout the process of data collection and analysis in the study (Creswell, 2003). Decisions concerning the priority given to either approach in a mixed method design (qualitative or quantitative) depends on many factors such as the choice of mixed method design, the amount of data gathered

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in each phase, the scope of data analysis in each phase, the interest of the researcher, the research problem and the audience of the study (Creswell, 2008; Ivankova, et al., 2006; Morgan, 1998).

In this study, more attention was given to the quantitative data collections and analyses (Study 2 and 3). While the qualitative study (Study 1) partly influenced the twosubsequent consecutive quantitative studies, the data and the analyses of the quantitative studies (Study 2 and 3) are broader in scope and represent a major part of the data collection process. Also, Study 1 focused basically on the factors contributing to organizational resilience in SMEs. While this was important, it was not enough to develop and validate the organizational resilience scale and test the emergent theory which constitute a major part of the research objectives.

Integration of the qualitative and quantitative data can occur at various stages in studies adopting mixed methods design (Creswell, 2009; Creswell and Clark, 2007; Ivankova, et al., 2006; Teddlie and Tashakkori, 2003). In mixed methods sequential designs, the distinct phases of the study are connected midway through the studies when the findings of an initial phase or study (either qualitative or quantitative) inform the data collection of the subsequent phase(s) or study(ies) (Hanson et al. 2005; Ivankova, Creswell, and Stick 2006). In the sequential exploratory design, the researcher typically connects the phases while designing the subsequent phase based on the results of the preceding phase.

In this thesis, both the qualitative and quantitative phases where connected midway through the research while while generating a pool of scale items for the quantitative survey instrument (Study 2) from interview quotes of the qualitative study (Study 1). The second connecting point included using variables specified in the qualitative study (Study 1) and the outcome of the scale instrument (Study 2) in combination with the existing literature to develop hypotheses for the subsequent quantitative study (Study 3) as well

as further validate the scale developed in Study 2. Finally, results from the three studies (qualitative and quantitative) were presented during the discussion of the results of the entire research.

#### 3.5 Research Context and Rationale

The main empirical focus of this research is the SME sector in Nigeria. Definitions of SMEs vary across countries and sometimes different definitions are provided across different periods within a country (Storey, 2004; Torres and Julien, 2005). However, a dominant trend in the literature is the use of some quantitative factors that can be easily defined and measured. These include the number of full-time employees working in the organization, the annual turnover the organization generates and the value of the assets it owns. In line with previous literature (Sanusi 2003; Udechukwu 2003; Adeyemi 2013), this study defines an SME as an enterprise with a maximum asset base of N200 million (same as \$1.43million), excluding land and working capital, and with the number of full time employees not less than 10 and not more than 250. The Small and Medium Enterprises Development Agency of Nigeria (SMEDAN) as well as the Small and Medium Industries Enterprises Investment Scheme (SMIEIS) agrees with this definition. Many nations and in particular developing countries, have recognised the immense contributions of SMEs to economic growth and development given their capacity to create jobs at a relatively low capital cost, develop both skilled and semi-skilled workers for future industrial growth, and their potential for developing entrepreneurial and managerial skills to aid economic development. Indeed, some countries (such as Japan) have achieved fast economic growth and rapid industrialization through the SME sector (Adekunle and Tella, 2008; Adeyemi, 2013; Gunasekaran, Rai, and Griffin, 2011; Storey, 2011).

Contemporary research has emphasised that the success of organisations in the current turbulent business environment is linked to the concept of organisational resilience (Demmer et al., 2010; Hamel and Valikangas, 2003; Linnenluecke, 2015; Reinmoeller and van baardwijk, 2005; Williams et al., 2017). The majority of research examining organisational resilience have focused on large organisations (e.g., IBM, Microsoft, Whirlpool, and Dutch global '500' companies) in developed countries in the West (e.g., Hamel and Valikangas, 2003, 2010; Reinmoeller and Van Baardwijk, 2005). Bhamra et al.'s (2011) review of research in organizational resilience found very little research has been undertaken on this topic in the SME context. A more recent review by Kamalahmadi and Parast (2016) also found that only 7% of organizational resilience studies focus on SMEs. Annarelli and Nonino's (2016) reiterated the dearth of studies on organisational resilience in the SME context and concluded their review with an emphasis on the need for more research on SMEs.

Accordingly, scholarly interest on organisational resilience in the SME context is currently increasing (e.g., Branicki, Sullivan-Taylor, and Livschitz, 2018; Demmer et al., 2011; Herbane, 2018; Sullivan-Taylor and Branick, 2011; Pal et al., 2014). However, this stream of research has been primarily conducted in the context of the Western world (e.g., United Kingdom - UK, United States of America - USA, etc) and there is dearth of studies on organisational resilience and SMEs in the context of developing countries (Cooper et al., 2014; Kamalahmadi and Parast, 2016). Specifically, research on this subject is disappointingly scarce in Africa in general, and particularly in the Nigerian context.

However, organisations do not operate in a vacuum, but are rather embedded within particular national context with different institutional, regulatory, and cultural characteristics. These characteristics constitute macro contextual features that may influence, for example, the behaviours of organisations in terms of developing organisational resilience in any country (Cooper et al., 2014). Various scholars have discussed the importance of context in organisational research stating that it has the capacity to capture new or unanticipated factors (Johns, 2006; 2018), as well as provide opportunities and constraints that influence the occurrence of organisational behaviour or construct and shape its meaning (e.g., Cappelli and Sherer, 1991; Johns, 2001; 2006). Research on resilience increasingly regards organisations as embedded in institutional contexts which determine their resilience and vulnerability to adverse effects (e.g., Cooper et al., 2014; Xavier et al., 2014). In other words, the factors that drive organisational resilience will depend on the context in which they are embedded (Cooper et al., 2014; Gucciardi et al., 2018; Masten et al., 2014). As such, to generalize findings from the context of developed countries to that of developing countries is dangerous.

Dissimilarities in the processes and settings between countries can demarcate theoretical boundary conditions, which can in turn explain inconsistent research findings (Johns, 2001). Writing on the importance of context, Johns (2006) further provided examples of remarkable context effects characterised by dramatic variations and even change in the strength and direction of relationships between established variables, as well as change the meanings and interpretations of constructs (sign reversal, reversal of causality, tipping effects, etc.). Developed and developing countries differ in meaningful ways, especially in terms of institutional settings, processes, and challenges in the business environment (Arinaitwe, 2006; Okpara, 2012). The challenges facing SMEs in African countries, and Nigeria in particular, are significantly different from those facing SMEs in developed countries. Specifically, SMEs in Nigeria face some unique challenges that limit their growth and survival. These include, limited access to and high cost of finance, poor infrastructural facilities, government regulatory policies, and the political climate in Nigeria pose enormous challenges to the operations of SMEs in Nigeria. As a result, SME survival rate in Nigeria and other developing countries is lower than that of the developed countries (Arinaitwe, 2006).

Researchers have argued that lack of access to as well as capital or financial resources remains a key challenge for SMEs in Nigeria (Ihua and Siyanbola, 2012; Mambula, 2002; Okpara, 2012; Okpara and Wynn, 2007). Mambula (2002) found that 75% of SMEs he studied in Nigeria considered lack of financial support as a key obstacle to their growth and performance. Similarly, the study conducted by Ihua (2009) shows that ranked the high cost of finance and means of insurance of credit repayment (collateral requirements) as the most severe barriers for their growth. The deregulation of the Nigerian financial system since 1986 led to high interest rates, persisting liquidity crisis and credit rationing leaving the SME sector under serious financial pressure and major financing gap. Most SMEs are unable to satisfy the requirements for commercial loans (e.g., collateral security) and/or are restrained by the expensive repayment terms and conditions such as high interest rates, short periods of loan repayment (Abereijo and Fayomi, 2005; Mambula, 2002; Okpara and Wynn, 2007; Okpara, 2011; Uremadu et al., 2010; Adekoya, 2016). As a result, SMEs depend more heavily on short-term funding which makes them more vulnerable to volatile economic situations. Access to finance could enable SMEs undertake productive investments to expand their businesses and enhance their competitiveness. SMEs operating in developed countries have better access to finance as there are various initiatives that provides financial products that are better tailored to the needs of SMEs and at more favourable terms as well as policies that help ameliorate access to finance. For example, Small Business Administration's capital access programme (the 7(a) Loan Program) provides guarantees for loans up to \$5 million US dollars for new and existing SMEs in the United States with specified maximum interest rate (up to 2.75% above the prime) which reduces with the amount of the loan and its maturity (Cusmano, OECD 2017).

Another critical challenge facing SMEs in Nigeria poor infrastructures. The Commonwealth Business Council has complained repeatedly about the poor maintenance and general degradation of infrastructure in Nigeria. Road construction, provision of electricity, drilling and installing boreholes for water supply, and installation and maintenance of telecommunication infrastructure is not the role of businesses and particularly SMEs in developed countries. However, SMEs in Nigeria have to perform all these extraneous roles to survive and grow. With particular reference to power supply, due to epileptic supply by sole authorized corporation (Nigerian Electric Power Authority now called Power Holding Company of Nigeria), organisations often generate their own power through the purchase and use of fuel/diesel generators and simultaneously grapple with the high cost of fuel/diesel as well as the servicing and maintenance cost of generators (Adekoya, 2016; Agboli and Ukaegbu, 2006; Ihua and Siyanbola, 2012). More so, the poor access roads also constitute a great challenge for SMEs in terms of conveying raw materials and finished products (Adekoya, 2016; Ihua and Siyanbola, 2012). Availability of infrastructure certainly contributes positively to the performance and growth of SMEs since infrastructure represents an intermediate input to production. The deplorable conditions of infrastructure in Nigeria makes it difficult for SMEs to compete as it adds to the transaction cost of doing business and adversely affects their profitability and performance (Adenikinju, 2005; Ojuye and Egberi, 2018; Obokoh, 2008). A study conducted by Agboli and Ukaegbu (2006) on organisations in Nigeria found that over 50% of failed businesses in their study attributed their misfortunes on the poor state of infrastructural facilities.

Government regulations and policies are part of the unique challenges facing SMEs in Nigeria. The World Bank (2005), based on its findings in a study of Doing Business across the globe states that businesses in developing countries face much larger regulatory burdens than those in developed countries. The tax system in Nigeria is considered to be excessively burdensome to SMEs both in terms of the level of taxation and the complexity. Organisations pay a numerous taxes and levies such as; business permits, capital gains tax, excise duty, company income tax, property tax, company name board tax as well as levy on corporate logos displayed on vehicles owned by organisations, etc. (Thompson et al., 2017). While Nigeria's Company Income Tax Act (CITA) approved 39 taxes and levies, over 50 taxes and levies are imposed on firms by state and local government agents (Ihugba, Odii, and Njoku, 2014). These multiple taxes levied by the three tiers of government have led to a proliferation of taxes, some of which seem to run contrary to the best interest of the SMEs. The procedures to comply with tax authority requirements are very complicated. Hence, SMEs to engage the services of advisors, thereby adding to their transaction cost (Ihua and Siyanbola, 2012).

In addition, SMEs in Nigeria face problems of corruption. Dike (2005) emphasise that although corruption is not peculiar to Nigeria as it is a global phenomenon, but the case of corruption in Nigeria is "pandemic" (p.1). Similarly, Transparence International (2005) identified Nigeria as one of the most corrupt countries of the world. Kiggundu (2002) emphasize that the key challenges facing organisations operating in Africa include bribery and other illegal business conducts. Similarly, Okpara (2011) argues that corruption and related unethical activities have hindered the growth and survival of SMEs in countries in sub-Saharan Africa, and particularly in Nigeria. For example, the Federal Government of Nigeria over the years have launched various development programmes and subsidized credits for SMEs including, the establishment of industrial estates, the Small Scale Industrial Credit Scheme (SSICSs), Small and Medium Industry Equity Investment Scheme (SMIEIS), Nigerian Bank for Commerce and Industry (NBCI), Nigerian Industrial Development Bank (NIDB), National Economic Reconstruction Fund (NERFUND), the World Bank Loan Scheme (SME 1 and 2 Loan Scheme) and the Bank of Industry (BOI) etc administered through the states to monitor and encourage SME development and growth by providing long-term loans and technical assistance. However, these institutions have often failed to reach the intended recipients as very few

SMEs receive financial assistance when they need it as it is often diverted by corrupt government officials to other programs that serve their personal interests (Ignatiadis et al., 2007; Obokoh, 2008; Okpara, 2011). This has hindered the survival and performance of SMEs. Hence, it could be inferred that corruption impacts on SME development and performance in Nigeria.

Moreover, some initiatives designed to support SMEs in Nigeria (e.g., NERFUND, NIDB, NBCI, and BOI) have failed in terms of achieving their objectives due to discontinuation resulting from change in government or lack of adequate resources (Abimbola and Agboola, 2011; Sanusi, 2003). In most cases, new administration abandons the policies of the preceding government to enact and pursue its own policies and agenda.

Overall, doing business in the Nigerian context is quite a challenging and difficult undertaking. The unique challenges in the business environment are putting SMEs under performance pressure and require them to be resilient to meet performance expectations. However, it would seem inappropriate to assume that the same set of factors would drive organisational resilience in developed and developing countries because of differences in situational and environmental features (Johns, 2001; 2006). Research in entrepreneurship and SMEs in developing countries has shown that the harshness and hostility of the institutional and business environment involve behaviours that are unique and vary significantly from those of their Western counterparts (e.g., Ihua, 2009; Manolova and Yan, 2002). Research that takes into account particular settings such as Nigeria (a developing country) may therefore engender revealing insights for theory-building endeavours in the organisational resilience domain. Accordingly, this thesis uses this specific developing country context - Nigeria - to explore the concept of organisational resilience in SMEs.

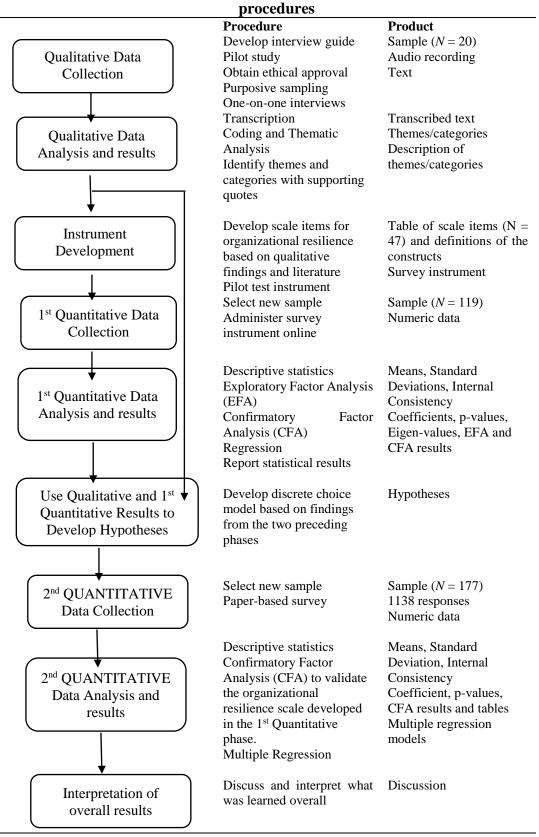
#### 3.6 Research methods

The selection of method for data collection depends on the nature of the research questions as well as the research approach and design adopted by the study (Creswell et al., 2003). Research conducted with the mixed method approach is characterised by the collection of both qualitative and quantitative data. As this thesis adopts the sequential exploratory design of the mixed method approach, it is committed to conduct different but consecutive studies: qualitative followed by two subsequent quantitative studies – also in sequence. Hence, data collection and analysis were done in three phases.

Creswell and Clark (2007, p.40) recommend the use of visual diagrams to communicate the 'complexity inherent in mixed methods designs'. This thesis has adapted Clark and Creswell's (2008) Virtual Model for Mixed Methods Sequential Exploratory Design Procedure to show the steps, procedures (methods) and products involved (See Figure 3.2). Ivankova et al.'s (2006) recommendations for drawing visual diagrams were followed. These include; limiting the diagram to one page, drawing boxes for the collection, analysis and interpretation of findings, using upper or lower-case letters to designate priority of qualitative and quantitative data collection and analysis, and using succinct language. The components shown in the visual model (Figure 3.2) are useful in understanding the mixed methods design for this research. Figure 3.2 indicates that over the period of four years one qualitative study (Phase 1) and two quantitative surveys (Phase 2 and 3) were conducted.

The first phase (Study 1) involved the development of interview guide, obtaining ethical approval from the University of York, a pilot study to refine the interview guide, selection and recruitment of participants for the qualitative study. Face to face interviews were conducted with SME owner-managers in Lagos, Nigeria and qualitative data analysed. The next step involved the generation of a pool of scale items from the qualitative data as

## Figure 3.2 Visual model for the adopted mixed methods design: sequential exploratory design



well as the literature, and pilot testing the new instrument. The 1st quantitative study (Study 2) was then designed and administered online to SME owner-managers in the UK, and quantitative data analysed. Subsequently, the results of Study 1 and 2 were used in combination with extant literature to develop a research model and set of hypotheses for the main QUANTITATIVE study (Study 3). Using paper-based survey, multisource data was collected from SMEs in Lagos, Nigeria and analysed. Finally, the results of the entire research which comprises of the three phases summarized above were discussed. The next section provides more details on the various phases.

#### 3.6.1 Designing the Qualitative Study (Study 1)

The primary objective of Study 1 was to establish the construct of organizational resilience in the SME context by gaining an in-depth understanding of the key organizational factors that influence the resilience of SMEs and the implications that these factors suggest for resilience capability building. This involved collecting data to generate an understanding which is grounded in the views of participants (Bryman and Bell, 2015; Merriam and Tisdell, 2015; Ritchie et al., 2013; Saunders, Lewis and Thornhill, 2015; Silverman, 2013; Symon and Cassell, 2012).

While there are several methods for collecting qualitative data - structured, semi structured, and unstructured (Merriam, 2015), the method for collecting data in this type of exploratory study have to be open and attentive to the views of the participants (Ritchie, et al., 2013; Silverman, 2013). This study used face to face interviews with open-ended semi-structured questions. Questions were tailored to address the main elements of the research questions. One advantage of the semi-structured interview with open ended questions is that it permits the participants to take the lead in the discussion, thus providing the researcher with a richer source of information than would be available using structured or short answer questions (Flick, 2014). For example, participants were asked to discuss how their organizations managed critical challenges within the business

environment and the resources and capabilities that enabled the organization to overcome such challenges. Such questions elicited meaningful responses and insights that are relevant to the understanding of the research problem. Similarly, the use of semi-structured interviews allowed the researcher the flexibility of exploring issues raised by participants through the use of probing questions. This added to the richness of the data and enhanced an in-depth understanding of the concept under study. Moreover, the researcher was able to maintain a consistent line of inquiry while collecting data from different participants (Flick, 2014; Merriam, 2014).

#### 3.6.1.1 Development of Interview Guide

An interview guide was prepared to guide the administration and implementation of the interviews. The interview guide had four main sections with questions to be explored in each interview. While the questions are geared towards providing answers to the research questions, the researcher encouraged the participants to expatiate on interesting points made, asked probing questions when necessary as well as clarified inconsistencies noticed in the answers given by the participants (Flick, 2014; Saunders et al., 2011; Symon and Cassell, 2012). This process facilitated a richer discussion between the researcher and the participants. As Symon and Cassell (2012) suggest, the interview guide was designed in such a way that the session started with more general questions and then more specific questions were asked. Questions were geared towards capturing all possible answers to address the research questions and thereby obtain in-depth information on organizational resilience from the perspectives of SME owner-managers (Silverman, 2013).

#### 3.6.1.2 Pilot Study

The interview questions were pilot tested in advance to ensure that the language is clear and to identify and rectify any issues regarding the flow of the questions. The pilot was proposed to be conducted with the participants of the targeted sample (that is, SME owner-managers in Lagos, Nigeria) but, the researcher was in the UK at the time and visiting Nigeria for pilot would have been hard and costly. As a result, the pilot study was done by discussing the guide with supervisors and fellow PhD students in the University of York Management School, UK. This was done to ensure that the questions were understandable and covered the important aspects. Some changes were made to the wordings of the interview guides.

The main interview commenced with the participants being asked the primary question 'What critical challenge or incident has your organization faced and how was it managed?' Participants were directed with prompt questions when the interview needed to be redirected to the concept of resilience, such as 'can you tell me how the organization dealt with the situation?' or 'can you tell be what resources and capabilities helped the organization to deal with the situation?' This enabled the researcher to extract themes, patterns and key phrases from the participants' responses that in turn helped to specify variables that need to go into a follow-up quantitative study.

#### 3.6.2 Designing the Quantitative Studies (Study 2 and 3)

Two consecutive quantitative studies (Study 2 and 3) were designed and undertaken. Data collection for the 1st quantitative study (Study 2) was done through an online survey of SME owner-managers in the UK. First, the researcher contacted SME owner-managers through email to take the survey and an anonymous link was generated and sent to the initial contacts to invite other SME owner-managers who may be of help with the survey. This is called the snowballing technique. The snowballing technique was used as the researcher had a limited list of SME owner-managers contacts.

Data collection for the 2nd quantitative study (Study 3) was done through a paper-based questionnaire survey of randomly sampled SMEs in Lagos, Nigeria. The questionnaire was prepared based on a review of the literature. Prior to the administration of the survey, the questionnaire was validated through discussions with supervisors and other subject

experts. These discussions allowed the clarification of the survey items and the improvement of any potential shortfall. Some slight adjustments were made based on specific suggestions.

The population of the study consists of the list of 2670 SMEs operating in Lagos State, Nigeria as collated by the Lagos State Ministry of Commerce and Industry (Lawal, 2011). Sample selection for this phase was mainly guided by firm size and hence, participating firms employed 10 to 250 employees which was the optimal size for the purpose of this study as it examines organizational resilience capability building in SMEs.

Roscoe (1975) provided the following guidelines for establishing sample size when conducting research.

- Sample size between 30 and 500 is appropriate for most research.
- If samples are to be divided into sub-samples (e.g., by gender), a sample size of at least 30 is required
- With regards to multivariate research, the sample size should be several times (preferably ten times or more) greater than the number of variables in the study.
- When a simple research experiment is undertaken with tight control, a sample as few as 10 or 20 could produce effective results.

A sampling frame consisting of 350 SMEs was targeted for study 3. This was based on the work of Sekaran (2003) for determining a sample size for a given population. The questionnaire was next administered to a sample of 350 SMEs operating in Lagos State, Nigeria.

