2020

The impact of dynamic capabilities and time-based competitive advantage on SME performance: The role of organisational structure and entrepreneurial orientation

Muna Abdelhakim

THE IMPACT OF DYNAMIC CAPABILITIES AND TIME-BASED COMPETITIVE ADVANTAGE ON SME PERFORMANCE: THE ROLE OF ORGANISATIONAL STRUCTURE AND ENTREPRENEURIAL ORIENTATION

A thesis submitted in partial fulfilment of the
requirements for the award of the degree

DOCTOR OF PHILOSOPHY

from

UNIVERSITY OF WOLLONGONG

IN DUBAI

by

Muna Abdelhakim

Faculty of Business

2020

Certification

I, Muna Abdelhakim, declare that this thesis, submitted in partial fulfilment of the requirements for the award of Doctor of Philosophy, in the Faculty of Business, University of Wollongong in Dubai, is wholly my own work unless otherwise referenced or acknowledged. The document has not been submitted for qualifications at any other academic institution.

Signature: Muna Abdelhakim

Date: 8 August 2021

Abstract

The aim of this thesis is to examine how dynamic capabilities are used by small and medium-sized enterprises (SMEs) to increase performance. Specifically, it explores the mechanism by which the dynamic capabilities of SMEs affect firm performance through time-based competitive advantage. It also examines important factors that facilitate and enhance the deployment of SME dynamic capabilities, including organisational structure and entrepreneurial orientation. Data obtained from a sample that comprised 482 United Kingdom–based manufacturing and service SMEs were evaluated through a quantitative survey. Using partial least squares modelling, the analysis indicated the existence of a partial mediating effect of time-based competitive advantage on the dynamic capabilities and SME firm performance relationship. The analysis also identified a partial mediating effect of dynamic capabilities on the positive relationship between organisation structure (organicity) and time-based competitive advantage. An interesting finding was that, in the context of SMEs, an organisation structure that is more mechanistic in nature encourages greater time-based competitive advantage; however, in the presence of dynamic capabilities, an organic structure is preferred. This thesis discusses possible reasons for these results. Further, a partial mediating effect of dynamic capabilities on the positive entrepreneurial orientation and time-based competitive advantage relationship was also found. The moderating influence of organisation structure on the positive dynamic capabilities and time-based competitive advantage relationship was supported. However, the hypothesised moderating influence of entrepreneurial orientation on the positive dynamic capabilities and time-based competitive advantage relationship was not supported. This thesis has outlined the mechanism by which SMEs can develop dynamic capabilities and use them to generate greater time-based competitive advantage, as well as increase firm performance. It thus makes an empirical contribution to the emerging body of research on dynamic capabilities in the SME context. Several theoretical contributions and managerial contributions are also further outlined.

Acknowledgements

I would like to first and foremost, thank my alma mater, University of Wollongong in Dubai, which provided me with the opportunity to complete my doctorate. UoWD and its faculty have facilitated my critical thinking and enhanced my theoretical knowledge. Engaging with peers and with the faculty for discussions and debates has provided a unique perspective into my area of study: strategic management and dynamic capabilities.

Secondly, I would like to thank the support, guidance, and feedback provided by Professors Nick and Valerie. They were patient with me as I worked through the thesis and were supportive of the decisions I took during my research. They enabled me to produce a work that was academically rigorous and practically critical. Providing me with specific, line-by-line feedback, and suggestions - when I hit a roadblock - they spent time on my work and mentored me throughout this journey. I would also like to acknowledge Professor Munyar, who provided feedback that allowed me to strengthen my work further and Islam AlBadri for supporting me though out the submission process.

Thirdly, I would like to thank the father of my children, without whose continual support and patience, I would not have been able to complete this journey. My family stood by me through challenging times, whose support has been invaluable to me. I would also like to thank my children for being wonderful and patient throughout this journey.

Finally, I would like to acknowledge Capstone Editing who provided copyediting and proofreading services, according to the guidelines laid out in the university-endorsed national 'Guidelines for Editing Research Theses'.

Contents

List of Tables

List of Figures

List of Abbreviations

CFA: Confirmatory Factor Analysis

CRM: Customer Relationship Management

EFA: Exploratory Factor Analysis

ERP: Enterprise Resource Planning

EU: European Union

HOC: Higher-Order Construct

KMO Kaiser-Meyer-Olkin

LOC: Lower-Order Construct

MNE: Multinational Enterprise

PCA: Principal Components Analysis

PLS: Partial Least Squares

RAT: Resource Advantage Theory

RBV: Resource-Based View

ROE: Return on Equity

SEM: Structural Equation Modelling

SME: Small and Medium Enterprise

UK: United Kingdom

Chapter 1: Introduction

1.1 Background

In the past few decades, the concept of dynamic capabilities has attracted immense interest from researchers in the field of strategic management. The growing interest in this field is partly attributable to the ever-changing and uncertain business environment that continues to reinforce the need for achieving long-term business success and resilience (Hunt & Madhavaram 2019; Piening & Salge 2014; Prange & Verdier 2011). In this context, dynamic capabilities are considered a factor that, when well developed and deployed, can positively affect business practice, competitiveness and performance results (Fainshmidt et al. 2019; Reuter et al. 2010; Zhou et al. 2019). Leading researchers in dynamic capabilities literature (Eisenhardt & Martin 2000; Teece, Pisano & Shuen 1997; Wilden & Gudergan 2017; Wilden et al. 2013, 2019; Zollo & Winter 2003) acknowledge dynamic capabilities as a key factor that influences a firm's innovation, competitiveness and performance. Unlike ordinary capabilities, dynamic capabilities are unique to a particular firm because, unlike dynamic capabilities that are higher-order capabilities emerging from unique, inimitable resources of the firm, ordinary capabilities can be standardized as industry best practices as they are limited to specific tasks related to performance (Teece, 2007). They are also rooted in the organisation's history and are thus difficult to imitate (Helfat & Winter 2011; Hodgkinson & Healey 2011; Wilden et al. 2013, 2019).

Dynamic capabilities, as a relatively new concept in the field of strategic management, have been approached from different viewpoints. While some authors adopt content perspectives of dynamic capabilities (Najmaei 2010), others adopt process perspectives (Helfat et al. 2007). The presence of these diverse perspectives essentially highlights the rich and multidimensional nature of dynamic capabilities. However, it can be noted that most researchers have mainly approached dynamic capabilities from a process perspective. For example, Barreto (2010) and Pandza and Thorpe (2009) deconstruct dynamic capabilities into processes that entail searching, selecting, reconfiguring and deploying. Teece et al. (1997), who are credited with the advancement of dynamic capabilities theory, also proposed a 3P framework that comprises processes, positions and paths. Based on this framework, a firm's competitive advantage arises from managerial and organisational processes and is shaped by the firm's specific asset position and the available path.

Teece et al.'s (1997) framework has been criticised for focusing only on activities that a firm performs to achieve competitiveness while ignoring the way that such activities are performed. In later work, these scholars have improved their initial framework by explaining that dynamic capabilities arise from opportunity-sensing capacity, opportunity-seizing capacity and reconfiguration. Other authors have outlined similar approaches to dynamic capabilities—such as Helfat et al. (2007), who explained that dynamic capabilities arise from the capacity to search, select and deploy. Conversely, Barreto (2010) indicated that dynamic capabilities are evident when the firm can sense opportunities and threats and make timely decisions that are market-oriented.

In terms of the business environment, dynamic capabilities can be considered a theoretical answer to the question of how organisations in various industries are able to achieve and sustain high performance in changing or turbulent environments. Within this context, Teece et al. (1997) described dynamic capabilities from the perspective of a firm's ability to integrate, build and reconfigure its resources as a means of addressing rapid changes in the environment. Similarly, O'Reilly and Tushman (2008) contended that, through dynamic capabilities, firms could achieve continuous change that is vital to survival in rapidly changing and unpredictable environments. It is for this reason that dynamic capabilities are further considered a learned, path-dependent and stable pattern that can be effectively used to change a firm's ordinary capabilities (Eisenhardt & Martin 2000; Salvato & Vassolo 2018).

When in turbulent environments, firms face situations of continuous and substantial changes, which are mostly uncertain and unpredictable. Due to the difficulty of understanding such an environment, the firm must adopt flexible practices that allow for quick responses. As highlighted in various studies, the slow response to changes in the business environment is a leading cause of strategic drift—and this negatively affects the ability to remain competitive (Dwyer & Edwards 2009; Johnson et al. 2013; Matthyssens et al. 2005). Strategic drift, also known as strategic wear out, occurs when a once-successful firm fails to adapt to its changing environment. Put differently, a firm may over time fail to ensure that there is a fit between the adopted strategy and the needs of the marketplace. The importance of strategy and its effect on business performance was also highlighted by Roper (1999), who asserted that the choice of strategy affected how well the small business performed. In such a case, the organisation loses market share to other competitors who can better understand and respond to market needs (Ansoff 2016; Meek & Meek 2003). Dynamic capabilities have the potential to allow firms to respond effectively to such changes in the market.

1.1.1 The SME Context

Small and medium-sized enterprises (SMEs) in the United Kingdom (UK) are businesses that retain fewer than 250 employees (Rhodes 2019). Despite their smaller size, SMEs have performed an important role in economies worldwide in the past few decades. In an earlier report by the European Commission (2005), SMEs were found to constitute over 98 per cent of the enterprises in the European Union (EU) economy. Similarly, the proportion of SMEs in the United States (US) comprises 97.9 per cent of the total employer firms in the country (SBE-Small Business and Entrepreneurship Council 2017). SMEs have also led to employment and economic growth in rural regions in countries such as Canada, Scotland and the US (Freshwater et al. 2019). This expansiveness of SMEs signifies that they provide a higher rate of employment compared to large firms. Additionally, as sources of a skilled workforce, SMEs perform an important role in terms of creating a competitive industrial base in the country. These contributions are also well recognised in economic theories, which indicate that SMEs are engines of economic growth. This is evident because SMEs create jobs, spark competition in various industries and promote innovation and knowledge spillovers (Audretsch 2007; Memili et al. 2015; Roper & Hart 2013; Sahid & Hamid 2019).