## 3.7 Ethical Considerations

It is important that researchers address ethical issues when undertaking their research, especially when the research involves the participation of human beings. Saunders et al. (2015) outlined some ethical issues that affect research:

- Privacy of possible and actual participants
- Voluntary nature of participants and the right to withdraw partially or completely from the process.
- Consent and possible deception of participants
- Maintenance of the confidentiality of data provided by individuals or identifiable participants and their anonymity.
- Reactions of participants to the way in which you seek to collect data.
- Effects on participants of the way in which you use, analyse and report your data.
- Behaviour and objectivity of the researcher

To ensure that research complies with these principles, the University of York has a Humanities and Social Science Ethics Committee (HSSEC) to review students' applications for fieldwork and provide guidance on acceptable ways of conducting research. This includes; (1) obtaining informed consent by briefing participants about the research and giving them the opportunity to agree or disagree to participate in an interview; (2) clarifying and respecting the participant's absolute right to withdraw from an interview at any time and any stage; (3) ensuring the confidentiality of the data and any tape recordings. The informed consent form used are presented in Appendix A.

The current research adopts mixed methods approach (both qualitative and quantitative approaches) and thus, involves some ethical concerns regarding informed consent and issues of confidentiality and anonymity of the research participants. For all three phases of data collection, all potential participants were provided with full information about the

research. This provided them with details of the nature and purpose of the research, their rights in the research process, details of what would happen to the contribution and who to contact should they have any queries. In the case of the qualitative study (Study 1), consent forms were sent to participants prior to interviews. This was to enable potential participants to decide whether or not to take part in the interview. The consent form emphasized the voluntary nature of participation in the interview, stating that participants can choose to stop the interview at any time without giving the researcher reasons. For the second and third phase of data collection (Study 2 and 3), the front page of the survey was used to solicit participants consent (see Appendix B and C). For the third phase of data collection (Study 3), CEOs of each participating SMEs further contacted 9 employees (three on each hierarchical level - top management team, middle level managers, entry level employees) to request their voluntary participation in the survey. All participants were assured of anonymity and confidentiality.

The interview data and questionnaire surveys were recorded as anonymous. In Study 1, interviews were recorded based on permission of the participants. All data, including interview tapes, field notes, transcripts and questionnaire surveys are stored securely in a lockable drawer assigned by the department for the purpose of the research. Electronic files are stored in the researcher's Personal File Store in the University of York secure server.

# 3.8 Chapter Summary

This chapter has discussed the research methodology and explained the choice of mixed methods approach adopted in this thesis. The chapter discussed the research design and provided rationale for adopting a sequential exploratory mixed method design with qualitative data collection and analysis as first phase, followed by two consecutive quantitative data collection and analysis phases. A summary of the processes involved in each phase are provided and ethical procedures used to obtain informed consent as well as ensure that all participants know and understand their right during the interview process are also discussed. The next chapter discusses in greater detail the process of data collection and analysis for the qualitative study (Study 1) and the findings obtained.

# **Chapter Four Study 1: Qualitative Research Findings**

# 4.1 Introduction

As explained in chapter three, this thesis adopts exploratory sequential mixed method approach which begins with a qualitative phase that is exploratory in nature and proceeds to two consecutive quantitative phases that each partly builds on the former. This chapter focuses on the exploratory qualitative phase (Study 1) with the aim of building and enriching theory around the factors that contribute to resilience in SMEs in a developing country context. Some of the findings were used in combination with existing literature to generate hypotheses to drive and inform the subsequent large-scale quantitative research. Unlike other treatments exploring organizational resilience (e.g., Gunasekaran et al., 2011; Lengnick-Hall et al., 2011; Pal et al., 2014; Reinmoeller and Van Baardwijk, 2005), this exploratory qualitative study is a move towards developing a view of organizational resilience that is grounded in the real world; an approach that is rarely implemented in organizational resilience research (Bhamra et al., 2011), but has the advantage of providing a foundation upon which future research can build. In particular, an inductive model of the factors contributing to organizational resilience in the SME context is developed. The model directly contributes to the theorization of organizational resilience in SMEs as it identifies that tangible and intangible resources (and capabilities) can provide alternative basis for SMEs to neutralize the threats in the environment and cope with disruptions and/or take advantage of the emerging opportunities and thrive in the face of disruptions.

This exploratory study focused on SMEs operating in Nigeria, a context where SMEs account for over 95% of all private enterprises (Ihua and Siyanbola, 2012). Given the exploratory nature of this study and the aim to develop and enrich theory as opposed to

testing theory, a larger part of the theory is situated at the end of this chapter. The methods applied are considered first and the empirical findings discussed. An inductive model of the factors contributing to organizational resilience in SMEs is presented in the discussion, after which the implications of the research and conclusions are drawn.

# 4.2 Interviews with SME owner-managers

#### 4.2.1 Procedure and Research Participants

The sample for Study 1 included SME owner-managers in Lagos State, Nigeria. Interviews were conducted with SME owner-managers who were identified through a regional entrepreneurship/small and medium enterprise umbrella organization in Lagos State (Entrepreneurial Development Centre - EDC). The suitability of the organisations for the study was further checked by a short telephone survey prior to each interview. Participants all own and/or manage SMEs that have been in existence for a minimum of 5 years and have encountered critical incident(s), as these were considered important in providing rich information about an organization's action and resilience (Chen, 2004; Dabhilkar et al., 2016).

A critical incident is defined in this research as an event or a situation that totally challenge the existence of an organisation (Dabhilkar, Birkie and Kaulio, 2016; Lagadec, 2007; Linnenluecke and Griffiths, 2012). Such events are capable of exposing organisations to high levels of uncertainty which might have adverse economic impact on the organization and ultimately threaten its survival (Shepherd, Douglas, and Shanley, 2000; Sullivan-Taylor and Wilson, 2009). These could be internal (e.g., accidents, crises etc) or external (e.g., loss of a major client; abrupt changes in customer tastes and demands; heightened competition; terrorism attacks, natural disasters, fuel crisis, regulatory issues etc) shocks. The researcher provided this explanation to each participant in the interview.

While the investigation of such critical incidents provides a greater possibility of determining the resilience of organisations, an key limitation of this approach is that critical incidents could differ in their level of severity and the resilience of an organisation to a particular 'critical incident' may be related to its size (Linnenluecke and Griffiths, 2010). In other words, a situation classified as a critical incident in one organisation may seem minor from the perspective of another organisation especially due to the broad range of organisations within the SME sector (in terms of firm size). For example, an incident such as the death of a key person in a small organisation could completely challenge its existence whereas this may not have any impact on a medium-size or relatively large organisation.

That said, organisations certainly face situations that impact adversely on their performance and threaten their existence (Boin, 2009; Whiteman & Cooper, 2011). In recent times, there has been an increase in the scale and range of disruptions that threaten organizations including a severe global economic downturn; natural disasters; industrial accidents; technological changes; disruptive social media trends; threat of terrorism etc (Choucri, Madnick, and Koepke, 2016; Laufer and Coombs, 2006; Ritchie, 2004; Scholtens, 2008; Toubiana and Zietsma, 2016). While these are extreme events (Sullivan and Branicki, 2011) which some scholars classify as crises (e.g., Vargo & Seville, 2011), there are disruptions that could seem "minor" but tends to escalate to a major organisational challenge (e.g., abrupt change of customer tastes and demands, loss of a major client, change in technology etc.). The point is that "minor" events may also threaten the existence of organisations. In the same vein, Sutcliffe and Vogus (2003) emphasise the importance of organisations' adjustments to both continuous strains resulting from small disruptions as well as severe disruptions from larger events. Hence, it was important to determine how the organisations in this study responded to and surmounted these "critical incidents" to preserve performance, to recover, avoid decline/failure, or develop new capabilities (Linnenluecke, 2017; Meyer, 1982; Perrow, 2011; Sutcliffe & Vogus, 2003).

More so, participants were informed that the study is about the resilience of the organization as an entity and not the resilience of the SME owner-manager as an individual. This was done to avoid misconceptions and the provision of irrelevant information on the part of participants as SMEs owner-managers hardly treat or handle their businesses or organisations as separate entities (Storey, 2010).

Each interview participant (SME owner-manager) was primarily asked to identify and describe a critical incident (disruptive event) the organisation had encountered. A total of 20 'critical incidents' were investigated in this study (e.g., regulatory issues, supply glitches, customer taste/demand, loss of a major client, heightened competition, new technology, and terrorism). Participants were also asked to discuss resources and capabilities that helped the organisation overcome the incident. Probing questions were used when the interview needed to be redirected to the concept of resilience, such as 'can you tell me how the organization dealt with the situation?' or 'can you tell me what your organization did to deal with the situation or reduce its impact?' This enabled the researcher to extract themes, patterns and key phrases from the participants' responses that in turn helped to specify variables that need to go into a follow-up quantitative study.

The researcher stopped contacting potential participants when the interviews were no longer adding new insights, which is called the point of theoretical saturation (Eisenhardt, 1989). A total of 20 SME owner-managers were interviewed in this study. Nine of them were men and the remaining eleven were women. Participants were from a variety of industries such as manufacturing, retail, pharmaceutical, agriculture, construction etc. Interviews took place in the offices of the interviewees from January to February 2015. Details about participants are provided in Table 4.1.

Code	Industry	Male/Female	Years of Business Activities	Number of Employees
Participant A	Oil and Gas	Female	20	150
Participant B	Manufacturing	Male	21	95
Participant C	Retail	Female	6	15
Participant D	Agriculture	Male	8	72
Participant E	IT Solutions	Male	10	30
Participant F	Hospitality	Female	15	100
Participant G	Events Planning	Female	9	10
Participant H	<b>Business Consulting</b>	Male	6	13
Participant I	Fashion	Female	20	17
Participant J	Telecommunication	Male	7	25
Participant K	Retail	Male	9	21
Participant L	Construction	Female	12	152
Participant M	Insurance	Male	16	87
Participant N	Catering Services	Female	7	146
Participant O	Pharmaceutical	Female	11	100
Participant P	Real Estate	Female	18	54
Participant Q	Service	Female	6	18
Participant R	IT Solutions	Male	8	60
Participant S	Agriculture	Male	6	20
Participant T	Pharmaceutical	Female	15	240

# Table 4.1Interview Participants

All interviews were semi-structured, ranging in duration from 30 minutes to 1 hour. Each interview was audio recorded (on participant's approval) and transcribed using Express Scribe. To validate the accuracy and reliability of the data, transcripts were sent back to participants to ensure that their views were appropriately represented. Transcript contents were confirmed by interviewees with a few minor corrections made. All transcripts were coded manually.

Thematic analysis approach was used to analyse the qualitative data as this is considered a suitable method for exploring qualitative data and it has considerable benefits for navigating between inductive and deductive modes of reasoning to develop theories (Gill 2014; Duriau, Reger, and Pfarrer 2007). Boyatzis (1998) asserts that thematic analysis helps progress data analysis from merely reading data to discovering patterns and developing themes. This approach to data analysis has been applied by several studies in the entrepreneurship and SME literature (Bamiatzi and Kirchmaier 2014; Branicki, Sullivan-Taylor, and Livschitz 2017; Herbane 2010; Jones, Coviello, and Tang 2011; Cacciotti et al. 2016).

Although this seem more like an emergent inductive process, the analysis was guided by the research question *"What are the antecedents to organisational resilience?"* The researcher needed to analyse the themes that emerged from the data and by so doing, generate and tell a coherent story about how organisations in the study overcame critical incidents and hence, developed organizational resilience capability. To do this, the researcher was steered by the idea that "it is the connection with empirical reality that permits the development of a testable, relevant, and valid theory" (Eisenhardt, 1989, p. 532). Therefore, the qualitative data was analysed in an iterative manner; going back and forth between the data and an emerging structure of theoretical arguments (Miles and Michael Huberman 1994; Strauss and Corbin 1998).

The analysis followed generally recognized steps (Miles and Huberman, 1994) which have been used by other researchers (e.g., Pratt, Rockmann, and Kaufmann 2006).

#### Step 1: Generating a list of first-order codes

The researcher started by finding out statements from each interview transcript that shows the interviewees' view of the world through open coding (Locke, 2001) as she began coding the data without knowing, in advance, where the coding process will take me. While coding, highlighting relevant text as well as repeated ideas in each interview transcripts, several data segments that related to the resources and capabilities that enabled SMEs in this study to overcome critical incident(s) were discovered. The relevant data extracts from each transcript were saved into a separate word file. This coding process resulted in a composite list of various repeated ideas (first-order codes) for the entire 20 interview transcripts. The language used by participant were used as the firstorder codes (Van Maanen, 1979).

#### Step 2: Organising first-order codes into second-order codes or themes.

Reading through the composite list of the first-order codes (created in step 1 above) idea by idea and searching for relationships between and among the various first-order codes, the researcher was able to organize the first-order codes into second-order codes that express a common theme. This was done by putting together same or similar ideas moving from open to axial coding (Miles and Huberman, 1994). All relevant coded data extracts were collated within identified themes. After forming the themes, the entire data was revisited to determine if there is a proper match between the first-order codes and themes. This step allowed comparison between and across interview transcripts. A theme is an implicit idea or topic that a group of first order codes have in common (Miles and Huberman, 1994).

#### Step 3: Determining theory by combining second-order codes or themes.

Once the first-order codes were grouped into second-order codes forming themes, the researcher began searching for dimensions underlying the themes. This was done to understand the way the different themes fitted together into a coherent picture in explaining the factors that contributes to organizational resilience capability in SMEs. These themes were aggregated in relation to the two main dimensions of resources and capabilities proposed by the RBV of the firm (i.e., tangible and intangible resources). Once a possible framework was identified, the fit of the data with the emergent theory was re-examined (Locke, 2001).

An overview of the data structure is illustrated in Figure 4.1, which summarizes the process followed and shows the first-order codes, second-order codes, and the aggregate dimensions based on which the model for organizational resilience in SMEs was built.

Specifically, the aggregate dimensions shown were based on the two main categories of

resources and capabilities proposed by the RBV of the firm (Barney, 1991).

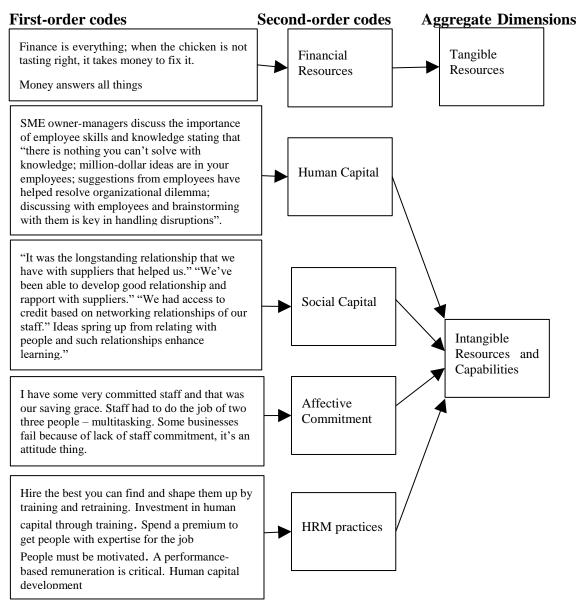


Figure 4.1 Overview of Data Structure

The next section provides an overview of the findings, followed by a discussion of the factors that contribute to organizational resilience in the SME context in Nigeria. Subsequently, a more general theoretical model of organizational resilience capability building in SMEs is proposed.

#### 4.3 Findings

Looking at the data repeatedly, five specific themes relating to the resources and capabilities that foster organizational resilience became apparent. These include: (1) Financial resources, (2) human capital, (3) social capital, (4) Affective commitment, and (5) HRM practices. These themes, referred to as antecedents to organizational resilience, are further divided into two main categories: tangible resources (Williamson, 1975) and intangible resources/capabilities (Becker, 1964; Tomer, 1987), in line with the RBV of the firm (Barney, 1991). Hence, the theme representing tangible resources and in particular, financial resources was designated accordingly, while themes representing intangible resources and capabilities (e.g., human capital, social capital, affective commitment, and human resource management practices) were grouped accordingly.

# 4.3.1 Tangible Resources

In presenting the findings, some data displays which include a narrative of the findings, and additional supporting data were synchronized and integrated (Table 4.2). These are included to help the reader make sense of the data and the study.

Tangible resources which consist of physical capital resources (Williamson, 1975) contributes to organizational resilience in SMEs. Financial resource endowment is the main tangible resource identified in the qualitative data. SME owner-managers discussed the importance of financial resources in maintaining daily business operations and resolving organizational dilemmas especially in terms of threats and disruption:

"money is also critical. We cannot do without money. We need money to even pay the people we hire talk less of fixing things when problems come. In fact, we need money to sort out a lot of issues in business. Money the bible says answers all things" [Participant T]

"the major issue when anything goes wrong is finance" [Participant H]. However, participants noted that SMEs in Nigeria generally suffer financial constraints; "If you want to talk of SMEs, let's start from the small level. Finance, ah capital generally is a problem in Nigeria", "the major challenge facing most SMEs in Nigeria we all know

*is finance*". Interestingly, some SME owner-managers discussed strategies they have used to ensure availability of financial resources which has helped their organizations to remain in business despite disruptions. These include, regular bank savings also referred to as consolidatory fund, buffer fund, and backup fund by some participants. This fund serves as a buffer when critical incidents occur and cushions its effect on the organization's bottom line thereby, contributing to organizational resilience:

"... if you run a business and you have a kind of consolidatory account, it's a compulsory savings. As you run your business you have certain amount of money fixed monthly, quarterly, annually, and the purpose is when ships are down at least you have something to fall on." [Participant B].

Some SME owner-managers noted that their regular bank savings provided backup

financial resource that helped the organization to overcome a critical incident and stated:

"Another thing that helped us was we had enough buffer, enough buffer funds. Because I had at the back of my mind, that things can happen, things happen unexpectedly at times you know, so we were saving and storing up so that in case anything happens, we can survive.... we place money in (laugh), we just keep putting money on deposit in banks and just forget about it, I just ignored that we had such funds. So that really helped us, we started taking from it little by little (laugh) [Participant N].

## 4.3.2 Intangible Resources and Capabilities

In addition to tangible resources, intangible resources and capabilities (Barney, 1991) can also contribute to organizational resilience. Intangible resources and capabilities revealed during the data analysis include employee skills and knowledge (human capital), the attitudes and behaviours of employees (affective commitment), interactions between employees within the organization, and relationships between the focal organization and other organizations in the business environment, such as suppliers (internal and external social capital).

Table 4.2Data Supporting the Interpretations of Factors Contributing to Resilience

Theme	Representative Quotations			
Tangible Resources				
Financial resources	"Finance is everything. [] when the chicken is not tasting right, or the rice is not ok, at the end of the day it takes money to fix these things []" (Participant N).			
	"The major issue when anything goes wrong is finance" [Participant H].			
	"Those companies that you see that are still thriving, its either they have good source of funding either by saving up and so they are bound to continue." [Participant B]			
	Intangible Resources and Capabilities			
Human Capital (Employee skills and knowledge)	"There is no one formula for resilience; you just have to know what works. You come together with you staff and think through it." (Participant N).			
	"Every problem has a solution and I believe very strongly that people are keytheir knowledge, their skills. The bible says my people perish for lack of knowledge. So, when it happened [a critical incident], I got my team together and I said look what has happened, what do we do? And you won't believe it, we got the headway from that small meeting. [] so, people, the right people is key, you need them around you, you need them to help you." (Participant T)			
	"My employees made some suggestions which we all sat down to critique and eventually this helped us a lot." (Participant O).			
	"if there is one thing I need to say, it is that the most important thing that keep a company going and resilient is people, your people the right people working in the organization." (Participant T)			
	"If you don't get the right people to work with you, you'll get into deep waters (Participant H).			
	"There are very few businesses where you can do it all by yourself, even if yo are a consultant and you have it all in your head, at a point in time even if you are so good in what you are doing, your business is going to grow, and you are going to need help, so people. A book that threats this is called e-me revisited by Michael E Garba. That book is phenomenal." (Participant T)			
Social capital (Networking Relationships)	"we've been able to develop good relationship and rapport with them so when we had challenges we told them, and they understood. Some of them [suppliers] were just giving us support and they are like pay when you can. So that support from suppliers, has really helped us to be able to leverage on they, supplying us raw materials with turn around and when we get funds, we pay them." (Participant N)			
	"I relate with people, not particularly people in my area because it's like you'r boxing yourself up. The moment you open up your mind to other people, lister to other people from other areas too, not just you, you will learn things you never imagined, you know, the world is not about any one person. You just fin that ideas will just start to spring up." (Participant J)			

Affective Commitment (Committed Employees)	"And also we have a perfect scenario of certainly more than half, majority if I can put a percentage I would say 75% of my staff are committed. They call me and tell me things like; this competitor is coming up, this person is coming, oh they do it this way, let's not do it that way. It's a sense of ownership, they didn just come to work and go through their emotions, it's like it's their business an that is the ultimate. When your staff has a sense of ownership and they treat it like their own, no matter what happens they will stand up for the company. Foi [Company name], it's been all about my staff." (Participant T)	
HRM practices (Measures for Shaping Employees)		
	"Over the years, we may not be paying to touch the sky but you know, there is incentives which we have put in place like profit sharing, human capital development, send them on training, salary raise sometimes and so many things." (Participant H)	

# 4.3.2.1 Human Capital

Human capital was identified by SME owner-managers as playing a key role in enhancing organizational resilience. As one participant noted: "*there is nothing you can't solve with knowledge*." SME owner-managers recognize that the resilience and ultimate survival of their organizations, especially in the face of critical incidents, does not depend only on their personal knowledge and expertise, but more so on the skills and competences of their employees. As a result, organizations that have the 'right people' are more likely to foster resilience:

"As a businessperson, when you hear from others that is when you see opportunities but if you depend on what you have or know, you have nothing. You know, Richard Brown published two nights or two days ago; he said a milliondollar idea are in your employees. Imagine the boss who thinks these are just workers and am the one that know it, am the one who has the knowledge, you'll rob yourself of every good thing that is around your compound. So, in an environment like this for instance, that man there [referring to an employee] might know something I don't know, the woman there [referring to an employee] know something I don't know." [Participant J]

For some SME owner-managers, brainstorming with employees; getting employees to make suggestions and deliberating on each suggestion before drawing conclusions is an important aspect of both acting on potential threats and responding to disruptions and hence, forming part of the organizational resilience capability building process. Instances of human capital as an important concept in fostering organizational resilience in SMEs emerged in the interview data and involved what it meant for SME owner-managers to be open to the contributions of their employees especially when critical incidents occur. For example, one SME owner-manager describes the importance of being open to the ideas and contributions of employees in the day-to-day activities of the organization as well as responding effectively to disruptions and/or taking advantage of emerging opportunities:

"...everything is open in my company, and our workplace is very casual and employees make contributions to the running of the company. I have called my employees, we have discussed and very good ideas have come up and we are still working on some of them." [Participant J]

Some SME owner-managers discussed how the ideas and experiences of employees were vital in resolving organizational dilemmas at certain phases in the life of the organization. The ideas and suggestions of employees were mostly deliberated upon prior to subsequent actions taken towards potential threats or in response to disruptive occurrences. See comment below:

"I would also say that one of the things that helped us is the experience of our people, I mean the experience that they have. Because they know what to do and so many of them were bringing suggestions and that really helped us. I would say experience is key in this sixteen-year journey and still, when I look at my team I am sure we are ready for the journeys that is ahead of you". [Participant T]

On the other hand, the data shows that the deficiency of the requisite skills and knowledge of employees can inhibit SME resilience, and hence, result in SME failure. As one SME owner-manager noted:

"...the greatest asset an organization would have is human capital, that's what I know human capital. If you don't get the right people with the right skill and everything to work with you, you'll get into deep waters. [...] most of us are guilty of hire monkeys and pay peanut." [Participant H].