SMEs in the UK are considered the primary contributors to the economy and form a large part of the business landscape. They have been identified as an enterprise category that is not only responsible for job creation but also innovation through the use of new business models. Statistically, it is estimated that by the end of 2019, SMEs have represented 99 per cent of all businesses in the UK. It is also estimated that they contribute upwards of 52 per cent of the overall turnover that is generated in the economy (Rhodes 2019). Further, SMEs in the UK have employed more than 60 per cent of the total workforce in the UK.

It can be noted that although information technology has been a key driver of SME growth, most enterprises fail to adopt advanced enterprise-level ICT systems, such as enterprise resource planning (ERP) and customer relationship management (CRM), which can play an important role in enhancing competitiveness (Ashrafi et al. 2014; Gërguri-Rashiti et al. 2017; Sharpe & Schroeder 2016). These are considered to be ordinary capabilities with other examples of SME's dynamic capabilities, including relationship management, technological knowledge, and strategic visions (Kuuluvainen, 2012). A study by the World Bank (2015) also discovered that a significant number of SMEs are unaware of where they can find opportunities (e.g., participation in public procurement). This suggests that even in the presence of support for SMEs, inadequacies within the firm make it difficult to compete effectively.

Externally, SMEs also encounter numerous forces that influence their growth and competitiveness. One leading challenge pertains to the ability to obtain funding from financial institutions. It was recently reported that banks in the UK treat SMEs unfairly in comparison to larger firms, and that SMEs thus face barriers to obtaining enough funding: an estimated 90 per cent of SMEs in the UK felt that banks do not provide them with funding readily (Basul 2020). Further, increased risk aversion among lenders since the global financial crisis of 2008–2009 signifies that most SMEs cannot obtain funding through conventional debt instruments (Fernández & Ali 2015; Waked 2016). Bankruptcy laws in the UK are considered overly harsh for SME owners and threaten the survival of SMEs. Like other SMEs worldwide, SMEs in the UK also face the challenge of a tough business environment. In light of these internal and external issues, one of this thesis's goals pertains to determining how SMEs can use dynamic capabilities to achieve better performance.

1.1.2 SMEs and Dynamic Capabilities

SMEs are confronted with numerous challenges and factors in their business environment that affect their level of competitiveness and, consequently, their survival in the industry. At the social level, SMEs are under pressure to keep track of changes in consumer tastes and preferences, as well as respond with the right products (Chittithaworn et al. 2011; Sidik 2012). Technological factors have further been identified as a major external force for SMEs. Although technology has enabled products to be made at low cost and marketed more effectively through innovations such as the internet (Dibrell et al. 2008; Parida et al. 2012), rapid changes in technology entail that SMEs must constantly reinvent themselves. Legally, SMEs must adapt to changing legal requirements in areas such as collection and use of consumer data, as well as to legal issues on aspects such as copyright, privacy, trust and security (Pearson & Benameur 2010).

Numerous researchers (Drnevich and Kriauciunas, 2011; Prange and Verdier, 2011; Lin and Wu, 2014; Girod and Wittington, 2017; Ko and Liu, 2017) argue that dynamic capabilities will help organizations perform better. Though much research has been conducted on the effect of dynamic capabilities on organizational success, little emphasis has been directed to recognizing the value that dynamic capabilities add to SMEs (Alarcon et al., 2018; Eikelenboom and Jong, 2018). This value development is critical for SMEs, as they face the demand from globalisation and fierce rivalry from larger MNEs to increase their productivity by value creation (Karaev et al., 2007; Castiglioni et al., 2015). Schilke et al. (2018) conclude that dynamic capabilities can be seen as the primary source of value development since they allow companies to recognise business opportunities/threats and exploit/neutralize them through the use of their resources

and capabilities (Teece, 2018). Due to the limited financial, technological, and managerial capital available to SMEs to invest in research and development and highly integrated systems/technologies (Brouthers et al., 2015), dynamic capabilities will assist SMEs in monitoring the setting, recognizing the marketplace, and generating and seizing opportunities (Eikelenboom and Jong, 2018). Thus, researchers studying SMEs (Altinay et al., 2016; O'Dwyer and Gilmore, 2018) have been increasingly keen to investigate whether certain SMEs generate more value than others. Numerous studies have argued that dynamic capabilities can allow SMEs to seek out and capture new concepts, as well as combine and align their capital and capabilities in order to generate value (Ngugi et al., 2010; Ko and Liu, 2017; Scuotto et al., 2017; Mennens et al., 2018).

In this context, it is expected that SMEs with well-developed dynamic capabilities can more effectively manage the opportunities and threats that arise from uncertainty in the external environment. Additionally, dynamic capabilities are likely to ensure that firms build internal processes that are commensurate with the firm's growth needs. However, a review of the existing literature indicates a dearth of comprehensive research that focuses on the nature of the relationship between dynamic capabilities and SME time-based competitiveness and firm performance. There are several dimensions of competitive advantage: differentiation strategy, cost leadership (Porter 1980) and time-based competitiveness (Lakhal 2009; Zhou et al. 2009). The significance of time in strategic management and competitive advantage has been well established (Ferrier 2001). In the context of SMEs, time-based competitive advantage can enhance the timeliness of market reactionary actions (Eisenhardt 1989; Laamanen & Keil 2008), increase the innovation speed (Shan et al. 2016) and reduce product lead time (Vessey 1991)—all of which can influence the firm's performance.

The influence of moderating variables must also be investigated (Hernández-Linares, Kellermanns & López-Fernández 2020). Moderating variables affect the strength of the relationship between the dependent and independent variables. For example, the type of organisational structure adopted by the SME may influence how well a firm uses its dynamic capabilities to respond to changes in the industry and, consequently, their impact on time-based competitive advantage. More importantly, there is a lack of consensus regarding whether SMEs can develop dynamic capabilities and use them to enhance their time-based competitiveness and performance. Therefore, it will be valuable to evaluate the moderators of the relationship between dynamic capabilities and time-based competitive advantage.

It has been argued that dynamic capabilities must be developed over a relatively long time (Teece et al. 1997). This proves difficult for SMEs, as most are young and perceived to lack dynamic capabilities due to their limited competencies in resource bundling and deployment. Additionally, some authors have argued that SMEs do indeed have the capacity to develop and benefit from dynamic capabilities (di Stefano et al. 2014).

1.2 Research Issues

As evidenced in the existing literature, previous research recognises that dynamic capabilities may positively influence competitive advantage and firm performance (Eisenhardt & Martin 2000; Teece et al. 1997; Wilden et al. 2019; Zollo & Winter 2003). However, there is a lack of empirically grounded evidence that comprehensively supports these relationships between dynamic capabilities, time-based competitive advantage and firm performance in the context of SMEs. Winter (2003) argued that many firms engage in learning, experimenting and creating new solutions without the need to rely on dynamic capabilities. In short, firms can still achieve competitive advantage even in the absence of dynamic capabilities. Although learning and experimentation may lead to the formation of new dynamic capabilities, some authors (e.g., Zollo & Winter 2003) have argued that the resulting changes could occur as a single event of creative problem-solving. The new capabilities may thus not be considered dynamic, in that they are not path dependent nor developed over the time.

SMEs, unlike their larger counterparts, could also face unique difficulties in terms of remaining competitive. For example, both small and large organisations have access to innovation-enabling technologies (Sawers et al. 2008). However, it could be argued that the average success rate of innovative efforts for SMEs is much lower compared to larger firms (Gassmann & Keupp 2007). This limited success can be attributed to the high risk levels, uncertainty and complexity that typically characterise innovative processes. Due to their 'liability of smallness', SMEs cannot effectively manage these problems (Gassmann & Keupp 2007). For example, most SMEs have limited access to adequate financial resources, they lack high-level managerial and technical competence and they tend to approach activities such as innovation from a less structured approach (de Toni & Nassimbeni 2003; Grando & Belvedere 2006). Therefore, it is necessary to determine further how SMEs can overcome these obstacles from a dynamic capabilities perspective.

Some studies have adopted a contrary view regarding the ability of SMEs to compete with larger organisations, specifically in relation to the exploitation of resources as part of dynamic capabilities. For example, it has been argued that SMEs, by their nature, have a higher inclination

to take risks, are less bureaucratic and more quickly respond to changes in market demands compared to larger firms (Christensen et al. 2005; Stam & Elfring 2008). The implication in this argument is that SMEs are better placed to develop dynamic capabilities in comparison to larger firms. From a critical perspective, this view somewhat overlooks certain fundamental aspects, such as availability and the effects of resources and competence on the SMEs' strategic practices. Essentially, resources and competencies play a critical role in the ability to seize existing opportunities and reconfigure resources, as evident in dynamic capabilities literature (Teece 2007; Teece et al. 1997). Taken together, these aspects reinforce the need to undertake a deeper investigation of how SMEs develop and use dynamic capabilities to achieve competitiveness and a better firm performance (Arend 2014; Hashim et al. 2018; Swoboda & Olejnik 2016).

From another perspective, other research has proposed that an effect of building dynamic capabilities is achieving sustainable competitive advantage (Wang & Ahmed 2007). Undoubtedly, sustainable competitive advantage is long term in nature, in the sense that a firm can benefit from it over an extended time. In regard to the dynamic environment in which SMEs operate, some authors have suggested that achieving a sustainable competitive advantage may not always be possible (D'Aveni et al. 2010). Due to frequent changes in both the internal and external environment, firms may be better placed if they seek a series of short-term advantages. In brief, the focus for SMEs should be on ensuring that their products continuously satisfy their customers in what can be termed as a temporary advantage (Sirmon et al. 2010). As mentioned earlier, firms that continue to rely on old sources of competitive advantage could experience a decline in their sense-making capabilities. In turn, such firms are unlikely to actively search for new information that can be used to better understand new customer needs. Overall, it is evident that there are mixed views in regard to whether dynamic capabilities should be used to provide long-term competitive advantages or a series of short-term competitive advantages. Therefore, it is important to offer more insights into this area by investigating how SMEs use dynamic capabilities to build time-based competitive advantage and how long they can sustain such advantages (Lie et al. 2013).

As mentioned previously, several researchers have suggested that rather than benefitting from dynamic capabilities, SMEs could, in some instances, experience negative outcomes (Arend 2013). While offering further views on this subject, Tallon (2008) indicated that the development of dynamic capabilities often consumes a significant amount of SME resources. These resources may ultimately be wasted when the firm's management is unable to incorporate the dynamic capabilities into its existing internal processes. In agreement, Chaston (2015) attested that in

this absence of effectively incorporating dynamic capabilities into internal processes, a firm fails to achieve targeted benefits, such as the development of new or improved products. Drnevich and Kriauciunas (2011) also contended that dynamic capabilities are often complex and require extensive large-scale management. SMEs are not only disadvantaged in terms of handling the complex requirements, but they could also experience unnecessary changes in their structures. Each of these aspects questions the role that dynamic capabilities play in relation to increasing the performance of SMEs. Although some studies have focused on SME dynamics capabilities and the effects on performance (e.g., Ates et al. 2013; Inan & Bititci 2015), there is little to no exploration of the mechanism through which dynamics capabilities affect time-based competitive advantage and allow firms to achieve higher firm performance (one of the first studies to underpin time-based competitive advantage in dynamic capabilities theory was Bridoux et al. 2013). The present study attempts to bridge this research gap.

The aim of dynamic capabilities research is to explicate competitive advantage sources (Teece 2007; Teece et al. 1997). Thus, firm success is a key element of the theory and is often seen as the primary goal of dynamic capabilities. Dynamic capabilities alter ordinary capabilities or the firm's larger resource base, which may eventually result in a shift in efficiency. There has been criticism of tautology in describing companies with superior output and thereby attributing their performance to the firms' dynamic capabilities (e.g. Priem and Butler 2001; Williamson 1999). To mitigate this possibility, some researchers have proposed that dynamic capabilities be measured in terms of the adjustments they cause to a firm's resource base (Eisenhardt and Martin 2000; Teece 2007; Zahra et al. 2006). Such modifications can or may not result in an improvement in firm efficiency. Thus, possessing dynamic capabilities would not often result in increased efficiency; rather, performance results are contingent upon the consistency of the ordinary capabilities altered by the dynamic capabilities (Zahra et al. 2006) and the evolutionary fitness of those capabilities (Helfat et al. 2007). Superior dynamic capabilities alone cannot often translate into superior performance if operational capabilities are significantly deficient.

In addition to dynamic capabilities, another factor that is crucial for SME firm performance is time-based competitive advantage. One of the primary challenges that SMEs have is that they have minimal resources which they need to use in a time-sensitive manner to ensure that they are surviving in a highly competitive global economy (Sirén, et al., 2020). While other forms of competitive advantage exist and have shown to have significant benefits for firm performance, time-based competitive advantage has emerged as one of the most important factors for SMEs (Sirén, et al., 2020; Zhou et al., 2009). With Porter's (1980) paradigm serving as the philosophical foundation for time-based competitive advantage, time-based competitiveness can be thought

of as a type of differentiation technique that results in companies achieving increased responsiveness and tempo, which they can use to obtain a competitive advantage. According to Zhou et al. (2009), time-based competitive advantage is essential for companies to gain a multi-competitive edge. This is not possible with a cost leadership or a differentiation strategy, as in the current global competitive market, firms that respond quickly and have a shorter lifecycle will be able to achieve higher market success and thus increase their firm performance (Blackburn 1991; Sirén, et al., 2020; Wheeler et al. 2007). When companies achieve a time-based competitive advantage, they compress time (particularly for manufacturing firms) and increase their rate of innovation and production capacity, as time enables them to achieve several competitive advantages (Jenssen 2003; Vonderembse & Koufteros 2003). Since SMEs work in a relatively uncertain environment and face intense competition, establishing this form of time-based competitive advantage is crucial. In a world of increasing competitiveness and market velocity (Carrillo, 2005; Nadkarni & Narayanan, 2007), how an organization dispenses and utilizes its capital resources on a time scale is crucial (Hassard, 1991; Hellström & Hellström, 2002; Stalk & Hout, 1990). Despite the fact that time is vital for SMEs with limited resources (Rosenbusch, Brinckmann, & Bausch, 2011), strategic management research has paid little attention to the impact of resource management on development., which makes it important to be studied in the present research.

1.2.1 The Potential Role of Organisational Structure and Entrepreneurial Orientation

Another key area that has yet to receive adequate attention in current research pertains to the factors that facilitate and enhance the relationship between dynamic capabilities, competitiveness and firm performance. According to Wilden et al. (2014), there is a general consensus that firms with well-developed dynamic capabilities are characterised with stronger performance compared to firms that lack such capabilities. However, these scholars emphasise how it cannot be assured that dynamic capabilities directly contribute to the expected positive results in competitiveness and firm performance. Shamsie et al. (2009), in accordance with this view, argued that an improved firm performance is not solely dependent on the simple presence of dynamic capabilities. In other words, the context within which dynamic capabilities are deployed are of importance as they influence not only firm performance, but also competitive advantage.

One factor that this thesis seeks to investigate pertains to organisational structure. In an early definition, organisational structure was defined as the sum total of the ways in which a firm categorises labour into distinct tasks and then achieves coordination between such tasks

(Mintzberg 1979). This thesis's interest in the influence of organisational structure originates from existing research that has indicated that a firm's structure may influence its ability to respond to change (Jogaratnam & Tse 2006). Dynamic capabilities are essentially related to making appropriate changes based on internal and external business forces. In this context, contingency theory indicates that an organisation's present structure often creates constraints that bar the effective running of the firm. Accordingly, a strategic firm must respond by modifying its existing structure. The effective modifying of the organisation's structure as an endogenous design variable helps in the process of responding to exogenous context variables (e.g., intense competition) and thus in achieving better performance (Wilden et al. 2013).

A key contention in the context of organisational structure is whether SMEs are better suited to developing dynamic capabilities through mechanistic or organic structures. These two types of organisational structure, which form the basis of this thesis, operate at opposite ends of the organisational spectrum. Firms that use mechanistic structures are characterised by aspects such as centralised decision-making, tight control of information flow, conformance to formal rules and the presence of elaborate reporting structures (Kessler, Nixon & Nord 2017). In contrast, firms that operate with organic structures are characterised by decentralisation in the decision-making process, less emphasis on formal rules and procedures and the embracing of open communication and adaptation (Burns & Stalker 1961; Kessler, Nixon & Nord, 2017). By focusing on SMEs, this thesis seeks to establish whether organisational structure moderates the relationship between dynamic capabilities, time-based competitive advantage and firm performance. Although the typical SME is regarded as being based on an organic structure (Li & Zhang 2005), there is a paucity of research that determines whether the organisational structure adopted by the SME influences the development and deployment of dynamic capabilities.

The fundamental argument that entrepreneurial orientation literature posits is that firms with an entrepreneurial orientation behave much differently from other firms (Covin & Slevin 1989; Lumpkin & Dess 1996; Richard et al. 2004; Wolff et al. 2015). Based on Miller's (1983) original conceptualisation, entrepreneurial firms are characterised by three main characteristics: risk-taking, innovativeness and being proactive. In brief, a firm is considered to have a propensity for risk-taking if the owner or manager is willing to take calculated business risks (Cai et al. 2014). Covin and Slevin (1989) further affirmed that entrepreneurial orientation is demonstrated by firms that exhibit a pioneering pattern of decision-making during uncertainty that reflects risk at a greater level than that depicted by a conservative firm.

Innovativeness is evident when a firm is keen to create new products and processes (Covin & Miles 2006). Some common features of innovative firms include creativity, experimenting (in regard to introducing new products/services) and seeking novelty in the approach to undertaking business activities (Lumpkin & Dess 2001).

Last, proactivity describes the initiative to take the lead in relation to competitors. A proactive firm is also keen to perceive and seize business opportunities (Covin & Slevin 1989). In this thesis, entrepreneurial orientation is investigated in relation to how it influences the formation of dynamic capabilities among SMEs. Entrepreneurial orientation in this thesis is regarded as a behavioural action that could explain how SMEs develop dynamic capabilities. This is based on prior research conducted by Lawson and Samson (2001) and Zahra et al. (1999), who indicated that firms with entrepreneurial practices can have the necessary instrumental push for knowledge to circulate and be transferred within the organisation—which, in turn, would lead to fostering organisational dynamic capabilities. Therefore, although research has already acknowledged that entrepreneurial orientation influences the development of dynamic capabilities, the collective influence of entrepreneurial orientation, dynamic capabilities, time-based competitive advantage and organisation structure on SME firm performance has not yet been studied.

1.3 Research Aim and Questions

In light of the important role that SME performance plays as an engine of economic growth, this thesis seeks to critically investigate the mechanisms by which the dynamic capabilities of SMEs can be developed to improve SME firm performance. The research questions are as follows:

1) Does time-based competitive advantage mediate the relationship between dynamic capabilities and SME firm performance?
2) Do dynamic capabilities mediate the relationship between organisation structure (organicity) and time-based competitive advantage?
3) Do organisation structure (organicity) and entrepreneurial orientation play a moderating role in the relationship between dynamic capabilities and time-based competitive advantage?

1.4 Research Objectives

Based on the research questions listed above, this thesis seeks to provide theoretical and empirical answers to the following objectives:

1) to investigate the mediating influence of time-based competitive advantage on the relationship between dynamic capabilities and SME firm performance
2) to investigate the mediating effect of dynamic capabilities on the relationship between organisation structure (organicity) and time-based competitive advantage
3) to investigate the moderating influence of organisation structure (organicity) and entrepreneurial orientation on the relationship between dynamic capabilities and time-based competitive advantage.

1.5 Overview of Research Methodology

To generalise the study results across a large number of SMEs, this thesis uses quantitative research methods. Therefore, it uses numerical, survey-based data that has been analysed using statistically based methods to reach conclusions regarding whether dynamic capabilities significantly influence SMEs' time-based competitive advantage and firm performance. In addition to allowing the study's findings to be generalised, quantitative methods were preferred because they allow for hypothesis testing. In line with the preference for quantitative methods, this thesis's study primarily used the deductive research approach. With this approach, the researcher seeks to collect and analyse data to test existing theories and thereby support existing theoretical claims or disapprove them in light of new information. As noted previously, to the best of the researcher's knowledge, the mechanisms by which dynamic capabilities affect SME firm performance and an understanding of those factors that facilitate and enhance SME dynamic capabilities have yet to be studied. Focusing on these areas, this thesis employed a deductive research approach to test the existing dynamic capabilities theory.