Overall, SME owner-managers recognize that their employees differ in their skills and knowledge and it is a combination of the diversity in employee skills and knowledge that informs SME resilience and ultimately, survival especially as decisions bordering on potential threats and/or disruptions are based on brainstorming and deliberations.

"So when it happened [the loss of a major client] I pulled my team together, these things have happened, what are your ideas? What can we do? They were giving ideas and we subject it we critique it; ok this idea you brought in, what do you think? And we look at it and at the end of the day we all agree that brilliant, oh not so brilliant. [...] so ok, we had different sessions, meetings we were looking at it and everything we did after that time was decided in those sessions." [Participant N]

#### 4.3.2.2 Social Capital

Likewise, SME owner-managers stressed the importance of social capital (that is, networking relationships) in overcoming disruptive situations. The social and relational networks of SME owner-managers and employees are transformed into organized resources and capabilities that effectively facilitate the collective action of organizational members to face and resolve situations. SMEs were able to mobilize resources to mitigate the critical incidents and disruptions, hence making social capital a contributor to the response of SMEs in the face of disruptions. As one SME owner-manager noted: "When we talk about networking it means building new relationships" (Participant J). The data reveals compelling evidence that the relational networks developed by SME owner-managers and their employees both within and outside the organizational resilience capability. One SME owner-manager described how longstanding relationships with suppliers for instance, provided access to credits in challenging times and ultimately aided the resilience and survival of their organizations:

"You build relationship with your suppliers. I will never forget, it is the relationships that we have with suppliers, our longstanding relationship that helped us with raw material to keep producing until we stabilized. Without them we cannot afford it. There was just no other way." (Participant M)

The mobilization of social capital was further enhanced by employees' use of their social network as this helped organizations gain access to resources such as credit from suppliers, which aided the organization to survive critical incidents and stabilize. Besides being useful in challenging times, supplier credit resulting from employee relational network is considered an alternative to bank loans in financing business activities. One SME owner-manager indicated:

"I remember one particular staff, [...] she went to the extent of taking things, our raw materials on credit from suppliers just to keep the business going. I mean, I was touched and that is what I'm talking about. I didn't know the supplier, she introduced them to me. I was happy, I said ok and so they will supply us the necessary materials to keep the work moving on and at the end of the month or end of the week, we would pay [...] so we had this credit line. [...] so it was you know it helped quite a lot, it helped you know we were able to find our feet and stabilized and even after we did stabilize you know sometimes business runs on credit lines as long as you are servicing your debt, business runs on credit line it's not just bank loans we can use to stabilize our businesses." [Participant I]

Hence, employee relational network appeared to be efficient in supporting the organization disruptions occur. With pre-existing social capital, the employee in the above interview extract, proved to have made significant contributions to support the organization during disruptive incident, enhancing resilience of the organization in an unprecedented way. It is clear that in times of disruptions when uncertainty level increase and urgent needs arise, bridging social ties becomes important in fulfilling new tasks and taking up collective actions. This is especially the case when bonding social capital are insufficient to respond to the disruptions.

Apart from gaining access to credit from suppliers, SME owner-managers' networking relationships provide access to other resources in form of ideas and information which were mostly helpful in overcoming critical incidents and disruptive situations. Some participants discussed how sharing and exchange of ideas and information with people outside their organizations and often outside their industry have been helpful in sustaining their organizations despite disruptions. For example, participant I stated thus:

"A few of us still come together you know if we can't meet physically, we meet by phone to exchange ideas. You know, it's like I'm going through this thing, I need help. What do I do? What do I do? So, everybody gives their opinion and you look at them, and you know, that is just the solution. Sometimes all you need is just a sounding board, and this is been really helpful. I remember so many times, even other people ask for help like that in the group." [Participant I]

One SME owner-manager wraps up the importance of networking relationships in

fostering resilience capability in the SME context as she said:

"Networking is critical, no man is an island. You see, you don't make friends just because of what you hope to get out of them but even as you make friends and you have people, you collide with help, because you know, people are your clothe, your covering. So, in the day of need people will come to your rescue. So, I think networking is key and some people do it effortlessly and some of us struggle. [...] for me, solid network would mean of course, Lagos Business School, Entrepreneurial Development Centre, NGOs and other business associations. I will encourage everyone who owns or manages a business to just belong to groups of likeminded people that will help to take you from here to there." [Participant T].

#### 4.3.2.3 Affective Commitment

Another enabler of organizational resilience situated in the SME context is the

commitment of employees to the organization. As some SME owner-managers noted:

"...I have some very committed staff. Because they stood by me to see that everything is fine. They were bringing ideas and everything and we also had to now reshuffle staff to be multitasking, you have to do the job of two three people, you are in procurement doesn't mean you can't head events, and they were happy to work." [Participant N]

Committed employees would do everything within their capacity to ensure that their organization survives despite disruptions. Some SME owner-managers recounted how their organization survived and thrived on supplier credit line secured by their employee(s) in the face of disruption. Interestingly, some of these employees show a sense of ownership by going an extra mile to ensure that their organizations survive and thrive, even though their salaries are delayed because of the disruption(s). For example, Participant I comments:

"I remember one particular staff; I mean she was so committed you know, she went to the extent of taking things our raw materials on credit from suppliers just to keep the business going" [Participant I].

More so, SME owner-managers when asked to give their opinions of the factors responsible for the failure of SMEs in their specific industries, cited lack of commitment of employees and the negative attitudes and behaviours of employees as a major cause of SME failure especially when critical incidents occur in the organizations. According to them, such uncommitted employees leave the organization once there is a disruption and in some cases even steal company property and funds. This is especially the case if salaries are delayed due to organizational issues. SME owner-managers recalled their experiences of some of such instances to buttress their point on the effects of the poor attitudes and behaviours of employees on the resilience of organizations and their ultimate survival. Hence, whether an organization and particularly, SME will survive and thrive in the face of critical incident(s) depends to the staff and their level of commitment to the organization. SME owner-managers' comments in this regard are as follows:

"In my opinion, I think the major challenge in SMEs is the staff. Staffing issues are killing businesses. You find that 90% of our staff think they are doing us favours, they are coming to work for you so they are doing you a favour. It's an attitude thing; they are not committed to the job [...] They have a wrong attitude, they don't have character." [Participant I]

"You know, people don't really have this owner mentality that oh supposing I'm the owner of this business will I still allow this to happen? A number of staff didn't come back, a lot of them. Some of them had to go back to their towns because salaries were not forthcoming... This really affected us and also our bottom line. We were having too many things to deal with and staff issue on the other side again." [Participant Q]

While some SME owner-managers condemned the negative attitudes and behaviours of

employees in SMEs, they noted that SMEs should share in the blame as they mostly hire

cheap labour who lack the required skills for the jobs and are uncommitted.

#### 4.3.2.4 Human Resource Management Practices

Human resource management practices were also identified as being instrumental to organizational resilience in SMEs. While describing the poor skills and negative attitudes of employees, SME owner-managers made statements referring to measures that could enhance the knowledge, skills, attitudes and behaviours of employees in SMEs. They assert that various human resource management practices have been useful in shaping the skills, knowledge, behaviour and attitudes of employees in their organizations. These include; recruitment of the right calibre of people for job positions, training and retraining employees to improve their knowledge and skill level, motivating employees through the use of rewards and compensations, ensuring employees have opportunity for growth within the organization, as well as involving them in decisions pertaining to the organization; hence giving them a sense of belonging.

Firstly, in terms of recruiting the right calibre of people for job positions, SME ownermanagers noted that while it is difficult to hire highly skilled people given limited financial resources, it is important to "pay a premium" to employ people who are knowledgeable and have average skills to perform the required tasks. However, it is sometimes difficult to find people with the required skills. As such, it is essential that SMEs recruit the best they can find and invest in training them to develop the required skills and knowledge. This is particularly crucial, as SMEs require the ideas and skills of their employees to grow and survive in the face of disruptions. Consequently, some participants affirmed that they are very selective in terms of staffing and recommended that other SMEs should do the same:

"SMEs should be ready to at least above average invest in human capital then train them to suit you because these are the people that will help the company when problems come." [Participant H]

Some SME owner-managers go extra mile to *"entice"* qualified employees from large organizations by offering them opportunities for future career development. SMEs do this

in order to benefit from the knowledge and skills of such qualified staff and this has paid off for some SMEs in this study in terms of revolving organizational dilemmas. For example, Participant H comments:

"And what we do specifically is for instance, big organizations that have people that we do similar business, all we just do is go and entice some of their staff to say ok you have bigger opportunity here, you can grow with us, you can grow to become this in your career, why not come join us instead of queuing. You are on a long queue to grow a career in a big organization, come to a small organization, we do the same business, come and exhibit your expertise so that we can grow together. And you know, when those types of people come in, they work harder because they know there is something in the nearest future for them and that is what our strategy has been. [...] And they have helped the company in so many ways because they have been exposed to a little bit of the advanced methodologies, framework in the big organizations. So, what they come with is the expertise which they have actually been trained to do in the big organization to the small organization and it has helped us. Instead of us going merry-go-rounding concerning certain issues we will just go straight to the point because they've actually experienced it in the large organization where they worked before"

Secondly, SME owner-managers discussed the importance of rewarding and compensating employees as this motivates employees and further enhances the level of their commitment to the organization. This is particularly crucial as motivated employees are expected to go extra mile for the organization when critical incidents happen and hence, could contribute to organizational resilience:

"When you get into deep waters you need your people to help, so people must be motivated. [...] Obviously, you have to have a performance management ... make performance appraisals in order to replace those who cannot change and to reward properly those who are doing well. So, should I say a performance-based remuneration is also very critical." [Participant T]

According to the SME owner-managers, the rewards and compensation packages do not only motivate employees to perform their duties, but also motivate them to stay in the organization. This is particularly important, as SMEs spend resources to recruit and train employees and hence, would expect to reap the benefit of their investment by retaining them and thereby, the skills and knowledge required to resolve organizational issues or take advantage of emerging opportunities. "That's bit by bit you identify those ones that are good, you treat them, compensate them well to hold on to them, to retain you do all what you can do to retain good ones because you can't be everywhere, you can't be at the same place all the time. You retain those ones and ease up those ones that are not so good." [Participant N]

# 4.4 Discussion

In the present turbulent business environment, only resilient organizations can survive and thrive (Lengnick-Hall et al., 2011). Therefore, developing resilience should be an initiative embraced by today's organizations. Several scholars emphasize the importance of organizational resilience (e.g., Dahms, 2010; Lengnick-Hall et al., 2011), but the literature on the factors contributing to resilience remains fragmented and provides a more general overview with a major focus on large organizations. Since a systematic investigation into organizational resilience in the SME context is scarce, little is known about the specific factors that enhance the resilience of SMEs especially in the context of developing countries (Cooper et al., 2014) and hence, there is little guidance on how SMEs can develop organizational resilience capability.

The main purpose of this exploratory study was to investigate the factors that contribute to organizational resilience in the SME context. This study draws on the RBV of the firm to empirically examine and inductively theorize the factors contributing to organizational resilience in the SME context. Based on the findings, a framework of organizational resilience in the SME context is developed in Figure 4.2. There is no doubt that more research is needed to further examine the insights provided by the framework. Hence, this framework affords an initial grounding that researchers might be able to augment with additional theoretical insights to build a more specific model of organizational resilience in SMEs.

However, insights into the dynamics of resilience in the SME context begins with an understanding of its antecedents. The RBV of the firm forms the theoretical basis for the

framework such that the factors contributing to organizational resilience were divided into tangible (finance) and intangible resources and capabilities (human capital, social capital, affective commitment, human resource management practices). The framework suggests that SME resilience is influenced by tangible and intangible resources and capabilities. Although it is possible to test several propositions in an extensive empirical study based on the findings, modelling the various relationships between variables could be especially difficult and result in a long quantitative survey instrument. Therefore, it might be useful to separate and control some of the factors.

This study has some limitations that suggests avenues for future research. First, the small sample (n = 20) on which empirical analysis is performed limits its generalizability. A subsequent quantitative phase (Study 3) with increased sample size was therefore designed to examine the extent to which the findings are robust. Second, this study relied primarily on qualitative interview data to explicitly unearth the factors that contribute to organizational resilience in the SME context where there is little empirical research.

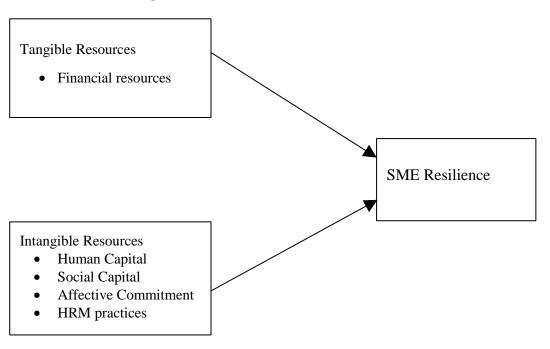


Figure 4.2: Framework of SME Resilience

Hence, interview data were particularly appropriate for developing an inductive framework. Subsequent research can test the theory developed with a broader sample using quantitative/survey method, while also gathering outcome data. This further requires the development and validation of an organizational resilience measurement tool as this domain lacks valid and reliable measures for the construct (Ho et al., 2014).

Consequently, the two subsequent quantitative phases (Study 2 and 3) in the sequential exploratory mixed method adopted in this thesis build on the results of this exploratory qualitative phase (Study 1) to address some of the above limitations. The 1st quantitative phase (Study 2) develops and validates an organizational resilience measures based on the existing literature and the findings of Study 1, while the 2nd quantitative phase (Study 3) builds on the findings in Study 1 and the existing literature to investigate the antecedents and performance outcomes of organizational resilience, and further validates the organizational resilience measure developed in Study 2.

It was reasoned that since intangible resources (and capabilities) are more valuable in terms of developing an organization's long-term competitive advantage and firm performance (Barney, 1991; Newbert, 2007), it would be more meaningful to narrow down the focus of the subsequent quantitative study (Study 3) to the intangible resources and capabilities. Moreover, these resources and capabilities constitute aspects of the human resource management literature, which has relatively very scant literature on organizational resilience (Ho et al., 2014).

## 4.5 Conclusion

Given the importance of organizational resilience in the present turbulent environment and the value of SMEs to national economies, the need to understand the factors contributing to organizational resilience in the SME context has become vital for organizational researchers. The findings of this study provide insight into the factors underlying organizational resilience in SMEs. The findings and theoretical model therefore serve as a foundation for further research on organizational resilience and an initial empirical step toward understanding the dynamics of organizational resilience in the SME context, in particular.

# **Chapter Five**

# Study 2: Development and Validation of Organizational Resilience Scale

# 5.1 Introduction

Scholarly interest in organizational resilience has increased over the past few years. However, most attention on this topic has almost exclusively focused on theory building, despite several calls for more empirically driven research such as case studies and surveys (e.g., Bhamra et al., 2011). A possible explanation of this deficiency is the lack of valid measures for the organizational resilience construct (Ho et al., 2014; Richtner and Lofsten, 2014) given that there is limited research on how organizational resilience can be actually measured (Bhamra et al., 2011; Kamalahmadi and Parast, 2016). Scholars have discussed the need to measure organizational resilience emphasizing its importance as the foundation for more empirical research (e.g., Annarelli and Nonino, 2016; Bhamra et al., 2011; Vogus and Sutcliffe, 2007). For example, Bhamra et al. (2011) conduct an extensive literature review on organisational resilience in the SME context and conclude that research to measure organisational resilience and "empirically prove theories" on the subject are urgently needed. Annarelli and Nonino (2016) conducted a comprehensive literature review in the organisational resilience domain and conclude that research assessing and measuring organisational resilience is genuinely lacking. Yet, little has been done to systematically develop an organizational resilience measure necessary for testing theory about its antecedents and outcomes.

As is evident from the literature review in chapter two of this thesis, conceptualisations of organisational resilience can be explained from multiple perspectives. Some studies focus on bounce back aspect of resilience (e.g., Horne and Orr, 1998; Wildavsky, 1998), while other studies embrace resilience as bounce forward capability (e.g., Hamel and

Valikangas, 2003; Lengnick-Hall et al., 2011). An examination of the extant literature in chapter two of this thesis also reveals that studies on existing measures of organisational resilience (e.g., Mallak, 1998; Somers, 2009) are deficient in some ways especially in relation to capturing the two dimensions of organisational resilience. For example, Mallak (1998) in an attempt to measure organisational resilience, focused on measuring the resilience of employees within an organisation and used it as a proxy for organisational resilience measurement. While this study certainly contributes to the literature in the resilience domain, it falls short of accounting for the two dimensions of resilience at the firm-level and thereby, has limited use as a measure of the construct in this thesis.

The purpose of this chapter is to develop and validate a new organizational resilience measure; addressing theoretical and practically relevant calls for the development of reliable and valid tools to assess organizational resilience. Specifically, the chapter: (a) builds on the notion that organizational resilience is a multidimensional construct (Bhamra et al., 2011; Burnard and Bhamra, 2011; Ponomarov and Holcomb, 2009; Lengnick-Hall and Beck, 2005) and use the two dimensions of organizational resilience reviewed in chapter two (bounce back and bounce forward resilience) as a theoretical basis for operationalizing the construct; (b) generates and refines items to measure the construct based on the literature and interview data of Study 1; (c) estimates psychometric properties of the measure, and provide evidence of construct validity. Data were collected from a sample of SMEs to assess the validity and reliability of the measures. Results from exploratory factor analyses, confirmatory factor analysis, and convergent and discriminant validity assessments offered support for the validity of the two dimensions of the organizational resilience construct. Finally, the findings were discussed in terms of the theoretical and empirical implications of the newly developed Organizational Resilience Scale.

5.2 Theoretical Background of a New Organizational Resilience Measure

The literature review in chapter two indicates that there are two different dimensions of organizational resilience: bounce back and bounce forward resilience. Bounce back resilience focuses on capabilities that preserve the status quo; referring to organizational resilience as the ability of an organization to cope with and bounce back from disruptive circumstances (Gittell et al., 2006; Horne and Orr, 1997; Linnenluecke and Griffiths, 2010; Sutcliffe and Vogus, 2003; Vogus and Sutcliffe, 2007; Wildavsky, 1988). On the other hand, bounce forward resilience transcends the traditional bounce back dimension, defining resilience as an organization's ability to develop new capabilities by making use of disruptions as windows of opportunity for innovation, and performance improvement (Annarelli and Nonino, 2015; Hamel and Valikangas, 2003; Lengnick-Hall and Beck, 2005; Lengnick-Hall et al., 2011; Reinmoeller and Van Baardwijk, 2005). The definitions of the two dimensions are represented in Table 5.1.

Description of Organizational Resilience Dimensions.				
Organizational resilience dimensions	Description			
Bounce back	An organization's ability to cope with and recover quickly from disruptive, unexpected events.			
Bounce forward	An organization's ability to develop new capabilities and therefore, capitalise on emerging opportunities from disruptive, unexpected events.			

 Table 5.1

# 5.3 Measure Development and Validation

To develop a psychometrically sound measure, this study followed some recommendations of Hinkin (1998). First, potential items for the newly proposed measure were identified and the content validity of the items was assessed. Second, series of item

level, and convergent and discriminant validity analyses were performed to assess the validity of the organizational resilience measures.

## 5.3.1 Scale Item Generation

Item generation is a critical phase in the scale development process as it provides the basis for content validity and it is important that items capture the specific domain of interest and contain no superfluous content (Hinkin, 1998). An initial set of items for the organizational resilience measure was generated from the literature on organisational resilience as the investigation of available theories and literature guarantee content adequacy of the final scale (Hinkin, et al., 1997). Specifically, the theoretical definitions and perspectives of organizational resilience consisting of two dimensions were used as a guide for item generation (Hinkin, 1998; Schwab, 1980).

Additional items were derived from interviews with twenty (20) SME owner-managers whose organizations are located in Lagos, Nigeria. Sampled SMEs were all Nigerian owned and 45% of the interview sample were female while the remaining 55% were male. Each SME owner-manager was asked to narrate a critical incident their organizations had faced and how the situation was managed. From the narratives provided by SME owner-managers, some items were identified that represent organizational resilience. Hence, both deductive and inductive approaches were used for item generation to ensure the development of a better scale especially as organizational resilience is a newly emerging field (Hinkin, Tracey, and Enz, 1997).

In total, an initial pool of 47 items were generated to test the two dimensions of organizational resilience. The initial 47 items also allow for deleting of items during the scale development process (Hinkin, 1998). All items are presented in Table 5.2 (items that were generated inductively are marked with an asterisk). The items refer to the

capability of the organization "our organization has the ability to…." This was done because organizational resilience is conceptualized as a capability.

Based on the importance of writing/presenting scale items in a clear and specific manner, the research followed the rules proposed by Hinkin (1998). First, the items were as brief as possible and in simple language. Second, "double-barrelled" items that measure more than one issue or characteristic were totally avoided as they are likely to confuse respondents and leave them with no viable response alternative. Third, leading questions were avoided as they are likely to bias responses by suggesting how participants should answer. Fourth, reverse-coded questions were not used as these can confusing and have negative effect on the psychometric properties of the scale (Harrison and McLaughlin, 1991). However, it is important to note that some items involve some level of ambiguity such that they include words and phrases that are subjective (e.g., "complex problems" and "normal operations"). This is considered a limitation of this study as it is possible that these items may not have equivalent meaning for all respondents in the survey (Devillis, 2011; Hinkin, 1998).

Based on the recommendations of scale development literature (e.g., Haynes, Richard and Kubany, 1995; Hinkin, 1998; Netemeyer, Bearden and Sharma, 2003), the initial 47 items were afterwards subjected to an assessment of content validity which is detailed in the next section.