With the choice of quantitative research methodology, this thesis used a survey questionnaire as the sole data collection tool. To enhance the quality of the study's findings, the questionnaire was developed using measures from existing and validated studies. The research population of interest comprised owners and managers of SMEs who had a good understanding of the firm's operations, especially in relation to strategy and performance. The participants in the study were randomly sampled from various SMEs in the UK manufacturing and services sectors. The control variables in the study included technological turbulence, environmental dynamism, firm size (employee number and sales turnover), the age of the firm and the industry to which it belonged (manufacturing and services). The statistical analysis used several tests, such as exploratory factor analysis and partial least squares based structural equation modelling (SEM). The methodology section provides details of the steps that were taken to ensure a reliable and

valid study, which includes Cronbach's alpha and an examination of normality and multicollinearity.

1.6 Scope of the Study

This thesis analysed the effect of dynamic capabilities on time-based competitive advantage and SME firm performance. The thesis's study was limited to firms that can be categorised as SMEs, based on guidelines in the UK that used the OECD definition of firms (i.e., fewer than 250 employees) (OECD 2005). Firms that possessed more than 250 employees fell outside the accepted characteristics of SMEs and were thus excluded from the study. The relationship between dynamic capabilities and time-based competitive advantage and firm performance was also examined in a model that included organisational structure and entrepreneurial orientation as moderating variables. Existing literature has identified several organisational structures, including bureaucratic, functional, divisional, matrix and network organisations (Daft 2007; Jones & Jones 2010). The present study considered only the basic classification of organisational structure—that is, on a spectrum of organic or mechanistic structure. This classification accounts for aspects such as the centralisation or decentralisation of decision-making, the level of adherence to formal rules, the level of control over information flows and the extent to which elaborate reporting structures are used (Wilden et al. 2013).

Various authors have also identified numerous dynamic capabilities (Borch & Madsen 2007; Villar et al. 2014; Wang & Ahmed 2007). However, this research applies a concept of dynamic capabilities that is based primarily on the classification/model that Teece et al. (1997) posited. The model, as highlighted earlier, identifies three classes of dynamic capabilities: sensing, seizing and reconfiguration capabilities. Firms with sensing capabilities are able to scan, search and explore activities across markets and technologies that can either result in opportunities or threats for the firm. To establish whether a firm has sensing capabilities, it is important to identify whether the firm maintains close relationships with key stakeholders (e.g., customers, suppliers and research and development [R&D] partners) and the extent to which best practices in the industry are followed (O'Reilly & Tushman 2008). Seizing capabilities are evident when the firm can evaluate existing and emerging opportunities and make relevant investments in certain aspects, such as technology and design so that it can benefit from the opportunities. Last, reconfiguration capabilities can be determined by examining whether a firm can recombine its resources and operating capabilities as a response to changes in its environment. Such capabilities are required as the enterprise continues to grow and become exposed to new challenges (Helfat & Winter 2011; Teece 2007).

1.7 Significance of the Study

Theoretically, this thesis furthers dynamic capabilities research in the context of SMEs and contributes to a growing body of research by empirically evaluating the mechanisms by which the dynamic capabilities of SMEs can be developed to improve SME firm performance. Further, the thesis's research identifies the role that organisational structure and entrepreneurial orientation play in the relationship between dynamic capabilities and time-based competitive advantage. In addition to adding to the growing body of research, this study also makes several novel contributions by studying relationships that have not been studied before. Finally, this study identifies that time-based competitive advantage serves as a mechanism through which dynamic capabilities can influence SME firm performance.

Practically, this research outlines that time-based competitive advantage serves as an antecedent to enhanced SME firm performance. Moreover, this thesis also explores the role that organisation structure can play and how SMEs can benefit from an organic structure while developing dynamic capabilities.

1.8 Thesis Structure

This thesis comprises five main chapters. Chapter 2 provides a theoretical framework for the study by reviewing key literature on the topic. It also identifies key gaps in the existing literature that the researcher will try to fill, as well as other areas that could benefit from additional insights. Chapter 2 comprises six subsections, which include reviews of the literature on dynamic capabilities, organisation structure, entrepreneurial orientation, time-based competitive advantage and SME firm performance, and a conclusion.

Chapter 3 presents the conceptual framework that underpins this research and the supporting hypotheses. The conceptual framework graphically depicts the direction of the proposed relationships between the study's key variables (dynamic capabilities, organisation structure [organicity], entrepreneurial orientation, time-based competitive advantage and SME firm performance). Most importantly, this chapter advances the study's hypotheses by presenting numerous mediating and moderating hypotheses.

Chapter 4 constitutes the study's research design and methodology section. It provides a detailed discussion of the factors that were considered during the preparation for and process of data collection and analysis. In terms of specific content, this chapter:

- provides a rationale for the choice of research method (quantitative or qualitative)

- justifies the survey research technique that was chosen
- discusses the methods that were used to facilitate the distribution and collection of the survey questionnaire
- provides details pertaining to the research population and sampling
- illustrates the processes that were followed in developing the research instrument
- indicates the data analysis techniques that were applied.

The various measures that were undertaken to ensure that the study met ethical standards are also discussed in this chapter, including the use of cover letters, consent forms and measures that guaranteed confidentiality and anonymity. The selection of methods is also supported by a relevant review of research methodology literature.

Chapter 5 provides a detailed analysis of the collected data. The data in this chapter are presented in the form of descriptive and inferential statistics, which are displayed through graphs, charts and tables. The chapter outlines the results of the exploratory factor analysis and preliminary analyses that were undertaken in the process of data preparation. Following this, the chapter presents the results of confirmatory factor analysis and hypothesis testing. The chapter also outlines the internal consistency, composite reliability, and convergent and divergent validity of the model that was developed.

The analysis is followed by a discussion of the results and conclusion in Chapter 6. As part of the discussion, key findings are elaborated and evaluated for their consistency or inconsistency with prior studies (as reviewed in Chapter 2). An interpretation of the results and the likely reason for obtaining them are also presented. This chapter outlines the theoretical, managerial and methodological contributions of the present study. It also discusses the implications of the findings for SMEs and offers relevant recommendations. Additionally, the chapter outlines the limitations of the present research and provides directions for future research. Figure 1.1 illustrates the outline of the thesis.

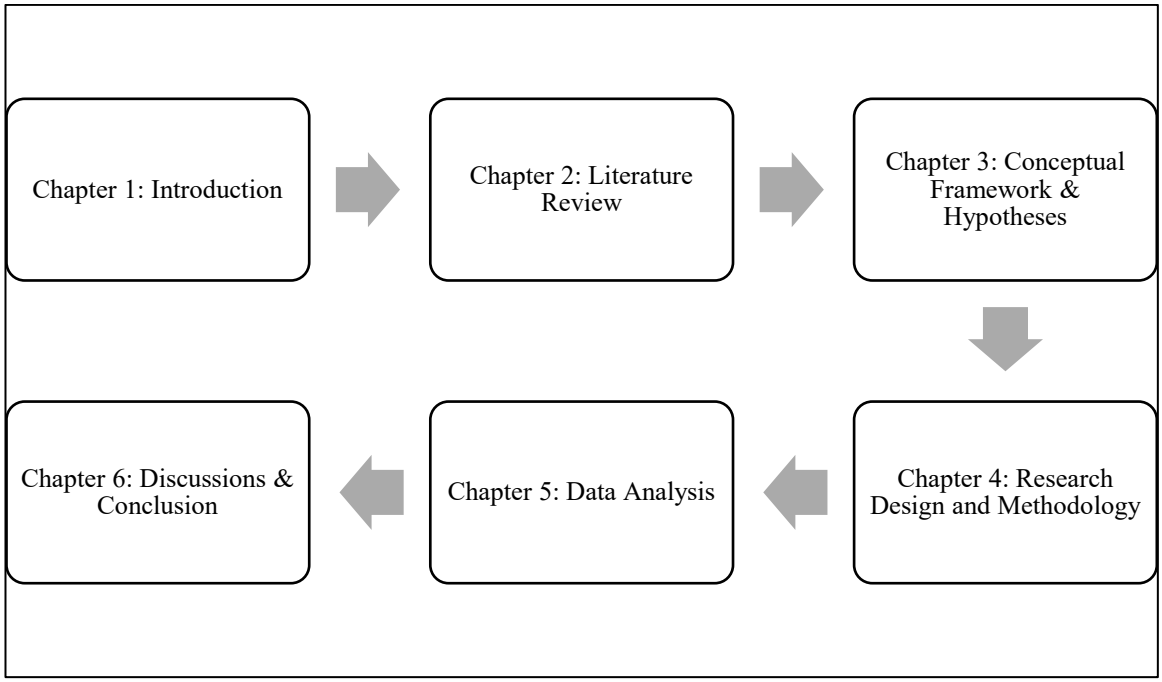

Figure 1.1: Thesis Outline

1.9 Chapter Conclusion

The aim of this chapter was to outline the relevant background and research problem that this thesis attempts to solve. This chapter identified the need to develop insights into how SMEs develop and use dynamic capabilities to achieve time-based competitiveness and firm performance. Additionally, the role of organisation structure and entrepreneurial orientation must also be considered. Further, this chapter outlined the research aim, objectives and questions, as well as the research methodology and significance of the study. The following chapter further elaborates on past research and provides a strong theoretical background to the research.

Chapter 2: Literature Review

This chapter begins with an overview of the theoretical development of dynamic capabilities theory. Common methodological issues in measuring dynamic capabilities are also discussed. The chapter also defines and explores other concepts that are central to this thesis's research, including organisation structure, entrepreneurial orientation, time-based competitive advantage and SME firm performance.

2.1 Dynamics Capabilities

2.1.1 Strategic Management and Dynamic Capabilities

The strategy that is adopted by firms generally aims at achieving the balance between products/services offered and the external environment in which the firm operates (Hitt et al. 2001). In accordance with this organisational concern, strategic management theories and paradigms have been developed with the aim of illustrating the various ways that firms can achieve and sustain competitive advantage. As one of the early and leading authors in the field of strategic management, Porter (1980) explained that once the boundaries of a given industry have been identified, then competitive advantage can be achieved by responding to competitive forces within the industry. Such forces include the risk of potential competitors entering the industry, the intensity of rivalry among existing firms, the bargaining power of buyers and suppliers and how close substitutes are to the products offered by the industry. Weak competitive forces can be exploited to give rise to competitive advantage, as they allow firms to increase prices and consequently earn greater profits (Porter 1980). Therefore, the firm's activities should be concerned with creating defensible positions in the industry.

Shapiro (1989) further introduced the strategic conflict approach in the late 1980s, which is based on the non-cooperative game theory. With this approach, firms can achieve competitive advantage by engaging in behaviour that influences their rival's expectations with regard to the firms' future behaviour. More specifically, a firm should keep its rivals off balance by exploiting product market imperfections, engaging in entry deterrence and strategic interactions and controlling information (Shapiro 1989). The resource-based view (RBV) theory also constitutes a key strategic management approach that explains how firms can achieve a competitive advantage. In general, this perspective suggests that the main determinants of a firm's performance are found its assets and capabilities. The firm's performance depends on how its resources and capabilities are deployed. Over time, firms that can develop resources and

capabilities that are valuable, rare, inimitable and non-substitutable can gain competitive advantage (Barney 1991; Huarng 2010; Mahringer & Renzl 2018; Penrose 1959; Peteraf 1993; Teece 1984, 2018; Wernerfelt 1984; Wohlgemuth & Wenzel 2016). Therefore, research has established that dynamic capabilities are one of the core aspects of strategic management (di Stefano, Peteraf & Verona 2010, 2014; Helfat & Winter 2011). Arend and Bromiley (2009) and Schilke et al. (2018) have noted that the theory of dynamic capabilities have been most influential in the field of strategic management, which was also proven by a co-citation analysis conducted by Fernandes et al. (2017).

RBV theory is fundamentally different from industrial organisation economics. While RBV theory suggests that a firm achieves competitive advantage by employing resources that are difficult to imitate, IO economics theories suggest that resources should be deployed for purposes of deterring competition, co-opting competition through collusion or destroying the competition through below-cost predatory pricing (Conner 1991). Therefore, RBV has a firm-based focus, while IO economics consider the industry structure the central point of analysis for competitiveness.

The current dynamic capabilities theory that forms the basis of this thesis is largely founded on the basic assumptions of RBV theory. In brief, dynamic capabilities theory emphasises the firm's ability to internally achieve new and innovative forms of competitive advantage that consider path dependencies and market positions (Jiao, Wei & Cui 2010). Dynamic capabilities theory advances RBV theory by suggesting that it is not a firm's resources themselves that are key to competitive advantage, but rather the firm's ability to reconfigure its resources and routines and appropriately respond to changes in the environment (Teece & Pisano 1994; Teece et al. 1997). In other words, Teece et al. (1997) proposed the idea of dynamic capabilities to distinguish it from the RBV's more rigid perspective. Unlike the RBV, which focuses on the firm's existing resource base, which is characterized as its capital (tangible and intangible assets) and organizational capabilities, the dynamic capabilities viewpoint focuses on purposeful changes to this resource base (Schilke et al., 2018). Organisational routines in the present study refer to forms, guidelines, procedures, and tactics, can be thought of as integrated courses of action that enable organisations to accomplish their goals through the participation of individuals and their mutually reinforcing actions (Feldman & Pentland, 2003; Thompson, 1967). Routines are described as recognisable, repetitive patterns of interdependent behaviour performed by individuals within a given organization. Informal factors such as ideologies, structures, paradigms, protocols, languages, and knowledge augment, and often contradict, formal routines (Levitt & March, 1988).

2.1.2 History and Overview of Dynamic Capabilities

~~Evolutionary economics, theorised by Nelson and Winter (1982), which considers firms as a set of interdependent routines that undergo continuous transformation based on performance metrics, underlie the theory of dynamic capabilities.~~ The theory of dynamic capabilities was formalised by Teece and Pisano (1994), who sought to explain how firms respond to change in a timely manner, develop innovative products and coordinate and dispatch internal and external competencies in highly dynamic environments. RBV theory failed to address these issues due to its focus on resources being the main source of competitive advantage. In other words, Teece and Pisano (1994) noted that the key difference between RBV theory and the theory of dynamic capabilities was that the latter considers the learning processes as the sources of competitive advantage while the former emphasises on the presence of knowledge resources. Therefore, Teece and Pisano (1994) mainly focused on how important the organisation's management was in light of the unstable nature of the external environment. The nature of responses to instability in the business environment explains why once-successful organisations struggle, experience a strategic drift and fail to meet their goals (Hacklin & Wallnöfer 2012; Johnson 1992; Wohlgemuth & Wenzel 2016).

The terminology used to explain dynamic capabilities theory was previously considered opaque, thus prompting Teece et al. (1997) to develop a model that further explained the concept. The model (see Figure 2.1) explains that a firm's competitive advantage is primarily influenced by managerial and organisational processes that are often known as 'routines' or patterns of current practice and learning. According to Teece et al. (1997), the routines in a given organisation are shaped by its asset positions and the available paths. The routines, as depicted in the framework, are further divided into coordination/integration, learning and reconfiguration/transformation categories. The asset positions in the framework are defined as firm-specific assets that competitors cannot easily imitate or replicate, and they are similar to resources in RBV theory. However, physical resources such as machinery are excluded in asset positions, as they can be directly purchased and are easily accessible to competitors.

Path dependency is also emphasised in dynamic capabilities theory. From this perspective, Teece et al. (1997) argued that the strategic alternatives available to a firm are the products of the firm's current evolutionary position, which is shaped by the path that the organisation has travelled since its inception. In brief, an organisation's history plays an important role in determining how the organisation responds to changes in the business environment. This also signifies that firms can be constrained, at least in the short term, by previous established

routines and investments through a dominant logic (Hamel & Prahalad 1990). A dominant logic, as defined by Prahalad and Bettis (1986, pp. 490–491), is 'the way in which managers conceptualise the organisation and make critical resource allocation decisions in areas such as technology, development of new products, distribution, advertising and human resource management'. Since an organisation's dominant logic is stored through schema, it influences the processes of learning and problem-solving in the organisation.

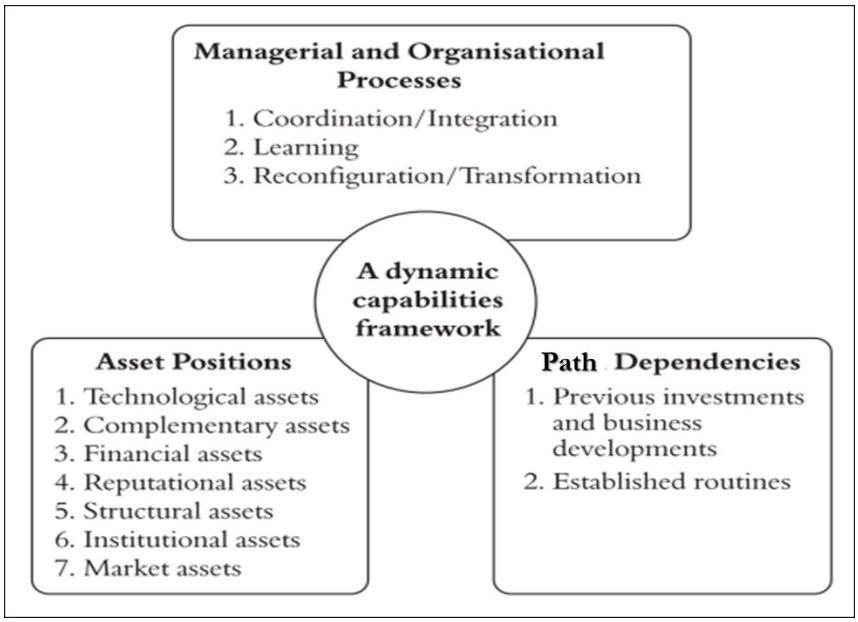

Figure 2.1: The Dynamics Capabilities Framework

Note: Adapted from Teece et al. (1997)

With regard to the abovementioned evolutionary economics, Ambrosini and Bowman (2009) believed that Teece and Pisano's (1994) dynamic capabilities theory is essentially an extension of Nelson and Winter's (1982) work. Nelson and Winter (1982) sought to understand the technical advances in organisations in terms of their sources and effects at the industry and economic levels. The studies by Teece and Pisano (1994) and Nelson and Winter (1982) share many similarities. First, they highlight the important role of routines in influencing the firm's growth and its ability to adapt to changing environments. Second, they stress the importance of internal factors (e.g., the firm's resources) over external factors (e.g., market changes) as being the sources of competitive advantage. Last, both studies seemingly draw on path dependencies, resource utilisation and reconfiguration as the main approaches to addressing continuously changing markets.

Dynamic capabilities theory is also an extension of RBV theory, in that it is based on the reasoning that a firm's competitive advantage begins with its resource base. However, the two theories have diametrically opposed conclusions in relation to the mode of strategic thinking. While RBV theory presumes continuity and predictability, dynamic capabilities theory presumes change and uncertainty (Sminia 2014). In brief, dynamic capabilities theory, unlike RBV theory, urges strategists to strive and handle fundamental change in the business environment. Dynamic capabilities theory is also the core competence perspective of Prahalad and Hamel (1990), in the sense that they all study organisations as a collection of path-dependent resources. These strategic perspectives are taken with the aim of understanding and studying the sources of sustainable competitive advantage (Ambrosini & Bowman 2009; Prahalad & Hamel 1990).

Overall, the above approaches can be traced to Penrose's (1959) theory of the growth of the firm (Augier & Teece 2007; Hoskisson et al. 1999; Kor & Mahoney 2004; Lockett & Thompson 2004; Lockett & Wright 2005; Pitelis 2007). Penrose (1959) drew a distinction between resources, which are homogenous, and productive services (capability), which are heterogeneous, and argued that resources themselves are not the inputs in the production process but only the services that the resources can render. Penrose's (1959) theory further attested that productive services are potentially dynamic, in that they emerge from a knowledge-creating process that creates both an imbalance and an opportunity. Penrose (1959) also elaborated that value creation originates from the use and deployment of these resources rather than from their existence, and that continuous innovation, entrepreneurial competences and expertise development are vital to a firm's growth. Collectively, these ideas form the basis of dynamic capabilities theory.