 Table 5.2

 Table 5.2

 Initial Sets of Items Generated for the Two Dimensions of Organizational Resilience

 Bounce Back Resilience

 Our organization has the ability to ......

 BBR1
 Cope with the impact of disruptive challenges<sup>d</sup>

 BBR2
 Respond effectively to unexpected incidents<sup>d</sup>

- BBR3 Manage environmental pressures<sup>b</sup>
- BBR4 Withstand the continuous changes in the environment without losing focus<sup>d</sup>
- BBR5 Cope with new and challenging demands of the external environment<sup>i</sup>
- BBR6 Deal with difficult situations<sup>d</sup>
- BBR7 Allocate alternative resources to sustain operations when critical incidents happen.<sup>i</sup>
- BBR8 Reallocate resources within the company.<sup>i</sup>
- BBR9 Alternate employees for various tasks and positions when critical incidents happen.<sup>i</sup>
- BBR10 Redeploy employees across various job roles and tasks when the need arises.<sup>i</sup>
- BBR11 Use different strategies when its existing strategy becomes ineffective.<sup>i</sup>
- BBR12 Sense and foresee disruptive changes<sup>d</sup>
- BBR13 Identify problems in the midst of critical incidents<sup>i</sup>
- BBR14 Prioritize activities when critical incidents happen<sup>i</sup>
- BBR15 Mobilize resources to meet set priorities<sup>i</sup>
- BBR16 Mobilize resources to resolve complex problems<sup>i</sup>
- BBR17 Mobilize resources to achieve goals in the midst of disruptions<sup>i</sup>
- BBR18 Generate funds from other sources to deal with disruptive challenges and challenging circumstances<sup>i</sup>
- BBR19 Obtain support from other organizations when needed<sup>i</sup>
- BBR20 Use backup resources to sustain operations when critical incidents happen<sup>i</sup>
- BBR21 Adapt quickly when situations change<sup>d</sup>
- BBR22 Respond quickly to disruptive challenges<sup>d</sup>

- BBR23 Restore operations quickly when disruptive changes happen<sup>d</sup>
- BBR24 Achieve goals in a timely manner<sup>d</sup>
- BBR25 Quickly reconfigure resources to respond to disruptions<sup>d</sup>
- BBR26 Quickly deploy resources to respond to disruptions<sup>i</sup>
- BBR27 Quickly deploy employees across various roles with minimal time and effort<sup>i</sup>
- BRB28 Quickly respond to changes in the environment<sup>d</sup>

#### Bounce Forward Resilience Our organization has the ability to ....

- BFR1 Anticipate future external changes that will affect our operations<sup>i</sup>
- BFR2 Monitor what is changing in the environment<sup>i</sup>
- BFR3 Evaluate disruptive changes based on previous outcomes<sup>d</sup>
- BFR4 Evaluate the potential impacts of anticipated changes on our operations<sup>d</sup>
- BFR5 Take immediate actions on anticipated future changes before they happen<sup>i</sup>
- BFR6 Develop new capabilities to respond effectively to situations outside our plan<sup>d</sup>
- BFR7 Adopt alternative strategies in response to changes in the environment<sup>1</sup>
- BFR8 Identify opportunities during disruptive challenges<sup>d</sup>
- BFR9 Create new strategies to capitalise on emerging opportunities during disruptions<sup>d</sup>
- BFR10 Reconfigure existing strategies to quickly capitalise on new opportunities during disruptions<sup>i</sup>
- BFR11 Create an essentially new strategy when existing ones become unsustainable<sup>i</sup>
- BFR12 Capitalise on environmental change in ways that create new options and capabilities<sup>i</sup>

- BFR13 Use external pressures to develop new capabilities that improve performance<sup>i</sup>
- BFR14 Develop new paths to take advantage of opportunities rather than depending solely on existing competencies<sup>d</sup>
- BFR15 Redesign strategies when disruptive challenges render existing ones untenable<sup>i</sup>
- BFR16 Acquire resources that enable us take advantage of further opportunities<sup>1</sup>
- BFR17 Exploit opportunities through partnerships and strategic alliances<sup>i</sup>
- BFR18 Recombine resources to exploit opportunities<sup>1</sup>
- BFR19 Develop new growth paths in anticipation of potential changes in the environment<sup>d</sup>

<sup>1</sup> scale items generated inductively from interview data.

<sup>d</sup> scale items generated deductively based on definitions of the two resilience dimensions

#### 5.3.1 Assessment of Item Content Validity

The extent to which the items are consistent with the definitions of the two dimensions of organizational resilience was assessed. Specifically, the researcher assessed the content validity of the initial pool of 47 candidate items with ten subject matter experts - PhD students at the York Management School who has previous work experience. A form that included the definition of each of the two dimensions of organizational resilience (i.e., bounce back and bounce forward resilience) and the initial 47 items listed in random order was distributed to each participant. A space was provided beside each of the items and participants were instructed to insert the dimension of organizational resilience that he/she believed the item matched ("BB" for bounce back resilience or "BF" for bounce forward resilience), or "NA" (i.e., not applicable) if the item described none or both dimensions described on the form. Using the approach taken by Schriesheim and Hinkin (1990), items that were appropriately categorised by 70% or more of the participants were

accepted as being representative of the underlying construct. Of the 47 items, 34 failed to meet this criterion and were dropped as a result. Subsequently, three SME ownermanagers were invited to comment thoroughly on the items. This was done to check their understanding of the items as well as how easy it is for them to answer the questions. This resulted in the rewording of a few items that were considered unclear. Overall, 13 items were retained for subsequent analysis of the proposed organisational resilience scale (6 items for bounce back and 7 items for bounce forward). This approach to assessing content validity has been used in business management research (e.g., Bolino and Turnley, 1999; Way et al., 2015) and a similar approach is recommended by Devellis (2011) and Mackenzie, Podsadoff, and Fetter (1991).

#### 5.3.2 Instrument Validation

Subsequently, the 13 items resulting from the content validity assessment were included in an online survey that was administered to SME owner-managers and a series of analysis (e.g., exploratory and confirmatory factor analyses) were conducted to further refine and validate the organizational resilience measure.

#### 5.4.3.1 Sample and procedures

Although this study was proposed to be done with the participants of the original targeted sample i.e. SME owner-managers in Lagos, Nigeria, it was conducted with a sample of SME owner-managers in the UK. This was because of the following reason. First, the researcher was granted only a single access to the targeted sample and hence, considered it reasonable to reserve the goodwill of the potential participants in Nigeria for the subsequent large-scale quantitative study. Second, the researcher was based in the UK at the time of this study and had developed a strong network with some SME ownermanagers in the UK who were willing to assist. The use of an initial population of SME owner-managers in the UK for scale validation in Nigeria is duly recognised as a limitation of this study/thesis since the UK sample is different from the population of interest – SME owner-managers in Nigeria (Devillis, 2011; Hinkin, 1998) and therefore, could interfere with the validity of the ensuing organisational resilience scale especially in the Nigerian context (Devillis, 2011). Moreover, there is a possibility that the scale items in the survey may have varying meaning to respondents in the two countries. While English is the official language for both the UK and Nigeria, research (Mangen, 2001) emphasize that language and culture could interact to create differences in the interpretations of concepts, terms and questions irrespective of whether data is collected from countries that speak same language. The literature also shows evidence of seemingly unproblematic terms and concepts that have different interpretations across countries and cultures. For example, the concept of leadership has been reported as one such concept that may refer to different things across countries. While leadership means a personal skill and the ability to trigger trust among participants in a study of information sharing for American respondents, for their Quebecois counterparts it refers to the authority that a person (a leader) can employ to enforce a set of rules or to make ensure that all participants follow them strictly (Mangen, 2001). In the same vein, it is possible that organisational resilience could vary in meaning and interpretation for SME ownermanagers in the UK and Nigeria. Therefore, using the results of the survey conducted in the UK for scale validation in Nigeria have some methodological weaknesses that compromise the validity of the organisational resilience scale.

The data collection followed a "snowball" procedure as the researcher had no access to a reliable SME sector database in the UK. An initial contact was made with 87 SME ownermanagers in the UK through networking relationships. These contacts were invited to participate in the online survey through emails and adopting the snowball sampling technique, an anonymous link was also created and sent to the initial contacts asking them to invite their contacts who are SME owner-managers in the UK. This procedure was used to generate a diverse sample in terms of industries/sectors. Written instructions, along with a summary of the purpose of the survey as an investigation of the resilience of their respective organisations, were also emailed to participants. Participants were told that their participation was voluntary and that their responses would be anonymous. As an incentive, the researcher offered an overall report to participants upon completion of the project. Four weeks after the launch of the survey, an email reminder was sent to every contact that had not completed the survey. In total, 119 respondents completed the survey questionnaire. This sample size (N = 119) meets the recommended minimum for scale development based on the number of variables and items (Bollen, 1989; Hinkin, Bruce Tracey and Enz, 1997). 82.2% of participating firms were small businesses (employing between 10 and 50 workers). Average firm age of participating firms was 13.61 (SD = 9.02). Firms were from a broad range of industries: manufacturing, hotel and restaurants, agriculture, construction, real estate and properties, wholesale and retail trade, finance and insurance, and information technology. However, based on the sample size, these industries were further grouped into three major industry categories of which 20.8% were from the manufacturing sector, 69.3% from service, and 9.9% represent trade, and the average firm size was 46 employees.

#### 5.4.3.2 Measures

The 13-item organizational resilience scale was used to measure the resilience of SMEs. Following Hinkin's (1991) recommendations, all items were measured using a five-point Likert scale ranging from 1 (*strongly disagree*) to 5 (*strongly agree*). Participants were asked to answer questions regarding their organisation's ability to deal with disruptions (such as, irregular changes in government policies and regulations, unexpected changes in customer tastes and demands, new technology, heightened competition etc.). Appendix E presents the measures for the various variables. This study controls for firm size, firm age and industry as these are believed to be associated with the organisational resilience construct (Linnennuecke, 2015). Firm size was controlled by the total number of employees in each SME while firm age was controlled by measuring the years of operation. Industry differences were controlled by including two dummy variables, with manufacturing as the omitted industry.

#### 5.4 Analysis

The analysis included three distinct phases: First, an exploratory factor analysis (EFA) was conducted. The responses to the 13 survey items were factor analysed using principal axis factoring (PAF) with a Promax rotation (Bearden et al., 1989; Hair et al., 1998). Eigenvalues greater than 1.0, a scree test were used to retain factors, and items with loadings of .04 or higher on only one factor were used to define the factor (Hinkin, 1998). Second, a series of confirmatory factor analysis (CFA) were performed. This phase tested the construct validity of the organizational resilience scales and to determine whether the multidimensional structure (hypothesized in the previous EFA) could be supported. Comparison of the CFA models was based on some fit indices such as Comparative Fixed Index (CFI), Incremental Fixed Index (IFI), Standardized Root Mean Square Residual (SRMR). The process began by testing a one-factor model where all 13 items were regressed onto one latent factor of organizational resilience, then a two-factor model, to mirror the subscale structure of the EFA result. Third, the properties of the organizational subscales were evaluated. The internal consistency reliability of each subscale identified in the EFA results was tested by applying the common threshold of  $\alpha > .70$  to denote a strong reliability (Nunnally and Bernstein, 1978; Tabachnick and Fidell, 2007).

#### 5.5 Results

#### 5.7.1 Initial Assessment of Factor Structure

Prior to conducting EFA, preliminary analysis was done to verify the suitability of the data for factor analysis. The factor correlation matrix showed correlations above .32 and

the Kaiser-Meyer-Olkin Measure of Sampling Adequacy (KMO) and Bartlett's Test of Sphericity was significant, implying that the data is suitable for factor analysis and factors are related and oblique rotation is justified (Tabachnick and Fidell, 2007). The EFA results provide some evidence of a two-factor solution. Two factors explained a total of 65.58% of the variance, exceeding the minimum acceptable level of 60% for scale development (Hair et al., 2006; Hinkin, 1998). The two-factor solution reflects the factors differentiated theoretically in this study: bounce back and bounce forward resilience.

Following Hinkin (1998) recommendations, item loadings were analysed further and items under each factor were retained based on a cut-off value of .40. Items were deleted one at a time on the basis of poor loading (less than .40 on intended factor) and loading on more than one factor. One item, "Our organization has the ability to take advantage of opportunities arising from disruptive situations" loaded on both factors and another item, "Our organization has the ability to reallocate resources within the organization to respond effectively to disruptions" loaded below the threshold of .40; therefore, they were not included in further development. Also, one item that did not load into its hypothesized factor was deleted, "Our organization has the ability to use alternative resources to sustain operations when disruptions occur". In total, 3 items were dropped leaving 10 items in the organizational resilience scale development process, with each dimension having 5 items (5 items for the bounce back and 5 items for the bounce forward dimension). As reported in Table 5.3, all items had high and significant loadings (ranging from .63 to .99), exceeding the recommended cut-off value of .40 (Hinkin, 1998).

Factor	r names and items	Factor 1	Factor 2
Bounc	e back: Our organization has the ability to:		
1.	Cope with disruptions	.78	06
2.	Respond quickly to disruptive challenges	.79	00
3.	Mobilise resources to resolve complex problems	.63	.12
4.	Deploy resources to deal with disruptive challenges	.81	14
5.	Deploy resources during disruptions to maintain normal operations	.65	.17
Bounc	e forward: Our organization has the ability to:		
1.	Identify opportunities from disruptive situations	05	.90
2.	Use opportunities in disruptive situations to develop new capabilities	.10	.84
3.	Use existing resources in new innovative ways to quickly capitalize on new opportunities in disruptive situations	.24	.64
4.	Use disruptive situations as opportunities to develop new growth paths in anticipation of possible changes in the environment	.04	.85
5.	Use disruptive situations as opportunities to develop new growth paths for a viable future.	19	.99
	Eigenvalues	5.10	1.46
	Variance explained (%)	51.04	14.55
	Cumulative (%)	51.04	65.58

# Table 5.3 Exploratory factor analysis of the organizational resilience scales.

Note. N = 119 Principal component analysis with Promax rotation. Factor 1 – Bounce back resilience, Factor 2 – Bounce forward resilience.

#### 5.7.2 Assessment of Convergent and Discriminant Validity

In addition to the exploratory factor analysis, series of confirmatory factor analyses were conducted to assess the convergent and discriminant validity of the organizational resilience measures as CFA provides a more rigorous test of construct validity (Hinkin et al., 1989). Specifically, two confirmatory factor analyses (CFA) were conducted using AMOS 24 software and maximum-likelihood estimation.

Firstly, a two-factor model (hypothesized in the previous EFA analysis) that included the 10 items measuring the two dimensions of organizational resilience was analysed. The results, presented in Table 5.4, indicate a high level of convergent validity for the bounce forward dimension and moderate convergence of the bounce back scale (all p values < .01). Although the composite reliability (CR) value for each organizational resilience dimension is above Fornell and Larcker's (1981) suggested cut-off of .70 (CR<sub>1</sub> = .77, CR<sub>2</sub> = .91), the average variance extracted (AVE) for bounce back measure (AVE = .42) was slightly below the cut-off value with the bounce forward dimension clearly exceeding the suggested cut-off value of .50 (AVE = .68).

Table 5.4	
Confirmatory Factor Analysis of the Organizational Resili	ence Scales.
Factor names and items	Factor loadings
Bounce back (average variance extracted)	
Our organization has the ability to	(.42)
1. Cope with disruptions.	.67
2. Respond quickly to disruptive challenges.	.74
3. Mobilise resources to resolve complex problems.	.64
4. Deploy resources to deal with disruptive challenges.	.59
5. Deploy resources during disruptions to maintain normal operations.	.68
Bounce forward (average variance extracted) Our organization has the ability to	(.68)
<ol> <li>Identify opportunities from disruptive situations.</li> <li>Use opportunities in disruptive situations to develop new</li> </ol>	.84
capabilities.	.88
<ol> <li>Use existing resources in new innovative ways to quickly capitalize on new opportunities in disruptive situations.</li> <li>Use disruptive situations as opportunities to develop new</li> </ol>	.72
growth paths in anticipation of possible changes in the environment.	.82
5. Use disruptive situations as opportunities to develop new growth paths for a viable future.	.84
Note. All factor loadings are standardized, and the chi-square test	had 34 degrees of

Table 5.4
<b>Confirmatory Factor Analysis of the Organizational Resilience Scales.</b>

freedom.

X<sup>2</sup> = 81.91; CFI = .91; IFI = .91; SRMR = .06.

The AVE values were further compared with the squared correlations of the two measures to establish discriminant validity. The average variance extracted values for both measures were greater than the squared correlation (.68 > .41 and .42 > .41); indicating discriminant validity.

Secondly, a one-factor model in which all 10 items loaded on a single factor was analysed and compared with the hypothesized two-factor model in which the items loaded on two distinct factors. This was done to further assess the discriminant validity of the organizational resilience scales. Table 5.5 presents the fit indices of the models. The result shows that the difference in chi-square between the two-factor model and the one-factor model is 60.54 (i.e., 142.45 - 81.91), which is distributed as chi-square with 1 degree of freedom (i.e., 35-34). This value is statistically significant, suggesting that the hypothesized two-factor model in which all items load on one organizational resilience factor (p < .0001); indicating discriminant validity.

Comparison of	Measuremer		le 5.5 s Using Confi	irmatory	Factor	Analysis	
Model	$\chi^2$	df	$ riangle \chi^2 \left(  riangle df  ight)$	CFI	IFI	SRMR	
Two-factor model	81.91	34		.91	.91	.06	
One-factor model	142.49	35	60.58**(1)	.80	.80	.09	

Note. N = 119, CFI = Comparative Fixed Index; IFI = Incremental Fixed Index; SRMR = Standardized Root Mean Square Residual. \*\*p < .0001

An excellent fit model is expected to have approximated values between .95 and 1.0 on fit indices such as CFI, NFI, IFI, and between .0 and .6 for SRMR (Hu and Bentler, 1999). While the two-factor structure and its corresponding items failed to illustrate an excellent fit on the goodness of fit indices, the results showed that the hypothesized two-factor structure fits the data better ( $\chi^2 = 81.91$ , df = 34; CFI = .91, IFI = .91, SRMR = .06) and demonstrated the a better fit than the one-factor model ( $\Delta\chi^2 = 60.58$ ,  $\Delta df = 1$ ); supporting the multidimensionality of the organizational resilience construct and the hypothesized two-factor model.

#### 5.7.3 Scale Reliability

Internal consistency assessment is one approach to showing the reliability of a newly developed measure (Hinkin, 1998). Internal consistency reliability deals with the homogeneity of the of the items within a scale and it is assessed with Cronbach's alpha (1951). As organizational resilience is a multidimensional construct with two dimensions, items within each dimension and the dimensions should correlate with each other. The correlation between the two organizational resilience dimensions is moderate and significant (r = .56, p < .01). The Cronbach alpha reliability estimates for the scales (.80 for bounce back and .91 for bounce forward) are considered strong as they both exceeded the traditionally acceptable value (.70) in early stages of scale development (DeVellis, 2016; Nunnally and Bernstein, 1978; Nunnally, 1978). The descriptive statistics, Cronbach's alpha coefficients ( $\alpha$ ) and correlations (corrected for reliability) among the scales used in this study are presented in Table 5.6.

#### 5.8 Discussion and Conclusion

The purpose of this chapter was to develop, using a theoretical framework grounded in the conceptualizations of organizational resilience, a new measure of organizational resilience and report on the validation of the new measures. Hence, it provided an explanation of the procedures utilized for the development of items for an organizational resilience scale and presented the results of psychometric tests that established preliminary evidence of construct validity of the scale.

V٤	riable	Mean	SD	1	2	3	4	5	6
1.	Industry 1 <sup>b</sup>	.69	.46						
2.	Industry 2 <sup>b</sup>	.10	.30	50**					
3.	Firm Size <sup>c</sup>	45.57	43.83	.14	09				
4.	Firm Age	13.61	9.02	.20*	13	.40**			
5.	Bounce Back Resilience	4.54	.53	10	.03	15	08	(.80)	
6.	Bounce Forward Resilience	4.36	.74	19	01	27**	17	.56**	(.91)

Table 5.6	
Means, Standard Deviation and Correlations Among V	ariables <sup>a</sup>

<sup>a</sup> Note. N = 119. Internal consistency estimates (Cronbach alphas) are displayed on the diagonal

<sup>b</sup>Industry 1 = dummy variable coded as service industry, Industry 2 = dummy variable coded as trade industry.

<sup>c</sup>Firm size coded 1 = small business (10-50), 2 = medium business (51-250) \* p < .05, \*\* p < .01 (2-tailed)

Both inductive and deductive approaches were used to delineate two dimensions of organizational resilience, namely bounce back and bounce forward resilience, and generate items of both dimensions of the construct. Overall, this process resulted in 47 items tailored to both dimensions of organizational resilience. The initial pool of 47 items was presented to PhD students of the York Management School, subject experts, and SME owner-managers who sorted the items according to the 2 dimensions based on their definitions. This exercise resulted in 13 items with acceptable content validity which were included in an online survey of SME managers in the UK for the purpose of construct validity.

The results indicate that organizational resilience has two different dimensions: bounce back and bounce forward resilience. Even though this framework may be seen by a number of scholars as a departure from some conceptualizations of "organizational resilience" that have focused primarily on the engineering origin of the concept (e.g., Wildavsky, 1998), the present study found strong support for a two-factor model in that (a) participants in the content validity study easily categorized the organizational resilience items into the two dimensions (i.e., bounce back and bounce forward); (b) the confirmatory factor analyses (summarized in Table 5.5) supported the two-factor measurement model. These findings build on and extend the theoretical work of researchers who suggest that organizational resilience is a multidimensional construct (e.g., Burnard and Bhamra, 2011; Bhamra et al., 2011; Boin and Van Eeten, 2013; Ponomarov and Holcomb, 2009; Lengnick-Hall et al., 2011), and provides a foundation for future empirical studies on organizational resilience.

Apart from the support for the two-factor conceptualization of organizational resilience, the findings highlight several strengths of the organizational resilience measures. First, the measures demonstrated acceptable levels of internal consistency indicating that the newly developed measures are reliable. Second, the measures possess adequate convergent and discriminant validity, given that they are empirically distinct from each other. EFA results indicated that items loaded on two factors as expected: bounce back and bounce forward resilience and the CFA results further demonstrated that the hypothesized two-factor model fits the data best. These findings provide strong evidence in support of the discriminant validity of the measures. Overall, the evidence provided in this chapter lends a considerable amount of support to the validity of the newly developed organizational resilience scales.