2.1.3 Understanding Dynamic Capabilities

2.1.3.1 Definitions

In an attempt to explain the operative mechanism of dynamic capabilities, researchers have derived numerous definitions. As a pioneer in this field, Teece et al. (1997, p. 516) defined dynamic capabilities as 'the firm's ability to integrate, build, reconfigure internal and external competencies to address rapidly changing environments'. Therefore, dynamic capabilities that are based on this definition can be viewed as the routines that are organisational or strategic and that enable the organisation to create new resource configurations. In a later definition, Augier and Teece (2007, p. 179) defined dynamic capabilities as 'the inimitable capacity of firms to shape, reshape, configure and reconfigure the firm's asset base so as to respond to changing

technologies and markets'. The inimitable capacity in this definition further refers to the organisation's ability to sense changing customer needs, technological opportunities and competitive events, as well as to adapt and, whenever possible, shape the business environment efficiently and in a timely manner (Dunning & Lundan 2010). Table 2.1 outlines some of the key definitions of dynamic capabilities that have sought to enhance Teece's (2007) original definition.

Table 2.1: Definitions of Dynamic Capabilities

Authors	Definitions
Teece (2000, p. 35)	The ability to sense, seize and transform opportunities quickly and proficiently.
Griffith and Harvey (2001, p. 597)	Global dynamic capabilities are the creation of difficult-to-imitate combinations of resources—including the effective coordination of inter-organisational relationships—on a global basis that can provide a firm a competitive advantage.
Zollo and Winter (2002, p. 343)	'A dynamic capability is a learned and stable pattern of collective activity through which the organisation systematically generates and modifies its operating routines in the pursuit of improved effectiveness'.
Winter (2003, p. 991)	Dynamic capabilities are 'those that operate to extend, modify or create ordinary capabilities'.
Zahra et al. (2006, p. 918)	'Dynamic capabilities represent the firm's ability to reconfigure a firm's resources and routines in the manner envisioned and deemed appropriate by its principle decision-makers'.
Wang and Ahmed (2007, p. 35)	'A firm's behavioural orientation to constantly integrate, reconfigure, renew and recreate its resources and capabilities and, most importantly, upgrade and reconstruct its core capabilities in response to the changing environment to attain and sustain competitive advantage'.
Eisenhardt & Martin (2000, p. 1107)	'The firm's processes that use resources to match and even create market change, dynamic capabilities thus are the organisational routines by which firms achieve new resource configurations as markets emerge, collide, split, evolve and die'.
Helfat et al. (2007, p. 1)	'The capacity of an organisation to purposefully create, extend or modify its resource base'.
Romme, Zollo and Berends (2010)	Set of capabilities, when present, allow the firm to retain the strategic value and change its knowledge base in changing environment.
Felin and Powell (2016)	A set of 'adaptive processes' that enable firms to transform or reconfigure their 'baseline capabilities', recognise any shifts in market needs and react to the same by developing and integrating new technologies, learning from the market events, and identifying and capturing new market opportunities.

Scholars who have used the terms 'ability' or 'capacity' include Zahra et al. (2006), Teece (2000), Helfat (2007) and Winter (2003). Teece et al. (1997), in the original school of thought, used the term 'ability' to emphasise the importance of strategic management. Other scholars such as Helfat (2007) have used the term 'capacity' to explain that dynamic capabilities are first about the ability to perform necessary tasks for a competitive advantage and, second, about the repeatability.

Scholars who defined dynamic capabilities as 'processes' or 'routines' include Eisenhardt and Martin (2000), Teece et al. (1997) and Zollo and Winter (2002). In Eisenhardt and Martin's (2000) study, dynamic capabilities are considered organisational and strategic routines. Through these routines, firms can "achieve new resource configurations as markets emerge, collide, split, evolve and die" (Eisenhardt and Martin, 2000, p. 1107). These routines also act as the basis from which the organisation can gain, integrate, reconfigure and release resources so that it can match the changes in the market. Conversely, Zollo and Winter (2002, p. 343) regarded dynamic capabilities as being routines, in that they are "learned and stable patterns of collective activity through which an organisation can systematically generate and modify their operating routines in the pursuit of improved effectiveness". Based on this definition, dynamic capabilities are structured and persistent. Teece et al. (1997) described dynamic capabilities as being organisational processes that are designed to help the firm adapt to rapid changes in its competitive environment, with the processes operating at the business unit level or corporate level. Overall, it can be noted that these views overlap in their definitions of dynamic capabilities being either abilities or processes/routines, such as in the case of Teece et al. (1997). It should also be noted that the abilities that constitute dynamic capabilities are built and thus tend to be embedded in the organisation in the form of routines (Faulker & Campbell 2006).

Within the context described above, the literature indicates that dynamic capabilities form a part of organisational capabilities. Several definitions of organisational capabilities have been posited. Amit and Schoemaker (1993) and Teece et al. (1997) defined organisation capabilities as the firm's capacity to effectively deploy resources for performing various tasks or activities that are intended to improve performance. Similarly, Helfat and Peteraf (2003) described organisational capability as an organisation's ability to perform a set of tasks and use organisational resources to achieve a specific end result. Different authors have distinguished between various organisational capabilities, such as operational capabilities, dynamic capabilities, substantive capabilities and meta-capabilities (Collis 1994; Inan & Bititci 2015; Zahra et al. 2006).

2.1.3.2 Purpose of Dynamic Capabilities

From the extant body of literature, the main role of dynamic capabilities is perceived to be that of changing critical internal components of the firm (Barreto 2010; di Stefano, Peteraf & Verona 2014; Felin & Powell 2016). Through dynamic capabilities, firms can gain and release resources that allow for the renewal of management processes, which in turn enhance operational performance and facilitate the integration of new environmental requirements (Eisenhardt & Martin 2000; Helfat et al. 2007; Teece et al. 1997). In brief, dynamic capabilities perform an important role in developing/creating and implementing innovations through an efficient process. Such development and implementation of innovations are especially important in dynamic and unpredictable environments, which tend to quickly render existing competencies obsolete. Dynamic capabilities, in such a context, are useful for rebuilding competitive resource bases in a timely and astute manner, as well as for improving the firm's ability to respond to fundamental changes in its environment and reposition itself after a destabilising or disruptive event (Brady & Davies 2004; Helfat et al. 2007; Lin et al. 2016).

Dynamic capabilities literature further indicates that the role of capabilities in an organisation may vary based on their levels—on whether they are zero-level, first-order or higher-order capabilities. Zero-order capabilities—also known as substantive capabilities (Zahra et al. 2006)—are the operational or ordinary capabilities that permit the organisation to earn a living in the present (Winter 2003; Zahra et al. 2006). They also allow the organisation to achieve operational excellence by using competitive methods in their operational routines and management orientations, in terms of factors such as design, production and delivery of products. Conversely, first-order capabilities permit the modification and change of zero-level capabilities. An example of first-order capabilities in the context of manufacturing firms is the ability to enhance an operation link to suppliers and customers, and thus the ability to enhance the maintenance of relationships that are beneficial to the firm (Setchi et al. 2014). Finally, the higher-order capabilities—often referred to as dynamic capabilities—are more complex in nature. They are used to adjust and modify zero-level and first-level capabilities for the organisation's advantage (Zollo & Winter 2002). These capabilities are reviewed in greater detail in subsequent sections. Table 2.2 summarises the categorisation of organisational capabilities as posited by different scholars.

Table 2.2: Categorisation of Organisational Capabilities

Author	Categories of organisational capabilities		
Collis (1994)	First-order capabilities	Second and third-category capabilities	Meta-capabilities
Winter (2003)	Zero-level capabilities	First-order capabilities	Higher-order capabilities
Zahra et al. (2006)	Substantive capabilities	Dynamic capabilities	
Ambrosini et al. (2009)	Resource base	Incremental dynamic capabilities and renewing dynamic capabilities	Regenerative dynamic capabilities
Felin and Powell (2016)	Individual capabilities	Collective capabilities	
Birkinshaw, Zimmermann and Raisch (2016)	Lower-order capability (transforming and reconfiguring)	Higher-order capability (sensing and seizing)	

2.1.3.3 Dimensions of Dynamic Capabilities

2.1.3.3.1 Sensing

Teece (2007) divided dynamic capabilities into three measures, which include the capacity to 1) sense, 2) seize and 3) transform. The sensing capability refers to an organisation's capacity to detect opportunities and threats from the environment (Teece, 2007). Such a capacity is especially critical in the globally competitive, contemporary, and fast-paced environments, in which consumer needs, technological opportunities and competitor activities are constantly changing (Teece 2007). To be effective in sensing, a firm should constantly search and scan for activities and changes in its environment. Through sensing, a firm may tap into new technological developments and supplier and complementary innovations, as well as identify new target market segments and changes in customer needs (Jantunen et al. 2012). Failure to sense such opportunities could expose a firm to threats. For example, opportunities arise for both incumbents and newcomers. If newcomers exploit such opportunities first, then incumbents are at risk of declining profit streams (Teece 2007).

The activities that constitute sensing mostly apply to the top members of management, who are tasked with leading the organisation and envisioning its future (Gumusluoglu & Acur 2016). However, the sensing capability is not shared equally among all organisations. Some organisations are more effective at identifying and shaping opportunities and threats compared to others. The inability of some managements to convey their vision and lead their organisations towards fulfilling their mission has been attributed to a lack of 'absorptive capacity', which is the

ability to evaluate and assimilate external knowledge (Cohen & Levinthal 1990; Volberda et al. 2010). Further, empirical studies have demonstrated that an organisation's sensing capability is largely derived from the presence of several entrepreneurial characteristics, such as proactiveness, intrinsic motivation and integrative skills (Lee & Kelley 2008). Additionally, such capacity could be enhanced by supportive organisational routines (Katzy & Crowston 2008).

2.1.3.3.2 Seizing

Seizing relates to the process of identifying and pursuing strategic prospects that are compatible with the organization's environment, capabilities, and weaknesses (Teece, 2007). Thus, seizing implies effectively exploiting business openings and evading risks. Seizing information and expertise from external and internal sources is inextricably linked to strategic decision-making, especially regarding investment decisions. The capacity of a firm to seize begins with a technique that facilitates the identification of useful information. This decision is predicated on previous experience which results in the identification of one of many competitive alternatives. Capacity for seizing opportunities inside an organisation is strong whether the organization is capable of determining if any knowledge is potentially useful, transforming valuable information into tangible market opportunities that align with its strengths and disadvantages, and making appropriate decisions.

2.1.3.3.3 Reconfiguration

Transforming, or reconfiguration, refers to the firm's ability to enhance, combine, protect and adjust its assets (Teece 2007). ~~It further includes aspects such as decentralisation, governance, co-specialisation and knowledge management.~~ In an earlier study, Simon (2002) suggested that successful organisational transformation is the result of the interplay between organised coordination and change adoption. In the absence of coordination, matching the innovation activities that are required to leverage new technologies becomes increasingly difficult (Chesbrough & Teece 2002). Through transforming capabilities, the organisation can modify existing systems and align itself with current technologies, processes, strategies and the business environment. The need to engage in reconfiguration is supported by contingency theories that suggest that consistency must be achieved for an organisation to be effective. For example, to enhance their effectiveness, companies should fit their product development to the industry (Gumusluoglu & Acur 2016). Teece (2007) explained that to engage in reconfiguration, it is important that an organisation, through its managers, understands the value, reach and applicability of its existing resource base. Figure 2.2 presents a basic chain of the logic for the three types of dynamic capabilities.

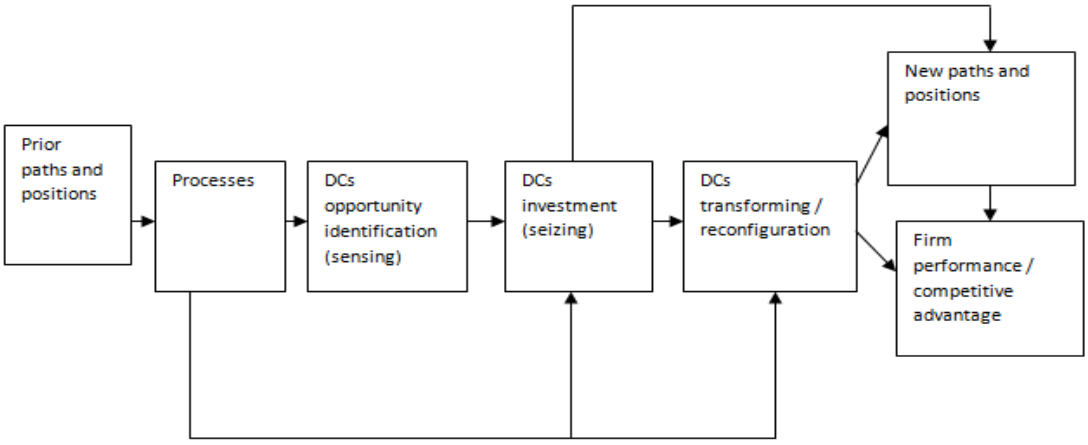

Figure 2.2: Basic Chain of Dynamic Capabilities

Note: Adapted from Helfat and Peteraf (2009)

2.1.3.4 Organisational Context for Dynamic Capabilities Implementation

In Teece et al.'s (1997) first definition, the concept of dynamic capabilities was associated with dynamic environments. However, subsequent research by other scholars has outlined the presence of fundamental variations in regard to how relevant external environments are to dynamic capabilities. Some researchers such as Teece et al. (1997) associate dynamic capabilities with ever-changing environments. In contrast, researcher like Eisenhardt and Martin (2002) and Zollo and Winter (2002) associate dynamic capabilities with unchanging and stable environments. There are also some scholars who are indifferent to the characteristics of external environments (Makadok 2001).

The application of dynamic capabilities to dynamic environments is especially striking in the works of Teece et al. (1997) and Eisenhardt and Martin (2000). Teece (2007) portrayed dynamic capabilities as organisational routines that embody organisational skills that are supported by codification; this, in turn, provides the firm with the ability to address rapidly changing environments through resource configurations. Dynamic capabilities, according to Teece et al. (1997), are thus relevant in a Schumpeterian world of innovation-based competition that is characterised by price performance, rivalry and the creative destruction of existing competencies. The Schumpeterian view of creative destruction involves the 'process of industrial mutation that continuously revolutionizes the economic structure from within,

incessantly destroying the old one, incessantly creating a new one' (Schumpeter 2013, pp. 82–83). In such an environment, dynamic capabilities further take the form of detailed, analytic and codified organisation routines that extensively use existing knowledge.

Eisenhardt and Martin (2000) appeared to reject the above views, instead arguing that in high-velocity environments, dynamic capabilities in the form of codified and analytical organisational routines are likely to put firms at a disadvantage. The rationale is that high-velocity environments necessitate the creation of new, situation-specific knowledge through the use of simple, experiential and unstable processes instead of processes that apply codified knowledge that has been accumulated from prior experience. In support of these views, other scholars (e.g., Heimeriks et al. 2012; Lampel et al. 2009; Zollo 2009) suggested that too much reliance on the codification of organisational routines could result in increased inertia and the risk of competency traps. Therefore, organisations should consider both the beneficial and harmful effects of dynamic capabilities, especially in organisational environments that require high levels of flexibility and customisation of behaviour to specific situations. In contrast to these studies, Makadok (2001) did not consider the external environment a component of his conceptualisation and assumed it was non-relevant. More recent research by Dickens, Cummings and Daellenbach (2018) has outlined that dynamic capabilities are often encouraged by the organisational appetite for risk, strong entrepreneurial leadership and culture of the leadership team—and that they are disabled by the presence of centralised decision-making, the 'ad hoc and intuitive interpretation' of shifting market trends and the need for consensus.

2.1.3.5 Confusions Regarding the Conceptual Meaning of Dynamic Capabilities

Dynamic capabilities have often been confused with other related concepts, such as operational capabilities. However, the two concepts are distinct in terms of their formation and effect on the organisation. Teece et al. (1997) theorised that firms generally have two sets of capabilities. As noted earlier, the first set of capabilities allow for the conversion of inputs into outputs, while the second set is directed towards the change of other firm capabilities. In brief, the first set of capabilities comprises ordinary or operational capabilities, while the second set comprises dynamic capabilities (Helfat & Winter 2011; Winter 2003). In an attempt to distinguish dynamic capabilities and operational capabilities, Winter (2003) associated dynamic capabilities with change, while operational capabilities were deemed as static (zero-order) abilities. Therefore, operational capabilities, unlike dynamic capabilities, cannot change unless the organisational management acts on them through dynamic capabilities.

However, several empirical studies have suggested that it might be possible for operational capabilities to not only change on their own but also influence the change of other organisational capabilities. For example, Pentland and Rueter (1994) discovered that task-level operational capabilities changed on their own and influenced change in other operational capabilities. In a similar study, Ferdows and de Meyer (1990) found that an organisation's quality capability—which is mostly an operational capability—influenced other operational capabilities, such as the ability to produce products at a low cost. Finally, Helfat and Winter (2011) posited that using the zero-order concept to distinguish operational capabilities from dynamic capabilities was hypothetical in nature rather than grounded in reality. In an attempt to address this limitation, Dangol and Kos (2014) proposed that capabilities should be considered operational if they can produce outcomes that can be predicted using a probability distribution. Capabilities with outcomes that cannot be predicted using probability distribution should conversely be considered dynamic in nature.

2.1.4 Outcomes of Dynamic Capabilities

The dynamics capabilities concept was derived with the main aim of explaining why some organisations developed and sustained competitive advantage while others failed to do so. It was also posited to help explain why some organisations could more effectively handle challenges in their external environment compared to others (Barreto 2010). RBV theory failed in this aspect because it regarded the heterogeneity of a firm's assets as the central factor that explained the varying performance between one firm and another (Barney 2001). Scholars have specifically questioned whether the mere possession of bundles of heterogeneous resources is sufficient for a firm to sustain any competitive advantage (Eisenhardt & Martin 2000; Teece et al. 1997). The dynamic capabilities perspective in this context maintains that besides the diversity of resources, the presence of higher-order capabilities influences competitive advantage (Zollo & Winter 2002). Several authors support the belief that dynamic capabilities are directly linked to competitive advantage and high performance (Breznik & Lahovnik 2016; Dixon, Meyer & Day 2014; Priem & Butler 2001; Ringov 2017; Teece et al. 1997; Wilden et al. 2013). Cepeda and Vera (2007, p. 427) further asserted the presence of this positive relationship by stating that 'if the firm has a dynamic capability, it must perform well and if the firm is performing well, it should have a dynamic capability'. Similarly, Griffith and Harvey (2001) elaborated that dynamic capabilities allow firms to create unique combinations of resources, which in turn allows organisations to outperform their competitors.

Wang and Ahmed (2007) have demonstrated various ways that dynamic capabilities directly contribute to competitive advantage. According to these authors, dynamic capabilities comprise four sub-capabilities: absorptive, adaptive, innovative and network capabilities. For firms with absorptive capabilities, competitive advantage is achieved through the increased ease of identifying and utilising external knowledge for commercial purposes. Conversely, firms with adaptive capabilities can achieve a competitive edge through quicker identification and capitalisation of emerging market opportunities (Parida, Oghazi & Cedergren 2016). In the case of innovation capability, competitive advantage has been shown to arise from the ability to develop new products or processes that create additional value for the firm by exploiting market demand (Wang & Ahmed 2004). Last, firms with network capabilities are better placed to achieve competitive advantage through the development and use of inter-organisational relationships as a means of gaining access to resources that other actors possess (Walter et al. 2006; Wang & Ahmed 2004). In support of this categorisation, Cui and Jiao (2011) found that Chinese firms that could form and reform strategic alliances were better placed in terms of gaining access and managing valuable resources that were instrumental in retaining competitive advantages in dynamic environments.

Despite the compelling conceptual arguments for the presence of a direct relationship between dynamic capabilities and competitive advantage, some studies have maintained that this link is difficult to empirically validate and have instead suggested the presence of an indirect relationship. In this case, dynamic capabilities alter a firm's resource base in an effective manner (McKelvie & Davidsson 2009) due to the process of routinisation that occurs at the strategic level rather than the operational level, indicating that dynamic capabilities lead to the development of knowledge reconfiguration capabilities (Wohlgemuth & Wenzel 2016).