As stated earlier, the aim of this study was to develop the organizational resilience scale as a valid and reliable multidimensional measure. While the findings cannot be considered representative of all SMEs in the UK, due to the snowball sampling technique adopted in this study and the relatively small sample size, it is expected that this work will open up a wide range of further investigations.

A limitation of this study (Study 2) is the use of a single sample (n = 119) to establish the underlying factor structure of the organizational resilience scale by conducting both exploratory factor analysis and confirmatory factor analysis on same sample. Scale development requires the use of different samples to conduct these analyses (Hinkin, 1998). To address this limitation, the factor structure of the newly developed organizational resilience scale is retested on a different sample (reported in the next chapter) using CFA and relating the dimensions of organizational resilience to different antecedents and outcome such as firm performance. This contributes to the existing literature both by further validating the new organizational resilience scale and by linking the two dimensions of organizational resilience to different antecedents and outcomes. Scholars (e.g., Bhamra et al., 2011; Ho et al., 2014) emphasize the need for more empirical studies in organizational resilience research. The 2nd quantitative study (Study 3 - reported in the next chapter) starts to answer this call.

# **Chapter Six**

# **Study 3: Quantitative Research Methods and Findings**

#### 6.1 Introduction

The objective of this study (Study 3) was to examine the relationships in the research model proposed in chapter two of this thesis. In particular, an organisational-level perspective was used to examine the effects of two forms of human capital (homogeneous and heterogeneous collective human capital) and social capital (bonding and bridging social capital) on the two dimensions of organisational resilience (bounce back and bounce forward resilience) and how these in turn relates to firm performance. In this chapter, the methods used to test the hypotheses derived from the research model are discussed and the results presented. First, the context of the study in terms of the rationale for the context of Lagos in Nigeria is discussed. Sample and data collection procedures, measures of study variables, data analytical technique used to test the hypotheses - Structural equation modelling (SEM) - is also explained. Subsequently, the results of the data analyses for this study are presented.

#### 6.2 Method

Prior studies in the organizational resilience literature have typically adopted either a single case study approach (e.g., Reinmoeller and Van Baardwijk, 2005) or depended on single informants to answer questions concerning the entire organization (e.g., Akgun and Keskin, 2014), but these methodologies have obvious shortcomings. This study involved a large sample of SMEs and the collection of multisource data within each SME. Responses were aggregated to create organisational-level measures for each SME sampled for this study.

#### 6.2.1 Context of the Study

This study was conducted with a sample of SMEs in Nigeria. Compared with larger organisations, SMEs are known to lack slack resources and prone to disruptive and challenging situations (Lubatkin et al., 2006), thereby providing a relevant context for this study. Data was obtained from SMEs operating in Lagos State, Nigeria which is located in the South-western geographical zone of the country. Being the commercial and economic centre of the country, Lagos State has the highest concentration of business organisations of all sizes – micro, small, medium, and large organisations (NIPC, 2004; Lawal, 2011; Ogunyomi and Bruning, 2016). The state is of strategic importance to the country as it accounts for over 60% of industrial and commercial activities in Nigeria and generates more than 75% of its revenue outside of Federal Government Grants derived from oil revenues (Nwagwu and Oni, 2015). Lagos state has a population of over 18 million (George, 2010), which exceeds the population of many countries in Africa (Lawal, Ajonbadi and Otokiti, 2014; Nwagwu and Oni, 2015).

The sample frame was a Lagos State Ministry of Commerce and Industry listing of 2670 SMEs. From this list, three hundred and fifty SMEs were randomly selected and contacted to participate in this study out of which data were obtained from one hundred and seventy-seven SMEs, representing a 50.57% response rate. In particular, the final sample consisted of 366 TMT members (69% response rate), 382 middle level managers (72% response rate), and 390 entry level employees (73% response rate). Of the participants, 66% were men (73%, 62%, and 63% by level: TMT, middle-level managers, and entry level employees, respectively); the mean age was 33 years old (37.2, 33.0, 29.5 years old by level respectively); the average tenure in current position was 4.4 years (6.5, 4.2, and 2.5 years by level); and 50% held a minimum of an undergraduate degree (45%, 52%, and 53%, by level respectively).

SMEs in the sample were drawn from different industries including; manufacturing, hotels and restaurants, agriculture, construction, oil and gas, real estate and property, wholesale and retail trade, finance and insurance, information technology and others. However, these industries were further grouped into three broad and more encompassing sectors (manufacturing, service, and trade) for sake of simplicity and paucity. As Gushibet (2010) points out, SMEs are a very diverse group of businesses operating in the manufacturing, service, and manufacturing sectors. Table 6.1 summarizes the number of responding SMEs in terms of the three main sectors.

Sector	Number of Responding SMEs	Percentage Over Final Sample
Manufacturing	25	14.1
Trade	16	9.0
Services	136	76.8
Total	177	100%

Table 6.1 Responding SME Characteristic

To thoroughly assess perceptions of the various constructs, three participants from each of three hierarchical levels (top management team - TMT, middle-level managers, and entry-level employees) were selected by the CEO of each SME to participate in the study (Barrick, Thurgood, Smith, and Courtright, 2015). The following data collection procedures were undertaken. First, CEOs of each SME contacted 9 employees (three on each hierarchical level) to solicit their voluntary participation in the survey, assuring them of total confidentiality and anonymity. Subsequently, there was no further discussion by the CEOs with the participants. Second, in consideration of time constraints, survey assistants were hired with the help of the Bank of Industry (BOI) and Nigerian Association of Small and Medium Enterprises (NASME) in Lagos and trained by the researcher as they dealt directly with participants. The survey assistants delivered the 147

questionnaires to participants in each of the sample SMEs who agreed to participate in the survey. Follow up phone calls were made to remind participants of the survey expiry date and several visits were made to pick up completed questionnaires. Reminders were sent once each week to individuals who were yet to complete their questionnaires. Sometimes the survey assistants knew in person the participants in the sampled SMEs, and it is believed that such personal relationships, motivated participants to take part in the survey, hence boosting the response rate of this study (50.57%). In general, participants responded within three weeks of receiving the questionnaires.

To mitigate the potentials for common method variance due to social desirability, acquiescence, or consistency with "assumed" research hypotheses, this study followed some recommended guidelines of Podsakoff et al. (2003). One, data was collected from three different levels in each organization (SME): TMT members, middle-level managers, and entry-level employees. As presented in Table 6.2, items measuring the two forms of collective human and social capital were rated by both middle-level managers and entry-level employees in each organization; items on the two dimensions of organizational resilience were rated by middle-level managers; and items on firm performance, firm age, firm size and industry was rated by just TMT members.

Two, as the theoretical model (Figure 2.1) links the two dimensions of organizational resilience (rated by middle-level managers) to predictors and outcome variables, the predictor variables (collective human and social capital) were rated by middle-level managers and entry-level employees while the outcome variable (firm performance) was rated by TMT members. The control variables (firm age, firm size, and industry), were also informed by TMT. Three, clear response guidelines were provided, and respondents were guaranteed complete confidentiality and encouraged to answer the questions as honestly as possible by assuring them that there are no right or wrong answers. Four,

variable items for this study were pretested and screened prior to administering the main survey.

Variables	Survey Respondents
Homogeneous Collective Human Capital	Middle-Level Managers and Entry-Level Employees
Heterogeneous Collective Human Capital	Middle-Level Managers and Entry-Level Employees
Bonding Social capital	Middle-Level Managers and Entry-Level Employees
Bridging Social Capital	Middle-Level Managers and Entry-Level Employees
Bounce Back Resilience	Middle-Level Managers
Bounce Forward Resilience	Middle-Level Managers
Firm Performance	Top Management Team
Firm Size, Firm Age, and Industry	Top Management Team

Table 6.2Variables and Respondents' Hierarchical Level

#### 6.2.2 Measures

All variables were measured with multi-item scales, and scores on the scales were means calculated across items. All questionnaire items, apart from organizational resilience, were based on existing scales that have been used and validated by other researchers. Using the final sample, analyses were conducted to verify that the measures were sound. Measures for the variables are presented in Appendix F.

All variables in the theoretical model represents organisational-level constructs, but individual respondents were asked to rate those constructs. Hence, it was important to statistically demonstrate that individual responses for each organization could be aggregated to the level of analysis (Bliese, 2000). A vital criterion for aggregating data is evidence of within-unit agreement and between-units differences (Ancona and Caldwell,

1992; Goodman, Ravlin and Schminke, 1990). The following steps were taken to ascertain the presence of such agreement and differences. First, Interrater Agreement Index (James, Demaree and Wolf, 1984) was calculated for each variable to assess withinorganization agreement. This index ranges from 0 (no agreement) to 1 (complete agreement). James et al. (1993) suggested .70 as the cutoff for acceptable interrater agreement values. Second, Intraclass Correlation Coefficients, ICC[1] and ICC[2] (Bliese, 2000) were generated using one-way analysis of variance [ANOVA] on the individual-level data. ICC[1] is an indicator of convergence within units and values greater than zero with a corresponding significant ANOVA test statistic (F) are recommended (Kenny and LaVoie, 1985). ICC[2] provides an estimate of the reliability of mean differences across organizations - between-group variance (Bliese and Halverson, 1998). The results are stated under each variable in the subsequent paragraphs.

#### 6.2.3.1 Organizational Resilience

Scales that tap into the two dimensions of organizational resilience identified in this study (bounce back and bounce forward organizational resilience) were not available and existing measures of organizational resilience did not capture the entire conceptual spectrum of bounce back and bounce forward organizational resilience (e.g., Mallak, 1998; Somers, 2009). Hence, a new measure was developed in Study 1 (as shown in Chapter Five) following recommended guidelines (e.g., Hinkin, 1998; Nunnally and Bernstein, 1994; Tabachnick and Fidell, 2001). Based on the results of the organizational resilience scale development and validation reported in the Chapter Five (Study 2), a final scale consisting of 10 items was used to measure the two dimensions of organizational resilience in the present study (Study 3). Using a 5-point scale ranging from 1 = strongly disagree to 5 = strongly agree, middle-level managers were asked to assess their organization's ability to deal with disruptions (such as, irregular changes in government

policies and regulations, unexpected change in customer tastes and demand, new technology, heightened competition, supply chain disruptions, etc.). Sample items are "our organization is able to cope with disruptions" (bounce back resilience), "our organization is able to use disruptive situations as opportunities to develop new growth paths for a viable future" (bounce forward resilience). The full list of items making up the organizational resilience measure is presented in the Appendix F. Adequate reliabilities were achieved in the present study for both bounce back ( $\alpha$ . = 80) and bounce forward ( $\alpha$  = .83) resilience. Ratings for each dimension were averaged to obtain an aggregate value for each organization ( $r_{wg}$  = .90; F(176, 569) = 4.14, p < .001; ICC[1] = 0.4; ICC[2] = 0.76 – bounce back dimension, and  $r_{wg}$  = .93; F(176, 569) = 3.81, p < .001; ICC[1] = 0.4; ICC[2] = 0.74 – bounce forward dimension).

#### 6.2.3.2 Organisational-level Human Capital

This human capital construct involves two dimensions based: *homogeneous collective human capital and heterogeneous collective human capital.* To measure *homogeneous collective human capital*, individuals in each organization were asked to assess the value of the human capital of the employees of the organization as a whole, and not just themselves as individuals. This is in line with the theoretical nature of the construct (Kozlowski and Klein, 2000). An eight-item scale corresponding to Lepak and Snell's (2002) scale measuring the value of human capital was used. A five-point Likert scale ranging from 1 = Strongly disagree to 5 = Strongly agree was utilised. Sample items are "employees in our organization have skills that are instrumental for innovation" and "employees in our organization have skills that contribute to the development of new market/product/service opportunities." This scale has been validated by other studies (e.g., Cabello-Medina, López-Cabrales and Valle-Cabrera, 2011; Erdil, Kitapci and Timurlenk, 2010; Lopez-Cabrales and Valle, 2006). Averaged ratings over employees within each organization is used to obtain a score for this form of homogeneous collective

human capital construct for each firm ( $r_{wg} = .97$ ; F(176, 597) = 6.09, p < .01; ICC[1] = .54; ICC[2] = .84). Cronbach's alpha was .80.

On the other hand, *heterogeneous collective human capital* was measured by asking middle-level managers and entry level employees in each organization to assess the extent to which organizational members differ in their human capital – knowledge, skills and abilities – to ensure consistency with the theoretical nature of the construct. As stated earlier, Lepak and Snell's (2002) scale was used but items were worded to reflect the theoretical nature of the construct. This measure utilized a five-point Likert scale ranging from 1 = to a very small extent to 5 = to a very large extent. Each item measures the extent to which members of each organization differ in different aspects of their abilities. An example item is "employees in our organization differ in their innovative skills". Consistent with previous research (e.g., Shin, Kim, Lee, and Bian, 2012 in the team cognitive diversity literature), responses were aggregated to compute heterogeneous collective human capital ( $r_{wg} = .95$ ; F(176, 597) = 4.84, p < .001; ICC[1] = .47; ICC[2] = .86). Cronbach's alpha was .86.

Although the two forms of organisational-level human capital were assessed by individuals within each organization, items for the homogeneous collective human capital are constructed using the *referent-shift composition model*, where the referent of the items shifts from the individual self to the collective - all members of the organization as a whole (Chan, 1998). The level of measurement of this human capital construct is at the individual level, but the referent of the items reflects the collective rather than the individual, thereby shifting the focus to the level of the collective human capital in the organization and not an individual employee's human capital. When aggregated across members of the organization, the shared perceptions represent the homogeneous collective human capital construct. However, items for the heterogeneous collective

human capital are developed using the *dispersion model* as recommended by Chan (2014) to capture the variety of human capital within each organization.

## 6.2.3.3 Organisational-level Social Capital

Measures were based on the work of Subramaniam and Youndt (2005) as they measure aspects of internal (bonding) and external (bridging) social capital through assessing an organization's ability to share and utilize information and knowledge between individuals within and outside (including customers and suppliers) the organization. However, two items were developed in addition to a single item which represents bridging social capital in Subramaniam and Youndt (2005) based on the items for bonding social capital. Sample items are "employees in our organization share information and learn from each other" (bonding social capital) and "employees in our organization maintain personal contact with employees of other firms (e.g., suppliers) to develop solutions" (bridging social capital). Items were measured on a five-point Likert-scale ranging from 1 = Strongly disagree to 5 = Strongly agree. Responses of employees within each firm were averaged to obtain an aggregate rating of both elements of social capital: bonding social capital ( $r_{wg} = .88$ ; F(176, 598) = 4.05, p < .001; ICC[1] = .41; ICC[2] = .75), bridging social capital ( $r_{wg} = .92$ ; F(176, 598) = 5.15, p < .001; ICC[1] = .49 ; ICC[2] = .81). Both types of social capital achieve adequate reliabilities ( $\alpha = .71$ , .77 respectively).

#### 6.2.3.4 Firm Performance

TMT members rated relative firm performance based on a 7-item market performance scale developed by Delaney and Huselid's (1996). The 7-item scale focused on quality, innovativeness, employee satisfaction, customer satisfaction, growth in sales, market share, and profitability. While there have been some concerns about the use of subjective performance measures, such as the potential for common method bias, such measures have been widely used in the literature (e.g., Glaister et al., 2018; Cao and Gedajlovic, 2009; Chuang and Liao, 2010; Lubatkin et al., 2006; Patel and Conklin, 2012; Sun et al.,

2007). As earlier noted, prior research show evidence for convergent, discriminant, and construct validity of subjective and objective measures of firm performance (e.g., Wall et al., 2004). Items were measured relative to other firms in the last three years, on a scale ranging from 1 = much worse to 5 = much better. Ratings were averaged within each firm to obtain an aggregate rating for each firm's performance (F(176, 186) = 8.70, p < .001; ICC[1] = .79 ; ICC[2] = .89;  $r_{wg}$  = .97). Cronbach's alpha for this measure was .81.

Overall, the inter-rater agreement scores ( $r_{wg}$ ) for each variable was well above the cut of value of .70 (James et al., 1993) ranging between .88 and .97; indicating adequate agreement for aggregation. In all cases, the ICC[1] values which are indicators of convergence within units were greater than zero (ranging from .40 to .79) and the ANOVA test statistic (F) was significant (Kenny and LaVoie, 1985). Similarly, the ICC[2] values which are indicators of the reliability of the unit mean ranged from .74 to .89, suggesting that the means for the sets of responses for each variable correctly represents the true score for the organization (James, 1982).

#### 6.2.3.5 Control variables

Three variables that are associated with one or more of the core constructs in this study were included for controls (e.g., firm size, firm age and industry). Firm size was controlled because it may be associated with organisational resilience as well as firm performance. Medium size organisations may be more likely than small organisations to develop organisational resilience (Linnenuecke, 2012) and may have a larger resource base to build resilience (Barney, 1991; Collins and Clark, 2003). More so, firm size is assumed to directly affect firm performance because of economies of scale and market power (Shepherd, 1975). Following previous research (e.g., Branicki et al., 2017), firm size was defined in terms of the total number of employees in each SME and was measured with a single item – How many people currently work in your organisation? In addition, firm age was controlled by measuring the number of years the organization has

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been in operation. Since SMEs are a very heterogeneous group of businesses that operate across a broad range of industries (Gushibet, 2010), it was reasonable to include several industry activities in the questionnaire so that respondents can more easily identify their industry. These include; manufacturing, hotel and restaurants, agriculture, wholesale and retail, real estate and property, finance and insurance, information technology, oil and gas, construction, and others. However, these were further categorized into three more encompassing industry groups: manufacturing, trade, and service. Consequently, industry differences were controlled by including two dummy variables, with trade as the omitted industry.

#### 6.3 Data Analysis

#### 6.3.1 Data Analytical Technique

Structural Equation Modelling (SEM) was used to analyse the data. SEM can be defined as a class of methodologies in which researchers provide a priori specifications of the relationships between variables. It permits the analysis of both observed and latent variables. As Byrne (2010) notes, "in the behavioural sciences, researchers are often interested in studying theoretical constructs that cannot be observed directly" (p.4). In SEM, such constructs are represented by latent variables that cannot be directly observed, and observed variables "serve as indicators of the underlying construct which they presumed to represent" (Byrne, 2010, p.4).

SEM starts with the specification of a model to be estimated. A model is a statistical statement about the relationships among variables. Specification means formally stating a model and is central to the SEM approach. Without a doubt, no analysis can be performed until the researcher has specified a model of the relationships among the variables to be analysed (Byrne, 2010). In SEM, model specification involves formulating a statement about a set of parameters. Parameters are normally specified as either fixed

or free. Fixed parameters are not estimated from the data and their value is normally fixed at zero. Free parameters are estimated from the data and are those that the researcher believes to be nonzero (Byrne, 2010). The general structural equation model consists of two components: measurement model and structural model. While the measurement model is that component of the general model in which latent variables are prescribed, the structural model prescribes relationships between latent variables and observed variables that are not indicators of latent variables (Byrne, 2010; Kline, 2005). An important consideration in specifying models is identification. Identification shows whether a single unique value for each and every free parameter can be obtained from the observed data (Kline, 2005).

Once a model has been specified, the next step has to do with obtaining estimates of the free parameters to form a set of observed data. When the estimation procedure has converged on a solution, a number is created that encapsulates the degree of correspondence between the implied and observed covariance matrix. That number is referred to as the value of the fitting function. A model is considered to fit the observed data to the extent that the covariance matrix it implies is equivalent to the observed covariance matrix. The most common index of fit is the  $x^2$  goodness-of-fit test, which is derived directly from the value of the fitting function (Byrne, 2010).

The index of Fit provides an indication of the fit of structural equation models (Kline, 2005). The basic idea behind indices is that the fit of the model is compared to the fit of some baseline model that usually specifies complete independence among the observed variables. Some of these indices include normed fit index (NFI), Tucker-Lewis index (TLI), and comparative fit index (CFI). These indices could range between zero and one, with one representing perfect fit relative to the baseline model (Byrne, 2010; Hu and Bentler, 1999). 0.96 is considered evidence of good fit relative to the baseline model. Put

it differently, the value of 0.96 indicates that the target model is good fit to the sample data relative to the baseline model (Hu and Bentler, 1999).

Although SEM has some common features with standard approaches such as correlation and multiple regression, it is different from them in certain ways and has some advantages that makes it more suitable for data analysis for this study. First, it was necessary to conduct a set of confirmatory factor analysis (CFA) for the organisational-level data to ensure model fit. A 7-factor model that included homogeneous collective human capital, heterogeneous collective human capital, bonding social capital, bridging social capital, bounce back resilience, bounce forward resilience, and firm performance was tested with the data. Second, SEM provides a means of controlling extraneous or confounding variables as well as measurement errors. Second, it is a higher level analysis that permits the evaluation of the full underlying theoretical model (Kline, 2005). Moreover, scholars argue that SEM is a more comprehensive and flexible statistical technique than other standard approaches in terms of research design and data analysis (e.g., Byrne, 2010; Kline, 2005). In SEM, researcher can explore the extent to which the model fits the sample data and whether it should be retained, modified, or rejected.

#### 6.3.2 Missing Data

Prior to testing the hypotheses, missing data were first addressed by some recommended procedures. A close look at the data suggested low levels of missing data as most variables had between 4 and 9 missing responses, which is clearly below 5% (McKnight, McKnight, Sidani, and Figueredo, 2007). In cases where respondents were missing less than 50% of the items that make up a scale, a single imputation method was used to replace missing items. The mean value of the respondent's remaining scale responses were imputed for the missing responses (Engels and Diehr, 2003).

#### 6.3.3 Confirmatory Factor Analyses (CFA)

The author conducted a series of Confirmatory Factor Analysis (CFA) using AMOS Version 24 and maximum-likelihood estimation to (1) retest the factor structure of the organizational resilience measures (bounce back and bounce forward resilience measures) on the current sample, and (2) establish the discriminant validity of the measures reported by middle-level managers and entry-level employees respectively because they self-reported more than one variable in the study.

First, the researcher conducted a set of CFAs with data on bounce back and bounce forward resilience from middle-level managers. The first CFA was conducted based on the hypothesized two-factor model and the second was on a one-factor model. Various fit indicators recommended by Hu and Bentler (1999) were used to evaluate the results of the CFAs: the chi-square, comparative fit index (CFI  $\geq$  .96), normed fit index (NFI  $\geq$  .96), standardized root-mean-square residual (SRMR  $\leq$  .08), and the root-mean-square error of approximation (RMSEA  $\leq$  .06). The hypothesized two-factor model with bounce back and bounce forward organizational resilience as distinct factors was compared with a onefactor model in which all bounce back and bounce forward organizational resilience items loaded on a single factor. The results, presented in Table 6.3, illustrate that the one-factor model had poor fit indices and the hypothesized two-factor model, with bounce back and bounce forward organizational resilience items loading on separate factors, provided a good fitting model,  $\chi^2$  two-factor model (34, N = 382) = 200.35, p < .001, NFI = .91, CFI = .92, SRMR = .044, RMSEA = .06.

In addition, the alternative one-factor model was compared to the hypothesized two-factor model by testing the change in chi-square. Again, the two-factor model demonstrated a better fit than the one-factor model ( $\Delta \chi^2 = 454.47$ ,  $\Delta df = 1$ ) as shown in Table 6.3.

		Analyses				
Model	$\chi^2 (df)$	$ riangle \chi^2 ( riangle df)^{\mathrm{b}}$	CFI	NFI	SRMR	RMSEA
Two-factor model	200.35 (34)	-	.91	.92	.044	.06
One-factor model	654.82 (35)	454.47**(1)	.78	.76	.084	.16

 
 Table 6.3

 Comparison of Alternative Factor Structure Using Confirmatory Factor Analyses

Note. N = 382. CFI = Comparative Fit Index; NFI = Normed Fit Index; SRMR = Standardized Root Mean Square Residual; RMSEA = Root Mean Square Residual. \*\* p < .01

This value is statistically significant, suggesting that the hypothesized two-factor model measuring the organizational resilience construct fits significantly better than the one-factor model, in which all items load on a single organizational resilience factor. In sum, the two-factor model fits the data better and consequently, supports the proposed organizational resilience factor structure and multidimensionality. This reconfirms the findings of Study 2 and provides further evidence of the construct validity of the organizational resilience measures. Hence, the examination of bounce back and bounce forward organizational resilience as distinct dimensions is justified.

Fornell and Larcker (1981) recommend that the extent to which two constructs are truly distinct (discriminant validity) should also be assessed by comparing the amount of the variance captured by the construct (Average Variance Extracted - AVE) and the shared variance with other constructs. The guidelines are; first, the level of the AVE for each construct should be greater than the squared correlation involving the constructs. Second, the levels of the square root of the AVE for each construct should be greater than the correlation involving the constructs. Both conditions are met in this study: AVE for both bounce back (0.56) and bounce forward (0.61) dimensions are each greater than the squared correlation of the AVEs (0.75 for bounce back and 0.78 for bounce forward) are again each greater than the

correlation involving the constructs which in this case is r = 0.47. Hence, discriminant validity is established.

Also, in terms of convergent validity, the Average Variance Extracted (AVE) and Composite Reliability (CR) were assessed. Each factor loading is significant and the AVE value for each dimension of organizational resilience (AVE = .56 for bounce back and .61 for bounce forward) is above the recommended cutoff of .05 (Fornell and Larcker, 1981). CR is a less biased estimate of reliability than Cronbach's Alpha, with an acceptable value of 0.7 and above. The CR for each dimension of organizational resilience also exceeds the cutoff (.87 for bounce back and .90 for bounce forward). Hence, convergent validity is established.

The Cronbach's alphas and intercorrelations of the organizational resilience scales are presented in Table 6.3. Both alphas are above .70 ( $\alpha = .84, .87$ ) and the intercorrelation is low at approximately .47. Also, both organizational resilience dimensions are significantly and positively correlated with the hypothesized predictors (e.g., collective human and social capital) and outcome (ranging from r = .22 to .54). Again, these findings support the multidimensionality of the organizational resilience construct. Taken together, these results support the distinctiveness of bounce back and bounce forward resilience.

Subsequently, the author conducted another set of CFAs to compare the hypothesised the hypothesised six-factor model for middle-level managers (bounce back resilience, bounce forward resilience, homogeneous collective human capital, heterogeneous collective human capital, bonding social capital and bridging social capital), and four-factor model for entry-level employees (homogeneous collective human capital, heterogeneous collective human capital, heterogeneous collective human capital, bonding social capital and bridging social capital, heterogeneous collective human capital, heterogeneous collect

	<b>Results of Confirma</b>	tory Factor Analy	<u>sis on Compe</u>	<u>ting Fa</u>	<u>ctor Struct</u>	ures
Va	riables rated by					
mic	dle-level managers					
	= 382)	$\chi^2 (df)$	$\Delta \chi^2$	CFI	RMSEA	SRMR
1.	The Hypothesised	1422.30***(480)		.81	.07	.06
	6-factor model					
	(BB, BF, HC1,					
	HC2, SC1 & SC2)					
2.	5-factor model 1:	1591.55***(485)	169.25***	.78	.077	.065
	Combining BB and					
	BF					
3.	5-factor model 2:	1576.40***(485)	154.1***	.78	.077	.063
	Combining SC1					
	and SC2					
4.	5-factor model 3:	1897.87***(485)	475.57***	.72	.087	.091
	Combining HC1					
	and HC2					
5.	1-factor model:	2956.97***(495)	1534.67***	.50	.114	.104
	combining all					
	variables					
Va	riables rated by					
ent	ry-level employees					
(N :	= 390)	$\chi^2 (df)$	$\Delta \chi^2$	CFI	RMSEA	SRMR
1.	The Hypothesised	468.12***(159)		.90	.07	.06
	4-factor model					
	(HC1, HC2, SC1 &					
	SC2)					
2.	3-factor model:	1107.42***(227)	639.30***	.75	.10	.076
	combining SC1					
	and SC2					
3.	3-factor model:	1366.66***(227)	898.54***	.67	.114	.109
	combining HC1					
	and HC2					
4.	1-factor model:	1826.04***(230)	1357.92***	.54	.134	.111
	Combining all					
	variables					

 Table 6.4

 Results of Confirmatory Factor Analysis on Competing Factor Structures

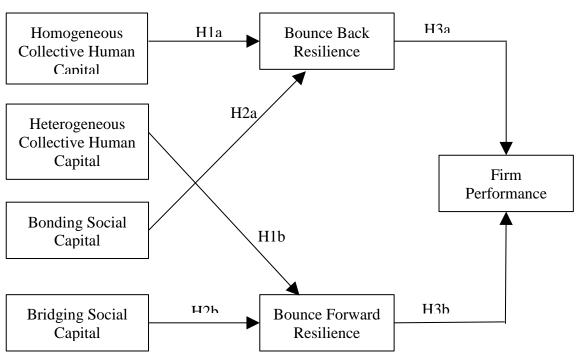
Note. CFI = comparative fit index; RMSEA = root mean square error of approximation; SRMR = standardized root mean square residual. BB = bounce back resilience; BF = bounce forward resilience; HC1 = homogeneous collective human capital; HC2 = heterogeneous collective human capital; SC1 = bonding Social Capital; SC2 = bridging social capital; \*\*\* p<.001

competing models. The results showed that these hypothesised factor models had significantly better fit than competing models, respectively (see Table 6.4), thereby indicating the distinctiveness of the study variables collected from participants across the three hierarchical levels.

#### 6.3.4 Analytical Strategy

All hypotheses were tested simultaneously with structural equation modelling (SEM), which allows for estimating multiple predictors at same time. First, the hypothesised model (see Figure 6.1) was specified and compared with an alternative model where paths were added from homogeneous collective human capital and bonding social capital to bounce back resilience and from heterogeneous collective human capital and bridging social capital to bounce forward resilience. The results showed that the hypothesised model had a poor fit to the data ( $\chi^2 = 59.00$ , df = 24, p < .001, CFI = .78, TLI = .75, RMSEA = .09, SRMR = .07). However, the model with additional paths fit the data well ( $\chi^2 = 28.54$ , df = 20, RMSEA = .05, CFI = .95, TLI = .93, SRMR = .05) and showed a significantly better fit than the hypothesised model ( $\Delta \chi^2 = 30.46$ ,  $\Delta df = 4$ , p < .001). The following results are therefore reported based on the revised model.

## Figure 6.1



The Hypothesized Model

#### 6.4 Results

Table 6.5 presents the means, standard deviations, and correlations among the key variables at the organisational level. As shown, both homogeneous collective human capital and heterogenous collective human capital were significantly and positively related to bounce back resilience (r = .49 and .32, p < .01 respectively) and bounce forward resilience (r = .53 and .43, p < .01 respectively). Also, both bonding social capital and bridging social capital were significantly and positively related to bounce back resilience (r = .40 and .31, p < .01 respectively) and bounce forward resilience (r = .58and .47, p < .01 respectively). These results in general are in line with the hypotheses. It is interesting to note that while bounce forward resilience was significantly and positively related to firm performance (r = .19, p < .05), bounce back was not (r = .06, p > .05). This study used correlations for independent variables to assess the effect of multicollinearity. Correlation values for all independent variables are below the cut-off of .90 (Pallant, 2016). Hence, there are no issues of multicollinearity and the correlation matrix provides preliminary support for the research hypotheses. Tests for multicollinearity indicated that a low level of multicollinearity was present (VIF = 2.05 for homogeneous collective human capital, 1.53 for bonding social capital, 1.31 for heterogeneous collective human capital, and 1.91 for bridging social capital).

#### 6.4.1 Hypotheses Testing

Table 6.6 and Figure 6.1 present the unstandardized estimates obtained from SEM analysis of the revised model. In support of H1a, H1b, H2b, H3a and H3b, the SEM results show that homogeneous collective human capital had a significant positive relationship with bounce back resilience ( $\beta = .50$ , s.e. = .13, p < .01) while heterogeneous collective

	Table 6.5           Descriptive Statistics and Zero-Order Correlations of the Study Variables <sup>a</sup>	ive Sta	tistic	s and	Zero-t	Tabl       Order	Table 6.5 Drder Cor	relatic	ons of	the S	tudy V	/ariab	les <sup>a</sup>
	Variable	Mean	SD	1	2	3	4	S	9	7	∞	6	10
	Firm Size	56.50	54.08										
2.	Firm Age	13.51	7.65	.43**									
3.	Industry 1 <sup>b</sup>	0.14	0.35	$.16^{*}$	60:								
4.	Industry 2 <sup>°</sup>	0.77	0.42	04	07	74**							
5.	HCHC1 <sup>d</sup>	3.96	0.51	.10	60.	02	.02	(.80)					
9.	HCHC2 <sup>e</sup>	3.79	0.67	.20**	.08	.04	02	.45**	(98.)				
7.	Social Capital1 <sup>f</sup>	4.02	0.50	.03	04	04	.05	.65**	.36**	(77)			
<u>%</u>	Social Capital2 <sup>g</sup>	3.88	0.52	.01	04	.05	.01	.48**	.37**	.39**	(.71)		
9.	Bounce Back	3.92	0.63	$.16^{*}$	.08	.01	07	.49**	.40**	.40**	.31**	(08.)	
10.	Bounce Forward	3.92	0.65	02	00.	.08	01	.53**	.43**	.58**	.47**	.47**	(.83)
11.	11. Firm Performance	3.98	0.56	.08	.08	.03	02	.28**	.25**	.28**	.24**	.06	.19* (.81)
$a_{n}^{h} = a_{n}^{h} = b_{n}^{h}$ $b_{n}^{h}$ Indu $a_{n}^{h}$ HCF $a_{n}^{h}$ HCF $a_{n}^{h}$ Coci $a_{n}^{s}$ Soci $a_{n}^{s} p < a_{n}^{s}$	<sup>a</sup> n = 177 organizations. Values are standardized estimates <sup>b</sup> Industry 1 = dummy variable coded as manufacturing industry, 1; otherwise, 0. <sup>c</sup> Industry 2 = dummy variable coded as service industry, 1; otherwise, 0. <sup>d</sup> HCHC = Homogeneous Collective Human Capital. <sup>e</sup> HCHC = Heterogeneous Collective Human Capital. <sup>e</sup> Social Capital = Bonding Social Capital <sup>g</sup> Social Capital2 = Bridging Social Capital * $p < .05, **p < .01$	ions. Values are standar my variable coded as ma my variable coded as ser meous Collective Huma eneous Collective Huma eneous Collective Huma Bonding Social Capital Bridging Social Capital 01	standa ed as n eed as se e Hum ve Hum Capital Capital	rdized e nanufaci srvice ir an Capi nan Cap l	sstimate turing in dustry, ital. ital.	ss ndustry , 1; othe	, 1; oth erwise,	nerwise 0.	ö				

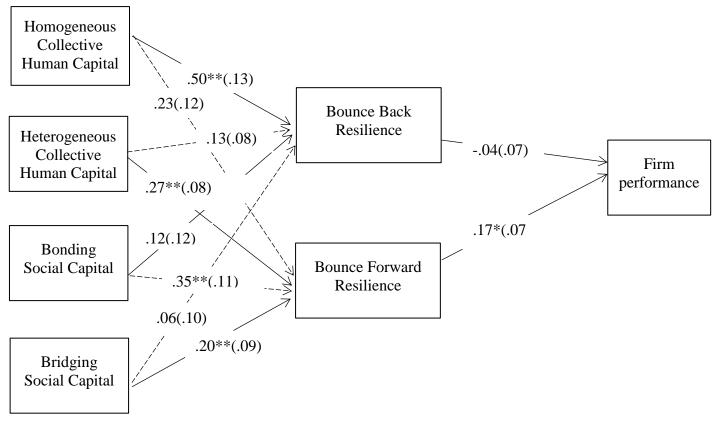
human capital had a significant positive relationship with bounce forward resilience ( $\beta$  = .27, s.e. = .08, p < .01). In the same vein, bridging social capital had a positive and significant relationship with bounce forward resilience ( $\beta$  = .20, s.e. =.09, p < .01). However, bonding social capital was not related to bounce back resilience ( $\beta$  = .12, s.e. =.12, p > .05), thereby not supporting Hypothesis 2a which states that bonding social capital is positively related to bounce back resilience. Meanwhile, although not hypothesized, bonding social capital was positively and significantly related to bounce forward resilience ( $\beta$  = .35, s.e. = .11, p < .01). While bounce back resilience was not related to firm performance ( $\beta$  = -.04, s.e. = .07, p > .05), bounce forward resilience had a positive and significant relationship with firm performance ( $\beta$  = .17, s.e. = .07, p < .05). A summary of the hypotheses and findings are presented in Table 6.7.

Re		ble 6.6 al Equation Modeling	ŗ
Variables	BB	BF	Firm Performance
Firm Size	.00(.00)	00(.00)	.00 (.00)
Firm Age	.00(.01)	.00 (.01)	.01 (.00)
Industry 1	07(.18)	.06(.17)	.02 (.18)
Industry 2	14(.14)	.01(.13)	00 (.14)
HCHC1	.50**(.13)	.23(.12)	
HCHC2	.13(.08)	.27**(.08)	
Bonding Social capital	.12(.12)	.35**(.11)	
Bridging Social capital	.06(.10)	.20**(.09)	
BB			04(.07)
BF			.17*(.07)
$R^2$	.29***	.25***	.29***

N = 177; <sup>a</sup> Industry1 = manufacturing, Industry2 = service; HCHC1 = homogeneous collective human capital; HCHC2 = heterogeneous collective human capital; BB = bounce back resilience; BF = bounce forward resilience \* p < .05, \*\* p < .01, \*\*\* p < .001

## Figure 6.2

## SEM Results of the Revised Model



Note: Unstandardized estimates are reported. \* p < 05; \*\* p < .01.

Table 6.7 Overview of hypotheses and findings

## 6.5 Conclusion

This chapter builds on and extends prior research on the conceptualization of organizational resilience. Specifically, two distinct dimensions of organizational resilience implied in the literature and confirm in Study 2 were explicitly theorized: the bounce back dimension and the bounce forward dimension. Different antecedents of these dimensions of organizational resilience and their effects on firm performance were examined. The empirical tests on Nigeria-based SMEs are strongly supportive of the theoretical arguments except for Hypothesis H2a and H3a. This chapter also sought to further evaluate the two-factor model of the organizational resilience construct hypothesized in the Study 2 (reported in Chapter 5) with a new sample. The hypothesized structure of the organizational resilience scale was reconfirmed. To this end, the organizational resilience construct has two subscales that fit well with the existing literature of organizational resilience. Consequently, the present study brings greater conceptual and empirical clarity to the concept of organizational resilience and makes the construct more meaningful for both scholars and practitioners.

## **Chapter Seven**

# **Discussion, Implications, and Conclusion**

#### 7.1 Introduction

At the outset of this thesis, the researcher noted and explained the ambiguity that exists in the literature regarding the conceptualisation of organisational resilience and the need for a more systematic empirical research on the antecedents and performance effects of the construct. Against this backdrop, using a mixed methods design comprising of three studies (Study 1, 2 and 3), this thesis investigated three research questions: what is organisational resilience? what are the antecedents of organisational resilience? and, what are the performance effects of organisational resilience? The analysis of Study 1 (qualitative study) yielded five factors that contribute to organisational resilience particularly in SMEs: financial capital, human capital, social capital, affective commitment, and human resource management practices. An initial quantitative study (Study 2), revealed two distinct dimensions of organisational resilience: bounce back and bounce forward resilience. A subsequent large-scale follow up quantitative study (Study 3) examined some antecedents to the two dimensions of organisational resilience and their subsequent effects on firm performance. The analysis revealed that bounce back and bounce forward resilience have distinct antecedents and performance effects. Together, these three studies (Study 1, 2 and 3) address the three research questions investigated in this thesis.

This chapter discusses the findings of the three studies in relation to extant literatures. Subsequently, it discusses the theoretical and practical implications of the findings, highlights the limitations of the studies, and provide some directions for future research. The findings are now discussed based on the three research questions/objectives.

## 7.2 Conceptualisation of Organisational Resilience

The first research question looked into the meaning of organisational resilience. This thesis identifies two dimensions of organisational resilience in the literature: bounce back and bounce forward resilience. On the one hand, bounce back resilience refers to an organization's ability to cope with and respond quickly to disruptions. On the other hand, bounce forward resilience refers to an organisation's ability to constantly renew its business model, and even capitalize on emerging opportunities in ways that aid the organization to secure a successful future. The findings of Study 2 and 3 further revealed that these two dimensions of the organisational resilience construct are different from each other. Specifically, the results demonstrate reliability as well as content, convergent, and discriminant validities of the two organisational resilience measures, thereby attesting to the multidimensional nature of the organisational resilience construct. Table 7.1 provides a summary of the scale development and validation results.

While prior research argues that organisational resilience is a multidimensional construct, existing studies have generally assumed and theorised organisational resilience as a unidimensional construct (e.g., Akgun and Keskin, 2014; Demmer et al., 2011; Gittell et al., 2006; Gunasekaran et al., 2011). However, an emerging stream of research have suggested that there may be multiple dimensions of the organisational resilience construct (e.g., Lengnick-Hall et al., 2011; Ho et al., 2014; Manyena et al., 2011; Va den vert et al., 2015). The findings in this thesis are consistent with this growing stream of research.

Validity Type	Study 2	Study 3
Content validity	Subject matter experts' exercise resulted in 13 items on the 2 dimensions of organisational resilience. EFA results show that 10 items loaded on 2 factors and explained over 65% of the variance. The dimensional estimates of internal consistency (Cronbach's alpha) = .80 and .91 for bounce back and bounce forward resilience respectively and exceeded the suggested standard (.70) for newly developed scale in social science research (Nunally, 1978).	Cronbach's alpha of .84 and .87 for bounce back and bounce forward resilience respectively exceeds the recommended level of .70 (Nunally, 1978).
Convergent validity	EFA results indicated that 10 items loaded highly on relevant 2 dimensions.	CFA results: Each factor loading was significant and loadings between measured variables and factors were generally greater than .5. The AVE values for both measures (.56 and .61) are above the recommended cut-off point of .50 (Fornell and Larcker, 1981). Composite reliability for both measures were above the cut-off point of .7 (.87 and .90)
Discriminant validity	The correlation between the two dimensions was moderate ( $r = .56$ ). The AVE for both measures were higher than the squared correlations (.68 > .41 and .42 > .41). Two sets of CFAs were performed to compare alternative models: the model with the two dimensions loading on separate factors fit the data better ( $X^2$ (34) = 81.91, $p < .0001$ ; CFI = .91; IFI = .91; SRMR = .06) than the model with all items of both dimensions combined on one factor ( $X^2$ (35) = 142.49, $p < .0001$ ; CFI = .80; IFI = .80; SRMR = .09).	The correlation between the constructs was relatively low ( $r = .47$ ). AVE for both measures were greater than the squared correlation (.56 > .26 and .61> .26). More so, square roots of the AVEs were greater than the correlation between the construct (.75 > .47 and .78 > .47). Additionally, series of CFAs comparing alternative nested models were conducted: the model with bounce back and bounce forward loading on separate factors fit data better ( $X^2$ (34) = 200.35, $p < .0001$ ; CFI = .91; IFI = .92; SRMR = .04) than the model with both dimensions combined on one factor ( $X^2$ (35) = 654.82, $p < .0001$ ; CFI = .78; IFI = .76; SRMR = .08).

 Table 7.1

 Overview of Organisational Resilience Scale Validation Results

#### 7.3 Antecedents to Organisational resilience

The second research question explored the factors that influence organisational resilience. First, Study 1 (qualitative/exploratory study) identified five factors that contribute to organisational resilience in SMEs: financial capital, human capital, social capital, affective commitment, and human resource management practices. Second, the follow up quantitative study (Study 3), upon confirming the distinctiveness of two dimensions of organisational resilience, further explored the influences of human and social capital on each dimension of organisational resilience. Hence, this section pulls together the threads on the various antecedents in the light of existing literature.

#### 7.3.1 Financial Resources

Study 1 revealed that financial resources contributes to organisational resilience capability building in SMEs. Cash flow and strong financial reserves were found to play a significant role in helping organisations and in particular, SMEs minimise threats and overcome unexpected disruptions. Some of the organisations discussed holding "back-up", "consolidatory" or "buffer" funds as a primary strategy to mitigate the impact of disruptions. Some further noted that they rely heavily on funds they had regularly saved from the proceeds from their business to overcome challenges as well as reduce the likelihood of business failure due to unexpected disruptive events. One SME owner-manager stated:

"Another thing that helped us was we had enough buffer, enough buffer funds. Because I had at the back of my mind, that things can happen, things happen unexpectedly at times you know, so we were saving and storing up so that in case anything happens, we can survive.... we place money in (laugh), we just keep putting money on deposit in banks and just forget about it, I just ignored that we had such funds. So that really helped us, we started taking from it little by little (laugh) [Participant N].

This finding bears similarity with recent insights that deposits of financial resources play a crucial role in organizational resilience capability building (Bradley, Shepherd, and Wiklund, 2011; Carmeli and Markman, 2011; Gittell et al., 2006; Pal et al., 2014; Williams et al., 2017). Pal et al. (2014) investigated the resilience of Swedish Textile and Clothing SMEs after an economic crisis and found that SMEs with strong financial reserves adjusted to the pressures imposed by the crisis and performed better financially. Financial reserves create a critical asset stock that allows organizations to more easily respond to disruptions (Gittell et al., 2013), and serve as a buffer to mitigate the impact of disruptions (Pal et al., 2014). This finding is particularly important as a SMEs lack access to financial resources (Storey, 2010).

While financial resources can be classified as tangible resource, Study 1 also uncovered the importance of intangible resources (and capabilities) that enable organizational resilience: human capital, social capital, affective commitment, and human resource management practices. These are discussed in the next few paragraphs.

#### 7.3.2 Human Capital

The results indicated that the knowledge, skills and abilities of employees play a vital role in helping organisations overcome disruptions and thus, develop organizational resilience capability. For example, some participants commented on the value of human capital in resolving organisational dilemmas:

"Every problem has a solution and I believe very strongly that people are key...their knowledge, their skills. The bible says my people perish for lack of knowledge. So, when it happened [a critical incident], I got my team together and I said look what has happened, what do we do? And you won't believe it, we got the headway from that small meeting. [...] so, people, the right people is key, you need them around you, you need them to help you." (Participant T)

"My employees made some suggestions which we all sat down to critique and d eventually this helped us a lot." (Participant O).

"I would also say that one of the things that helped us is the experience of our people, I mean the experience that they have. Because they know what to do and so many of them were bringing suggestions and that really helped us. I would say experience is key in this sixteen-year journey and still, when I look at my team I am sure we are ready for the journeys that is ahead of you". [Participant I]

These findings highlight the importance of employee brainstorming sessions in responding to disruptions and are consistent with the argument of some management

scholars (e.g., Demmer et al, 2011; Lengnick-Hall et al., 2011) who advocate that the knowledge, skills and expertise of employees help organizations maintain functioning and even thrive in the face of disruptions. This is particularly important as organizations depend on the perceptions and sense making skills of employees to determine appropriate courses of action in the face of disruptive events (Weick, 1998). More so, the extent to which an organization makes sense of such circumstances, sees opportunities, identifies the range of alternatives, determines actions, and carries them out depends on the organizational members' cognitive ability and human capital (Carmeli, Gelbard and Reiter-Palmon, 2013; Lengnick-Hall et al., 2011; Amabile, 1988; Weick, 1998). Human capital increases the problem-solving capacity of the organization, especially in the face of disruptions, by providing tacit understanding of the situation and appropriate solutions. This implies that lack of the necessary skills and knowledge of employees can prevent organisations from responding effectively to disruptions, and hence, lacking in resilience. This is highlighted by the findings in this study:

# "If you don't get the right people with the right skill [...] to work with you, you'll get into deep waters." [Participant H].

It is indeed through human capital that organizations are able to access and use knowledge from various sources to quickly adapt (Van Der Vegt et al., 2015), determine innovative solutions to disruptions, and challenge prevailing assumptions (Subramaniam and Youndt, 2005). Human capital theory maintains that employees' knowledge enhances their cognitive abilities which in turn leads to more productive and efficient activity (Davidsson and Honig, 2003). Teixeira and Werther (2013) identified the cognitive capital possessed by the organization and the specificity of its mode of governance, that is, the totality of the nature and quality of knowledge acquired by the organization as key sources of organizational resilience. Similarly, Williams et al. (2017) note that an organization's cognitive capability endowment is critical in maintaining positive functioning in the face of adversity.

Moreover, organizational resilience involves constructive sense making which enables a firm and its employees to notice, interpret, and provide meaning to disruptive surprises (Weick, 1988; 1995). The knowledge, skills and abilities of employees play an important role in building organizational resilience capability by enabling organizations to formulate responses (Dewald and Bowen, 2010) that ensures organizational survival and success (Lengnick-Hall and Beck, 2005). Human capital also aids the use of important insights and a broad repertoire of actions in innovative and flexible ways to manage threats and disruptions (Lengnick-Hall and Beck, 2005; Weick, 1995; Williams et al., 2017).

#### 7.3.3 Social Capital

The findings revealed the importance of social capital in the development of organisational resilience. The social and networking relationships developed by both SME owner-managers and their employees within and outside their organisations were advantageous in terms of providing access to resources and information that helped mitigate the impact of unexpected incidents that would have otherwise led to organisational failure. For example, some SME owner-managers recounted how their relationships with suppliers of key raw material provided access to credits in challenging times and ultimately aided the resilience and survival of their organizations:

"I will never forget, it is the relationships that we have with suppliers, our longstanding relationship that helped us with raw material to keep producing until we stabilized. Without them we cannot afford it. There was just no other way." (Participant M)

"...we've been able to develop good relationship and rapport with them [suppliers] so when we had challenges, we told them, and they understood. Some of them [suppliers] were just giving us support and they are like pay when you can. So that support from suppliers, has really helped us to be able to leverage on them supplying us raw materials with turn around and when we get funds, we pay them." (Participant N) This finding is consistent with prior research which emphasize the importance of social relationships and connections in relation to developing organisational resilience (e.g., Gittell et al., 2006; Pal et al., 2014; Seville et al., 2015; Williams et al., 2017). For example, Lengnick-Hall and Beck (2005) stressed the importance of developing deep social fabric of goodwill and interpersonal relationships as these could protect organisations when disruptions occur and are thus, the foundation for developing contextual resilience. Similarly, Gittell et al. (2006), in their investigation of the resilience of the airline industry after the September 11<sup>th</sup> terrorist attack in the United States, found that airlines with strong relational reserves adjusted to the disruptions quicker and better than others. This finding is particularly important in the SME context, given that they lack resources especially financial capital (Vossen, 1998; Storey, 2010) and credit facilities could serve as an alternative source of funding business operations rather than relying on bank loans which are considered expensive by SMEs in the context of this study (Nigeria).

The literature also talks about two types of social capital (internal and external social capital) which are considered important in shaping the actions of organizations in the face of disruptions (Williams et al., 2017). The findings reveal that external social capital becomes particularly relevant when levels of uncertainty increase and urgent needs arise. One SME owner-manager commented on how ideas from her relational network outside the organisation have been useful in solving organisational problems:

"A few of us still come together you know if we can't meet physically, we meet by phone to exchange ideas. You know, it's like I'm going through this thing, I need help. What do I do? What do I do? So, everybody gives their opinion and you look at them, and you know, that is just the solution. Sometimes all you need is just a sounding board, and this is been really helpful. I remember so many times, even other people ask for help like that in the group." [Participant I]

#### 7.3.4 Affective Commitment

The findings further revealed that employee commitment to the organisation can foster organisational resilience. As one SME owner-manager noted:

"...we have a perfect scenario of certainly more than half, majority if I can put a percentage I would say 75% of my staff are committed. They call me and tell me things like; this competitor is coming up, this person is coming, oh they do it this way, let's not do it that way. It's a sense of ownership, they didn't just come to work and go through their emotions, it's like it's their business and that is the ultimate. When your staff has a sense of ownership and they treat it like their own, no matter what happens they will stand up for the company. For [Company name], it's been all about my staff." (Participant T)

This finding is also supported by research which found that affective commitment plays

a key role in the work behaviours of employees (Shum et al., 2008), organizational success (Gardner et al., 2011; Gong, 2009), and ultimately organizational resilience (Jaaron and Backhouse, 2015). A study by Meyer et al. (1998) shows that employees' affective commitment is crucial for organizations in times of disruptions.

Likewise, the findings reveal that organisations could mitigate threats and overcome disruptions by having employees who are willing to do everything within their means to ensure a viable future for the organisation. Some SME owner-managers commented thus:

"I remember one particular staff; I mean she was so committed you know, she went to the extent of taking things our raw materials on credit from suppliers just to keep the business going" [Participant I].

"...I have some very committed staff. Because they stood by me to see that everything is fine. They were bringing ideas and everything and we also had to now reshuffle staff to be multitasking, you have to do the job of two three people, you are in procurement doesn't mean you can't head events, and they were happy to work." [Participant N]

This resonates with the literature which advocates that it is only through a committed and creative workforce that an organization will be able to overcome disruptions and adversity (Pellissier, 2010). In fact, affectively committed employees have the ability and willingness to make extra efforts on behalf of their organisations and go an extra mile to protect operational stability (Mathieu and Zajac, 1990; Meyer and Allen, 1991). Day and Gu (2009), drawing upon the work of Fredrickson (2004) explained the mechanism

through which employees with positive emotions, such as affective commitment, can promote organizational resilience. They argue that these positive emotions are 'banked' and 'stored' and are able to function as reserves in time of adversity. This highlights the value of employees' affective commitment in terms of responding to organisational threats and disruptions and hence, contributing to organizational resilience.

7.3.5 Human Resource Management Practices

Although the findings of this study are limited in terms of drawing a direct relationship between HR practices and organisational resilience, they suggest that human resource management practices could play a key role in fostering organizational resilience in SMEs as SME owner-managers discussed how they use some HR practices such as training to build employee skills:

"First of all, our hiring process eliminate people who are far from excellence because we believe in excellence, that is our core value... Sometimes you take the best you can find and you shape them up so training is very important, training and re-training, training and retraining and not giving up on them." [Participant T]

More so, in recounting how SMEs could improve the poor skill levels and attitudes of employees, SME owner-managers further discussed a number of human resource practices such as recruitment of appropriate candidates, training, rewards and compensations etc. As one SME owner-manager stated:

"SMEs should be ready to at least above average invest in human capital then train them to suit you because these are the people that will help the company when problems come." [Participant H]

These findings are consistent with the extant HRM literature which consistently argue that the practices themselves do not constitute a source of competitive advantage; rather, competitive advantage and superior firm performance results from the human resources that are developed by the HR practices (Huselid, 1995; Patel et al., 2013; Wright, Dunford, and Snell, 2001; Wright et al., 1994).

Similarly, the findings resonates with prior organisational resilience research which highlights the importance of strategically managing human resources in building organizational resilience capability (Bardoel et al., 2014; Cooke et al., 2016; Huang et al., 2016; Lengnick-Hall et al., 2011). This growing stream of research has proposed a number of ways through which HR practices can influence organisational resilience. For example, Cooke et al. (2016), in a study of the banking industry in China, examined the role of high-performance work systems in developing employee resilience and the extent to which the organization benefit from them. Lengnick-Hall et al. (2011) theorize that HR systems could aid an organization's ability to build a capacity for resilience through developing its human capital.

Indeed, developing resilience capability necessitates the strategic management of human resources as the actions involved - anticipating the future, responding to change and disruptions, renewing business models, undertaking transformative activities, developing situation specific responses, increasing the capacity for learning and adaptation, capitalizing on opportunities and generating solutions to dynamic problems – are in actual fact human processes and depend heavily on the collective knowledge, skills, abilities, attitudes and behaviours of employees in the organization (Bell, 2002; Lengnick-Hall et al., 2011; Williams et al., 2017). However, the data is limited in explaining the relationships discussed here.

While these findings are consistent with existing literature on the antecedents to organisational resilience, the extent to which they influence the two distinct dimensions of organisational resilience: bounce back and bounce forward resilience, remains unclear. To address this gap and form a clearer basis for future theorizing as well as provide insights of practical implications, Study 3 explicitly distinguish between bounce back and bounce forward resilience and examined their antecedents and performance effects. Specifically, the study theorize that the two dimensions of organizational resilience are

influenced by distinct forms of organisational-level human and social capital, but both enhance firm performance. The findings of Study 3 are discussed in the next sections.

## 7.4 Antecedents to bounce back and bounce forward resilience

Organisational-level human capital classified into homogeneous collective human capital and heterogeneous collective human capital, were hypothesized as antecedents to bounce back and bounce forward resilience respectively. Hypothesis H1a posited that homogeneous collective human capital have a positive effect on bounce back resilience while Hypothesis H1b posited that heterogeneous collective human capital have a positive effect on bounce forward resilience. The results show interesting findings.

As expected, homogeneous collective human capital is positively and significantly related to bounce back resilience. This observation reinforces the notion that similarity in the knowledge, skills and abilities of an organization's employees limits organizational options in responding to disruptions and ultimately resorting to familiar procedures to build efficiency and eventually bounce back rather than bounce forward. Accordingly, homogeneous collective human capital results in shared and redundant knowledge and expertise which further leads to cohesion among organizational members, and the likelihood to adopt existing routines and organizational processes for efficiency and status quo (March, 1991) in the face of disruptions. The findings also reveal that heterogeneous collective human capital, positively influence bounce forward resilience. This supports the notion that diversity in the knowledge, skills, abilities and other attributes (KSAOs) of organizational members enhances the likelihood that they will seek novel ways of responding to disruptions and provide new growth paths when disruptions occur (Demmer et al., 2011; Lengnick-Hall et al., 2011). Heterogeneous collective human capital makes experimentation and opportunism, which are the hallmark of bounce forward resilience, possible (Lengnick-Hall et al., 2011).

Although the important role of human capital as valuable resources in the development of organizational resilience is highlighted and emphasized in related previous research (Akgun and Keskin, 2014; Demmer et al., 2011; Lengnick-Hall et al., 2011; Williams et al., 2017), Study 3 attempted to go beyond the broadly stated assertion by theorizing and providing evidence for the effects of homogeneous and heterogeneous collective human capital on bounce back and bounce forward resilience respectively.

Similarly, organisational-level social capital classified into bonding and bridging social capital were hypothesized as antecedents to bounce back and bounce forward resilience. Specifically, Hypothesis 2a posited that bonding social capital have a positive effect on bounce back resilience while Hypothesis 2b stated that bridging social capital have a positive effect on bounce forward resilience. Whereas the literature suggests a strong theoretical relationship between bonding social capital and bounce back resilience, this study found no support for such a positive effect of bonding social capital. A possible explanation for the non-significant relationship could be that trust among employees within an organization may be required to increase their willingness to engage in the exchange of information and ideas (Tsai and Ghosal, 1998), which will in turn, drive bounce back resilience. To fully understand this relationship, future research may examine whether additional characteristics of social capital, such as trust (Tsai and Ghosal, 1998), moderate the relationship between bonding social capital, such as trust (Tsai and Ghosal, 1998), moderate the relationship between bonding social capital and bounce back resilience.

However, the findings show that both bonding social capital and bridging social capital jointly drive bounce forward resilience. Although the positive effect of bridging social capital on bounce forward resilience is consistent with prior research which provides sound evidence that variety of knowledge, ideas and information play a key role in creativity and innovation (Perry-Smith and Shalley, 2003; Pérez-Luño et al., 2011; Shin and Zhou, 2007), it is interesting to find that bonding social capital is also positively 180

related to bounce forward resilience. A likely reason for this positive relationship could be that bonding social capital may be a prerequisite for the use of bridging social capital to benefit the organisation by enabling employees to integrate different ideas and perspectives to develop new growth paths by capitalising on opportunities that emerge from disruptions. As Adler and Kwon (2002) notes, bonding social capital facilitates cooperation, information sharing, and coordination of collective activities in organisations. Even though bridging social capital is important in building bounce forward resilience because the bridging relationships provide unique access to variety of information and knowledge as well as efficient search for new opportunities, it is essential for such diverse information and knowledge that is derived from external networks to be integrated through dialogue and negotiation (Carmona-Lavado, Cuevas-Rodríguez and Cabello-Medina, 2010; Nahapiet and Ghoshal, 1998; Pérez-Luño et al., 2011) or in fact, used effectively to exploit the opportunities identified and thereby, bounce forward. Bonding social capital might be beneficial in this respect as it promotes effective information sharing, knowledge integration and joint problem solving (Nahapiet and Ghoshal, 1998; Uzzi, 1996).

#### 7.5 Performance Effects of Bounce Back and Bounce Forward Resilience.

Bounce back and bounce forward resilience were each hypothesized to have positive effects on firm performance (Hypothesis 3a and 3b). Controlling for firm size, firm age, and industry type, bounce forward resilience has a positive and significant relationship with firm performance suggesting support for Hypothesis 3b. This is a significant finding that contributes to our understanding of the relationship between organizational resilience and firm performance. However, bounce back resilience was unrelated to firm performance. Therefore, Hypothesis 3a was not supported. A possible explanation for the non-significant relationship between bounce back resilience and firm performance could be that different environmental conditions (such as, environmental dynamism) may

moderate this relationship. Prior research has argued that environmental contexts can play a critical role in the effectiveness of different dimensions of organizational resilience (Boin and Van Eeten, 2013; Gilly et al., 2013; Lengnick-Hall and Beck, 2005). Accordingly, Gilly et al. (2013) argue that organizations need more than the capacity to bounce back in turbulent environment if they must survive and thrive. Hence, bounce back may thrive in relatively stable environmental conditions. Meanwhile, the environmental context of this study's location (Nigeria) at the time of the study (2016-2017) was considered highly turbulent due to heightened competition, abrupt changes in customer tastes and demands, and economic recession. Currently, the literature lacks empirical evidence on the nature of any moderating effects and how it affects firm performance. Therefore, to fully understand the relationship between both dimensions of resilience and firm performance, future research may examine whether different environmental contexts (such as environmental dynamism and environmental competitiveness) moderate the relationship between both dimensions of resilience and firm performance. The implications of the findings reported in this thesis are discussed next.

## 7.6 Theoretical Implications

Building on previous research and filling in gaps in the existing literature, the findings of this thesis makes several contributions to the literature. First, despite recent calls for more thorough investigation of organizational resilience, less attention has been given to systematically account for the antecedents to organizational resilience in the SME context, especially in developing countries (Annarelli and Nonino, 2016; Bhamra, Dani and Burnard, 2011; Kamalahmadi and Parast, 2016; Cooper et al., 2014). In this thesis, Study 1 adds to this stream of research by providing a framework for understanding the factors that contribute to SME resilience in Nigeria. Drawing on the RBV of the firm (Barney, 1991), the study identified two categories of factors that enable SME resilience

namely, tangible and intangible resources and capabilities. It is believed that the focus of Study 1 makes a distinctive contribution to the organizational resilience research domain as it offers an original perspective on the organizational theme of resilience in the Nigerian context characterised by unique economic and institutional challenges. Specifically, the study uncovered a set of variables – financial capital, human capital, social capital, affective commitment, human resource management practices – that can guide future research on this theoretically and practically important topic.

Second, although scholars have highlighted the importance of organizational resilience to the survival and success of organizations in today's turbulent and uncertain environments (e.g., Lengnick-Hall et al., 2011; Williams et al., 2017), the literature on the concept is highly fragmented (Lennenuecke et al., 2015) and there is no widely accepted definition of organizational resilience in the literature. In reviewing the definitions of organizational resilience from the existing literature, two dimensions of organizational resilience were found: bounce back resilience and bounce forward resilience. The literature review illustrates that most researchers have focused on bounce back in their definitions of organizational resilience, while bounce forward has been less included in their perspective. Vargo and Seville (2011) embraced indirectly the two dimensions of organizational resilience, as they referred to organizational resilience as the ability of an organization to not only survive but to thrive. However, as one central definition summarizing organizational resilience has not been published yet, the researcher used the insights gained from the literature review to formulate an overarching definition of organizational resilience which has some implications on the operationalization and measurement of organisational resilience:

Organizational resilience is an organization's ability not only to cope with and respond quickly to disruptions, but also to constantly renew its business model, and even capitalize on emerging opportunities in ways that aid the organization to survive and secure a successful future.

Rooted in this definition, this thesis further develops and validates a new organisational resilience measure which demonstrates that the construct comprises of two distinct dimensions: bounce back and bounce forward resilience. Although there are few existing measures of the construct (e.g., Mallak, 1998; Somers, 2008), these measures do not capture the bounce back versus bounce forward distinction and thus, do not correspond to the differing treatments of the construct in the literature. The newly validated organisational resilience measurement scale in this thesis addresses this gap in the literature as it reflects the focal construct domain precisely and provides a promising foundation for quantitative research on organisational resilience which is currently scarce (Bhamra et al., 2011; Linnenuecke et al., 2017). Specifically, the proposed definition and scale suggests new directions for theorizing the organisational resilience construct as the distinctiveness of the two dimensions implies that the resources and capabilities that enable bounce back resilience are different from those that foster bounce forward resilience (Eisenhardt and Martin, 2000).

Third, existing studies have generally theorized that organisational resilience can be enhanced by a single set of factors, thereby assuming that organisational resilience is a unidimensional construct. For example, Demmer et al. (2011) identified a set of capabilities that enable organizational resilience, and Pal et al. (2013) measured three broad resources that contribute to an aggregated sense of organizational resilience in the SME context. This current research provides the first empirical evidence for the multidimensionality of the organisational resilience construct. By drawing on the RBV and dynamic capability perspective, this thesis delineates the antecedents to bounce back and bounce forward resilience and compared their individual effects on firm performance. The findings demonstrates that while bounce back resilience depends on and requires human capital that is homogeneous in its content, bounce forward resilience rely on human capital that is heterogeneous in its content. In addition, while bounce back resilience has no relationship with firm performance, bounce forward resilience has a significant and positive relationship with firm performance. By providing these empirical evidences, this thesis suggests that a comprehensive understanding of organisational resilience would not be achieved without taking both dimensions of resilience into consideration, and thus, lay a solid foundation for future studies on organisational resilience to adopt a multidimensional perspective.

Fourth, the RBV postulates an organisation's possession of resources and capabilities that are valuable, rare, inimitable and non-substitutable in order to achieve superior firm performance and competitive advantage. However, the mere possession of resources and capability is a necessary but insufficient condition to achieve organisation's competitiveness and superior firm performance especially in uncertain and turbulent environments (Armstrong and Shimizu, 2007; Newbert, 2007; Pisano, 2017); instead, organisations must possess and use the right type of resources and capabilities to continually develop new capabilities – bouncing forward (Teece et al., 1997; Lengnick-Hall et al., 2011). Indeed, the type of resilience an organisation develops could form the basis for its performance benefits. As studies using the RBV falls short of identifying paths that increase competencies during environmental uncertainty and turbulence, this thesis contributes to the RBV literature.

## 7.6 Implications for practice

The findings from this thesis has substantial practical implications for organizational executives and SME owner-managers, specifically those in Nigeria. The two dimensions of organizational resilience and their antecedents provide a useful managerial guideline to building organizational resilience. The positive direct effects of the various facets of

organisational-level human and social capital on the two dimensions of organizational resilience should aid managers in the planning and development of organizational resilience. Organisations that aim to enhance their ability to recover from disruptive events (i.e., bounce back resilience) should focus on improving knowledge and skills required to meet current business needs. However, organisations that seek to capitalise on emerging opportunities and develop new capabilities for a viable future (i.e., bounce forward resilience) should invest seek to build a broader and more diverse repertoire of knowledge and skills among their employees.

More so, organisations seeking to develop bounce forward resilience should invest not only in improving bonding social capital but also bridging social capital. In particular, they should direct the attention of employees towards maintaining social relationships not only within the organisation (i.e., bonding social capital), but also across organizational boundaries (bridging social capital). Encouraging the establishment of strong relational ties of employees with suppliers, customers, or even competitors as well as with actors located in other institutions should be of significance for managers and in particular, SME owner-managers that aim to foster bounce forward resilience in their organizations. The bridging social capital provides different perspectives and information for novel solutions in the face of disruptions, while bonding social capital makes it possible for the different views to be discussed and debated in a collaborative manner.

Second, the findings that human capital are related to bounce back and bounce forward resilience suggests that organisations can foster either dimension of resilience by adopting HRM practices since these practices serve as the mechanism for building human and social capital. As Wright et al. (2001) argue, it is through the people management system that organisations influences the human capital pool and combination, and elicits desired employee behaviour. Moreover, organisations could develop HRM practices that help build both dimensions of human and social capital so that they are not only able to recover

from disruptions but also able to take advantage of emerging opportunities by developing new capabilities.

Third, the finding that the relationship between bounce forward resilience and firm performance is positive while the link between bounce back resilience and firm performance is non-significant offers an important practical implication. Organisations that hope for the performance benefits of organisational resilience should focus on developing bounce forward resilience.

Fourth, measuring organizational resilience is an important managerial insight that supports the knowledge and understanding of an organization in terms of managing disruptions. Managers can use the proposed scale to evaluate the level of their organisation's resilience. Consequently, the scale can influence managers in prioritizing the dimension of resilience that they need to develop.

#### 7.7 Limitations and Future Research

Despite the contributions and implications, the studies in this thesis have some limitations that provide meaningful direction for future research in this domain. First, although the collection of multisource data from each participating organisation provide valuable methodological contributions, some participants reported data on more than one study variables, resulting in issues of common method bias. However, the relationships reported in this thesis cannot be totally attributed to common method bias as the CFA results of the data for all three employee groups demonstrated the distinctiveness of the study variables. Moreover, the inclusion of several relevant control variables and the differential effects of the two dimensions of organizational resilience found on firm performance reduced concerns of common method bias. Nevertheless, future research may consider employing longitudinal designs to collect data.

Second, firm performance was assessed by subjective measures because of the difficulty associated with obtaining more objective measures of performance from SMEs (Gupta, 1987; Lubatkin et al., 2006). Although Wall et al. (2004) demonstrated that objective and subjective measures of firm performance are positively correlated and the latter has been utilised extensively in empirical research by various scholars (Collings et al., 2010; Demirbag et al., 2014; Glaister et al., 2018), this type of measure cannot be converted to a meaningful standard of measurement, such as the naira or pound increases associated with having high bounce forward resilience. Therefore, future research may assess firm performance using archival data or collect revenue data at two points in time (e.g., revenue data for 2 different financial years - Time 1 and Time 2 respectively) while controlling for firm characteristics such as firm size and age at Time 1 because of their possible association with the other variables - human and social capital, organisational resilience and firm performance (Time 2).

Third, the use of a cross-sectional design raises concerns of cause-effect relationships, as causality implies temporality. Likewise, how an organization's bounce back and bounce forward resilience tendencies developed over time has not been explored. Like other studies which use cross-sectional data to study orientation constructs (e.g., Cao et al., 2009), this thesis relied on the assumption that an organization's orientation in terms of bounce back and bounce forward resilience is quite stable over time. However, it would be useful for future studies to undertake longitudinal research that can more rigorously and precisely examine how bounce back and bounce forward resilience forward resilience evolve overtime, and the impact that such patterns have on short-term and long-term firm performance. This would help to better demonstrate the causal basis of the relationships reported in this thesis and in particular, help in drawing stronger conclusions on the causality of the relationships between the two resilience dimensions and firm performance. Such designs could also provide a more precise picture of how the distinct types of organisational-level

human and social capital unfold and influence bounce back and bounce forward resilience overtime.

Fourth, although this thesis provides new insights into organizational antecedents of the two dimensions of organizational resilience, the findings disclosed an unclear observation for the impact of bonding social capital on bounce back resilience, as H2a is not supported. This calls for further examinations of the influence of bonding social capital on bounce back resilience. Future research could examine boundary conditions and explicitly address the precise mechanisms through which bonding social capital influences bounce back resilience. An extension of the present study would be to examine the processes that govern how bonding social capital influence bounce back. Such additional investigations are likely to add to and enrich knowledge of how bonding social capital affect bounce back resilience.

Fifth, a vital and potentially stimulating area for further investigation will be identifying factors that influence the two dimensions of collective human and social capital, while empirically validating their effects on bounce back and bounce forward resilience. A promising avenue for future research will be connecting the literature on human resource management systems, policies, and practices (e.g., Becker, Huselid and Beatty, 2009; Lepak et al., 2006) with the model developed in this thesis. It is the strategic management of human resources which includes, human resource systems, policies, and practices that should shape the nature of an organization's human capital and social capital that influence the two dimensions of resilience and subsequent performance (Lengnick-Hall et al., 2011). Hence, future research may seek to examine how different human resource systems can lead to different forms of collective human and social capital which in turn, influence bounce back and bounce forward resilience. Examining these effects would be a natural extension of the model in this thesis and will potentially offer interesting and relevant insights.

Sixth, this thesis focused on relationships at only one level of analysis (i.e., organisational-level) as it examined human and social capital as organisational-level constructs, rather than individual-level constructs, that impact organisational resilience and subsequent firm performance. While such an approach is not uncommon for research in the business and management literature, future research should adopt a multi-level or cross-level perspective to provide a broader understanding of human and social capital as collective constructs (Ployhart et al., 2014; Payne et al., 2015) and the mechanisms through which individual-level human and social capital can influence organisational resilience and firm performance. Specifically, future studies could examine: to what extent does individual-level human and social capital affect organisational resilience and subsequent firm performance? What types of processes contribute to the emergence of the different forms of collective human and social capital? Does HR practices affect the emergence process of individual-level human and social capital? Does HR practices affect the amergence process of individual-level human and social capital? Does HR practices affect the amergence process of individual-level human and social capital? Does HR practices affect the amergence process of individual-level human and social capital? Does HR practices affect the amergence process of individual-level human and social capital? Does HR practices affect the amergence process of individual-level human and social capital into the various organisational-level constructs - homogeneous and heterogeneous collective human and social capital?

Seventh, while this thesis examined the performance consequences of the two dimensions of organizational resilience, it does not address the environmental conditions under which they influence firm performance. As discussed earlier, this seems to partly explain why the hypothesised relationship between bounce back resilience and firm performance was not supported. Therefore, it would be beneficial to conduct a large-scale quantitative research to better understand the moderating effects of environmental competitiveness and dynamism in the relationships between each of the organizational resilience dimensions and firm performance. Also, future research should develop a more fine-grained explanations and models that consider the mediators and moderators of the performance effects of the two dimensions of resilience. Prior research (e.g., Boin and Van Eeten, 2015; Lengnick-Hall and Beck, 2005) suggest that the performance effects of

different dimensions of resilience can differ substantially with environmental contexts and hence, under turbulent environmental conditions, bounce back resilience might produce different results. It could also be useful to investigate the effect of the two resilience dimensions on alternative performance measures such as firm survival as resilience is likely to be positively related to survival (Ho et al., 2014).

Eighth, a frontier condition for this thesis pertains to the generalizability of the findings beyond the population from which the sample SMEs were drawn. That the SMEs studied were based in Nigeria (a developing economy) is an important distinguishing characteristic of the sample. As a result, it is possible that the findings reported in this thesis may have been context specific given the unique challenges and institutional setting in which Nigerian SMEs operate. This raises a concern about the generalizability of the findings in other national contexts. Future research may seek to replicate this research using samples from other countries. Additionally, a comparative assessment of the antecedents and consequences of organizational resilience with samples of SMEs from developing and developed countries is an important research direction that could uncover whether context plays a significant role in the relationships among the variables. Such additional investigations are likely to add to and enrich the knowledge gained through the present thesis.

Ninth, while there are other relevant theoretical models that can be applied to simultaneously explain and analyse the antecedents and consequences of organisational resilience considered in this thesis, the researcher used a combination of the RBV and dynamic capability perspective. This is based on grounds that organisational resilience requires resources such as the knowledge, skills, and abilities of employees (i.e., human capital) as well as the knowledge residing and available through the interpersonal networks of employees (i.e., social capital) and the organisation's human and social

capital or human capabilities are considered the main sources of organisational resilience which in turn impacts on firm performance. More so, an integration of the RBV and dynamic capability perspective was aimed at addressing some of the shortcomings of the RBV discussed in the literature review section of this thesis.

An alternative theoretical model that could augment the RBV to explain the relationships depicted and examined in this thesis is the organisational learning theory. However, this theory was not used in the current research because learning is a variable included in human and social capital (Manuel and Blanco, 2018) and it is considered a dynamic capability that could also influence organisational resilience (Kayes, 2010). However, future research could integrate the RBV and organisational learning theory to further our understanding of the antecedents to organisational resilience and the processes connecting organisational resilience and firm performance. These two theoretical frameworks are particularly relevant as the RBV accounts for the importance of firm resources and capabilities, and their deployment to cope with disruption and/or take advantage of emerging opportunities (Barney, 1991) and organisational learning theory provides insights on how organisations develop capabilities to cope with the environment (March and Levitt, 1999). Since organisational learning is the foundation of the development of knowledge at the organisational level, it could help explain how organisations could develop their resource base to build resilience. Indeed, organisations can survive and grow in the face of disruptions based on advantages originating from resources and capabilities that represent collective learning (Nevis, Dibella, and Gould, 1995) such as homogeneous and heterogeneous human and social capital examined in this thesis. Furthermore, the literature on organisational learning theory generally discusses two types of organisational learning: single-loop and double-loop learning (Argyris and Schon, 1978) which are often labelled adaptive and generative learning (Senge, 1990) or exploitative and explorative learning (March, 1991) respectively. As single-loop learning hardly involves the questioning of values and tends to maintain the central features of an organisation's status quo, thereby leading to outcomes that are often short-term oriented, it could provide insights into the processes linking bounce back resilience and firm performance. Conversely, double-loop learning which emphasises the use of feedback from past actions to create a change that challenges the prevailing status of the organisation could help explain the effect of bounce forward resilience on firm performance.

Tenth, although various analyses were conducted to assess the validity of the newly developed organisational resilience scale in this thesis, initial assessments were based on data obtained from a limited sample of SMEs in the UK. Therefore, it would be worthwhile for future research to further assess the generalisability of the organisational resilience scale developed in this thesis to other business environments, for example, by testing the scale in other national settings.

## 7.8 Overall Conclusion

The goal of this thesis was to investigate the antecedents and performance effects of organisational resilience. All in all, this thesis highlights various theoretical and managerial implications by offering novel insights into the organizational resilience construct. This thesis not only provide a clear definition of organizational resilience based on a review of the existing literature but also conducted three main studies (Study 1, 2, and 3) to explore the factors contributing to organizational resilience capability building in SMEs, develop and validate a psychometrically sound organizational resilience measurement tool, and investigate the antecedents and consequences of organizational resilience respectively.

Study 1 empirically derived a framework of organizational resilience in SMEs that provides the foundation for subsequent research. This framework highlights the importance of both tangible and intangible resources and capabilities, which are in line with the RBV of the firm (Barney, 1991), in achieving resilience in the SME context. Factors such as, financial resources, human capital, social capital, affective commitment, and human resource management practices were key contributors to the resilience of SMEs sampled for Study 1. Study 2 extends the literature to develop and operationalize a new organizational resilience construct with two distinctive dimensions: bounce back and bounce forward. Establishing organizational resilience as a multidimensional construct widens our conceptual understanding of the concept and enables scholars to further adopt a contingency perspective to study organizational resilience and its effect on firm performance. Study 3 presented a unit-level approach to understanding the antecedents and performance outcomes of the two dimensions by pointing to the significance of the effects of different forms of organizational human and social capital on the two resilience dimensions and the impact of the resilience dimensions on firm performance. Hence, it improves our knowledge about the competencies required to achieve each dimension of resilience and subsequent performance effects.

While the findings supported most of the theorised relationships, two hypotheses were not supported. First, it turned out that bonding social capital does not yield a significant increase in bounce back resilience. It must be concluded that strong, densely connected relationships among employees within an organization (i.e., bonding social capital) does not provide value for bounce back resilience. This is a surprising result that contrasts the hypothesized relationship and the existing tone in the literature for organizations to strive for deep social capital in building resilience (Lengnick-Hall et al., 2011; Pal et al., 2014; Williams et al., 2017). However, existing studies do not separately consider the effects of bonding and bridging social capital on organizational resilience. In this thesis, the distinct investigation of the two dimensions offers a more detailed picture. It might be useful for future research to identify additional factors that could improve the effect of bonding social capital on bounce back resilience. Second, bounce back resilience was unrelated to firm performance. This non-significant relationship could be anchored on contextual conditions as discussed earlier. However, as theorised, homogeneous collective human capital positively related to bounce back resilience while heterogeneous collective human capital positively related to bounce forward resilience. Also, bonding and bridging social capital were jointly and positively related to bounce forward resilience. Lastly, bounce forward resilience positively related to firm performance.

These findings provide valued theoretical addition to the existing literature on organizational resilience. Organizational resilience was defined and unpacked into two distinct dimensions: bounce back and bounce forward resilience. Importantly, managers, will learn from the results that to achieve bounce forward resilience for instance, heterogeneous collective human capital is beneficial. On the other hand, organizations need homogeneous collective human capital to facilitate bounce back resilience.

Overall, this thesis not only provides empirical insights into the antecedents to organizational resilience in the SME context, but also provides a new measurement tool for the organizational resilience construct and offers novel theoretical and empirical insights into achieving the two dimensions of resilience and their related performance benefits. It is hoped that future studies will build on the findings of this thesis and address its limitations.

## **Appendices:**

Appendix A. Informed Consent Form for Study A

## INFORMED CONSENT FORM

RESEARCH TITLE: ORGANIZATIONAL RESILIENCE: AN EXAMINATION OF

## SMALL AND MEDIUM ENTERPRISES (SMEs) IN NIGERIA.

## Researcher: Tinkuma Ejovi Edafioghor

This form is for you to state whether you agree to take part in this study. Please read and

answer every question. For any clarification or more information, please do not hesitate

to ask the researcher

	Please tick the appropriate box	YES	NO
1	I agree to participate in this study		
2	I understand that my participation in this study is voluntary and I have the right to stop the session and withdraw from the research at any time without giving any reason.		
3	I confirm that I have read and understood the information sheet for this research and have had the opportunity to ask questions about the study.		
4	I understand that the information collected will be treated as strictly confidential and is only available to the researcher and her supervisors.		
5	I understand that the information collected will be treated anonymously. This means that my name, or any other information that could identify me, will not be included in any written reports or publications as a result of the research.		
6	I would like to be informed of the outcome of the research via a report summary, and be informed of any future publications.		

Signature:

Date

## Appendix B. Participant's Consent for Study 2

Thank you for agreeing to take part in this research project which focuses on "Resilience Capability Building in SMEs". You will be asked about your organisation and the employees. Please respond to each of the items in the questionnaire. For most of the items, you will need to determine the degree to which you agree or disagree by clicking in the appropriate circle. If you wish to change your response at any time before submitting your answers; simply click in the appropriate circle. Additional instructions to help you complete the questionnaire are provided in the questionnaire. Your responses are treated anonymously and confidentially. For further information or questions, please email Tinkuma Edafioghor at tee503@york.ac.uk or call +447459344572. To begin the survey, click Next.

Thank you for your time!

Appendix C. Participant's Consent for Study 3

## SMALL AND MEDIUM ENTERPRISE (SME) RESILIENCE SURVEY

Dear Sir/Madam,

This survey is part of a PhD research project developed by Tinkuma Ejovi Edafioghor under the supervision of Dr Qin Zhou and Professor Bob Doherty in the University of York.

The research aims to examine factors influencing organizational resilience capability in the context of small and medium size enterprises (SMEs). Most studies on organisational resilience have focused on large organisations and our knowledge of how SMEs develop resilience capability is limited.

Realizing the importance of SMEs in contributing to the industrial development of economies, it is important to extend the study of organisational resilience to SMEs. We believe that the research findings will provide insights on how SMEs can develop resilience capability and that information can be used to inform policy makers about the unique needs of SMEs, which will ultimately result in better assistance being received by SMEs.

Your opinion is very important, and I hope you will participate in this survey. Please note that participation is voluntary, and you can withdraw your participation at any time. It will take **about 20 minutes** to complete the questionnaire.

No one besides the researcher and the survey assistants will have access to your responses. And if results are used in academic publications, it will be done in a way that prevents identification of respondents.

All data will be treated in accordance with the Data Protection Act 1998 under which data handling procedures at the University of York are registered. Confidentiality of your data will be maintained at any time.

Should you require further information or any clarification, please do not hesitate to contact Mrs Tinkuma Ejovi Edafioghor at tee503@york.ac.uk

Yours Sincerely,

Tinkuma Edafioghor.

## Appendix D. Interview Guide (Study 1)

Themes and Interview Questions: Based on the nature of semi-structured interview, the order of the questions is flexible depending on the interviewee's responses. Probing questions were asked when necessary.

#### **General information**

- What is your position and your primary responsibility?
- How many employees does the company have?
- How many years has the business been in existence?
- What is the main activity of the business?

#### **Critical incident**

Points of discussion:

- Having been in business for years, you may have had some challenging experiences. Describe a critical incident or a severe disruption your organization experienced.
- How did this situation affect your company?
- How did the organisation overcome this challenge? What actions were taken to prevent the business from failing? What resources helped the organisation to sustain its operation? Did you receive any assistance or support from a third party? If yes, from where?
- Had the company anticipated this challenge prior to its occurrence? If yes, what was done? Did the company have any strategies or processes in place to prevent this from happening or at least, mitigate the impact on the company when it happened?

#### **Business Survival**

Points of discussion:

- In your opinion, what do you think are the reasons why some organizations in your line of business fail? What do you think would have helped such organizations to survive?

What are the main reasons your organization is still surviving? Could you describe what have

been the strengths of your organisation thus far, despite disruptions?

Is there anything else you think is important that has not been covered in this interview?

## Appendix E. Measures and Items at Firm-Level (Study 2)

## Bounce Back Resilience

Our organization is able to ...

- BBR1. Cope with disruptions
- BBR2. Mobilise resources to resolve complex problems.
- BBR3. Deploy resources in times of disruptive challenges to maintain normal operations.
- BBR4. Use alternative resources to sustain operations when disruptions occur.
- BBR5. Respond quickly to disruptive activities
- BBR6. Deploy resources to deal with disruptive challenges
- BBR7. Allocate resources within the organization to respond effectively to disruptions

### Bounce Forward Resilience

Our organization is able to ...

- BFR1. Identify opportunities from disruptive situations.
- BFR2. Take advantage of opportunities arising from disruptive situations.
- BFR3. Use opportunities in disruptive situations to develop new capabilities.
- BFR4. Use existing resources in new innovative ways to capitalize on new opportunities in disruptive situations.
- BFR5. Use disruptive situations as opportunities to develop growth paths in anticipation of possible changes in the environment.
- BFR6. Use disruptive situations as opportunities to develop new growth paths for a viable future.

Note. Eliminated items in an exploratory factor analysis are underlined

Appendix F. Measures and Items at the Firm-Level (Study 3)

Firm Performance (Delaney and Huselid, 1996)			
Compared to other firms that do this same kind of work, how would you rate your			
firm's performance over the past 3 years in terms of			
FP1. Quality of products or services			
FP2. Development of new products or services			
FP3. Satisfaction of customers or clients			
FP4. Satisfaction of employees			
FP5. Growth in sales			
FP6. Market share			
FP7. Profitability			

Bounce Back Resilience (Study 2) Our organization is able to ... BBR1. Cope with disruptions

BBR2. Respond quickly to disruptive activities

BBR3. Mobilise resources to resolve complex problems

BBR4. Deploy resources to deal with disruptive challenges

BBR5. Allocate resources within the organization to respond effectively to disruptions

Bounce Forward Resilience (Study 2)

Our organization is able to ...

BFR1. Identify opportunities from disruptive situations

BFR2. Use opportunities in disruptive situations to develop new capabilities

BFR3. Use existing resources in new innovative ways to capitalize on new opportunities in disruptive situations.

BFR4. Use disruptive situations as opportunities to develop growth paths in anticipation of possible changes in the environment.

BFR5. Use disruptive situations as opportunities to develop new growth paths for a viable future.

Homogeneous Collective Human Capital (Lepak and Snell, 2002)

Employees in our organization have skills that...

HCHC1. Are instrumental for innovations.

HCHC2. Help minimize costs of production, service, or delivery.

HCHC3. Enable our organization to provide exceptional customer service.

HCHC4. Contribute to the development of new market/product/service opportunities.

HCHC5. Directly affect organizational efficiency and productivity.

HCHC6. Enable our organization to respond to new or unexpected demands.

HCHC7. Are needed to maintain high quality products/services.

HCHC8. Are instrumental for making process improvements.

Heterogeneous Collective Human Capital – Diversity (Lepak and Snell, 2002)

To what extent do employees in your organization differ in their ...

DCHC1. Innovative skills

DCHC2. Ability to minimize production/service/delivery costs

DCHC3. Way of providing exceptional customer service

DCHC4. Contributions to the development of new market/product/service opportunities

DCHC5. Efficiency and productivity skills

DCHC6. Ability to respond to new or unexpected demands.

DCHC7. To maintain high quality products/services

DCHC8. Way of making process improvements

Bonding Social Capital – Internal (Subramaniam and Youndt, 2005)

Employees in our organization are ...

ISC1. Are skilled at collaborating with each other to diagnose and solve problems.

ISC2. Share information and learn from one another.

ISC3. Interact and exchange ideas with one another

ISC4. Apply knowledge from one area of the company to problems/opportunities that arise in another.

Bridging Social Capital – External (Subramaniam and Youndt, 2005)

Employees in our organization are ...

ESC1. Maintain personal contact with employees of other firms (e.g., suppliers) to develop solutions

ESC2. Obtain valuable information from employees of other firms.

ESC3. Learn from employees of other firms

Note. ESC2 and ESC3 were developed to represent bridging social capital based on the items for bonding social capital (Subramanian and Youndt, 2005).

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