Dynamic capabilities constitute a part of a firm's knowledge assets that allow for the constant reconfiguring, accumulation and disposal of organisational resources to meet the demands of a shifting business environment (Easterby-Smith & Prieto 2008). Dynamic capabilities generate value by enhancing the organisation's ability to manage its business and organisational processes efficiently. Placing dynamic capabilities at the heart of business performance thus implies that they are directly responsible for value creation in the form of economic profits. Several studies have also illustrated how dynamic capabilities positively affect the different dimensions of firm performance that influence economic profits. Deng et al. (2003) found that firms with dynamic capabilities could develop patents through effective research activity, which in turn positively influenced innovation and performance in competitive markets (and thus yielded more economic returns). Hand (2003) also demonstrated that firms with dynamic

capabilities could make successful investments through their knowledge assets. Such assets have a positive effect in terms of improving the firm's economic profits. Wang and Kim (2017) outlined that dynamic capabilities allow the firm to enhance its customer relationship capabilities and thereby lead to greater firm performance. Additionally, Wilden and Gudergan (2017) demonstrated that the firm's marketing and technological capabilities positively influence its performance in a service-oriented environment.

Dynamic capability theory suggests that capabilities are dynamic if they are deeply embedded in the organisation and if they are inimitable and non-substitutable (Fang & Zou 2009; Teece et al. 1997; Vorhies et al. 2011). Teece (2007) has further argued that, through a change in the resource base, dynamic capabilities lead to the generation of new knowledge, products and processes that consequently create new competitive advantages and better firm performance. In a more recent study, Teece (2014) yet maintained that dynamic capabilities lead to superior performance, especially in fast-paced environments.

The literature suggests that the possession of IT-related dynamic capabilities in rapidly changing environments could significantly influence the ability to achieve a competitive advantage (e.g., see Bhatt et al. 2005; Clark et al. 1997; Santhanam & Hartono 2003). It is necessary to look at IT-related dynamic capabilities because London is considered one of the technology hubs in the world with a substantial number of IT companies in the UK (162,000 only by the end of 2018) (O'Dea, 2018). Notably, IT-based capabilities, as a type of dynamic capabilities, are considered dynamic in nature if they are valuable (i.e., they positively affect performance), imperfectly mobile (i.e., they are difficult to acquire in resource markets) and heterogeneous (i.e., they are not the same across the industry) (Bhatt et al. 2005). Santhanam and Hartono (2003) empirically indicated that firms with IT-based dynamic capabilities (in terms of business experience) can develop reliable and cost-effective systems. They can also anticipate business needs sooner than the competition and are thus a competitive edge in the market. Similarly, Clark et al. (1997) found that firms that possessed IT groups with high-level business expertise could rapidly develop and deploy critical systems that positively affected competitive advantage in the long term. In each of these cases, it is not the technological infrastructure that influences competitive advantage but rather the expertise/capabilities required to use such resources.

Various studies have further linked the competitive advantage that arises from IT capabilities in the context of SMEs to a firm's performance as an example of dynamic capabilities. In their study, Chan et al. (1997) found that competitive advantage arising from the effective use of information systems improved business performance through higher market growth, improved

financial performance, higher levels of innovation and improved company reputation. Similarly, Ashrafi and Mueller (2015) demonstrated that firms with IT-enabled competitive advantage strategies had superior sales growth, market performance and operational performance. Stratopoulos and Dehning (2000) also found that firms that successfully used IT had significantly superior financial performance compared to their counterparts that were less successful in using IT. However, this specific study indicated that the financial performance advantages that arose from IT-related competitive advantage were short lived because rival firms could copy IT projects. Technological capabilities have also led to an enhanced rate of firm performance in the presence of organisational innovation (Camisón & Villar-López 2014).

Mixed findings have been reported regarding the relationship between competitive advantage and firm performance in an IT context. For example, Bhatt and Grover (2005) found that firms with superior IT infrastructure did not display a direct relationship between competitive advantage and firm performance due to lack of organisational learning. However, firms with a competitive advantage in terms of the quality of IT business expertise were found to be characterised by superior firm performance. Several authors have also observed that not all forms of IT can lead to competitive advantage and, consequently, an improvement in firm performance. For example, the wide adoption of ATMs in the banking industry was not associated with significant improvements in firm performance. One reason for the contradictory findings regarding the influence of IT capabilities could be the easy availability of technology today (Chae, Koh & Prybutok 2014).

The above findings have led to the argument that IT implementation in some contexts may be a strategic necessity, as opposed to being a differentiating factor that leads to competitive advantage and superior firm performance (Rivard et al. 2006). This hypothesis of strategic necessity fits well within the VRIN framework, which emphasises that sustainable competitive advantage arises from resources that are valuable, rare, inimitable and non-substitutable (Barney 1991). The IT resources of competitors are not rare and are thus incapable of yielding superior rents. In an empirical study that tested each component of the VRIN framework (based on a sample of medium and large Croatian firms), valuable and rare resources were found to have had the most significant effect on an organisation's competitive advantage and performance (Talaja 2012).

In a study that focused on strategic alliances as a type of dynamic capabilities in China, Cui and Jiao (2011) found that firms with opportunity-sensing, reconfiguring capabilities and technological flexibility capabilities were significantly associated with strategic alliances. In turn,

these strategic alliances positively affected competitive advantage in various ways. For example, it was shown that Chinese firms that formed strategic alliances with competitors could enhance their market power, increase their efficiencies, gain access to new resources and enter new markets that would otherwise have been inaccessible due to market barriers. Similar findings have been reported, in which strategic alliances have been found to contribute to as much as 26 per cent of the firm's revenues (Kale et al. 2009).

One of the main emphases of dynamic capabilities theory is the need for firms to constantly acquire, generate and combine/reconfigure their resource bases. In the world's current, knowledge-based economy, knowledge resources are considered critical for ensuring that firms achieve a sustainable position in the market (Zheng et al. 2011). Accordingly, knowledge-based dynamic capabilities perform an important role in facilitating a firm's ability to continually renew its knowledge base and, consequently, its ability to address changes in the environment (Ambrosini & Bowman 2009). Knowledge-based dynamic capabilities are further classified into three types: knowledge acquisition capabilities, knowledge generation capabilities and knowledge combination capabilities. Zheng et al. (2011) found that each of these knowledge-based dynamic capabilities positively influences competitive advantage and performance through innovation. Knowledge acquisition and knowledge generation capabilities enhance innovation by providing raw materials that can be synthesised. Knowledge combination capability leads to innovation by providing a platform from which different kinds of knowledge can interact and be experimented upon to develop new methods of configuration. Existing studies have widely supported the presence of a positive association between innovation and competitive advantage (Bowonder et al. 2010; Brem, Maier & Wimschneider 2016; Gürlek & Tuna 2018; Lew & Sinkovics 2013; Minoja et al. 2010; Weerawardena & Mavondo 2011).

There is no incentive to believe that dynamic capabilities, such as the routine alteration of an organization's resource base, can yield only beneficial results (Arend & Bromiley, 2009). Dynamic capabilities, for example, may result in an acute rise in organizational failures, with this impact fading over time (e.g., Amburgey, Kelly, & Barnett, 1993; Guth & Ginsberg, 1990). Any organizational participants can experience work frustration, intention to resign, or health decline as a result of Dynamic capabilities (e.g., Begley & Czajka, 1993), which may have a detrimental impact on firm performance (e.g., Judge, Thoresen, Bono, & Patton, 2001). Any of the approaches used to exercise dynamic capabilities at one stage may impede their implementation later (e.g., Cloodt, Hagedoorn, van, & Kranenburg, 2006). It is therefore critical to avoid making a priori conclusions regarding the unidirectionality of dynamic capabilities, which may contribute to tautology and cognitive bias (Helfat & Peteraf, 2009).

2.1.5 Types of Dynamic Capabilities

There is a consensus in dynamic capabilities literature that the main role of dynamic capabilities is to alter the resource base of firms in a manner that renders them more competitive (Barreto 2010; Kor & Mesko 2013). Therefore, it can be concluded that the value of dynamic capabilities arises from their output rather than from their existence (Ambrosini & Bowman 2009). As highlighted earlier, Teece (2007) suggested the existence of different types of dynamic capabilities—those that include sensing of opportunities and threats, seizing of opportunities and responding to threats wisely, and those that permit the transformation of firm resources to maintain competitiveness. Conversely, Bowman and Ambrosini (2003) classified dynamic capabilities under four types: 1) reconfiguring resources, 2) leveraging capabilities, 3) learning capabilities and 4) integration capabilities. In more detail, reconfiguration capabilities allow for the effective transformation and recombination of resources while leveraging capabilities entail the ability to replicate a process or system that operates in one business unit to another. Learning capabilities yield greater efficiency and effectiveness in performance while creative integration allows for successful asset and resource configuration. The above classification and approach to dynamic capabilities have been criticised for being vague and abstract (Barreto 2010; Schilke 2014). Moreover, the types outlined above were argued not to be dynamic capabilities but micro-foundations of dynamic capabilities (Teece 2007), or managerial processes that enable dynamic capabilities (Helfat et al. 2007). An earlier study by Winter (2003) also suggested that such capabilities constitute third-level capabilities. Such views essentially lead to the question of what dynamic capabilities are.

Eisenhardt and Martin (2000) approached dynamic capabilities from a different perspective compared to earlier researchers such as Teece et al. (1997). Eisenhardt and Martin (2000) and Teece et al. (1997) emphasised that dynamic capabilities can be understood more precisely when they are regarded as identifiable and specific routines. The authors of both studies also argued that dynamic capabilities can have positive or negative outcomes, depending on the context in which the capabilities are developed and implemented. Eisenhardt and Martin (2000) also reinforced that the value of dynamic capabilities arises from their results rather than from their existence. Growing research in this area has sought to conceptualise dynamic capabilities as processes rather than constructs (e.g., Wilden et al. 2013). Table 2.3 illustrates the expanding set of specific dynamic capabilities that were identified through empirical research. While Wilden et al. (2019) has identified higher-order and lower-order capabilities as comprising dynamic capabilities, Wilden et al. (2019) has defined lower-order capabilities as “Lower-order capabilities represent the firm's ability to perform a coordinated set of everyday tasks on an

ongoing basis" (p. 45). This conceptualisation of lower-order dynamic capabilities is similar to the notion of ordinary capabilities that are best practices that are limited to specific tasks related to performance (Teece, 2007). In addition, as noted by Swoboda and Olejnik (2016, p. 141) "Capabilities are third-order elements because they combine resources and processes to achieve a desired end. Dynamic capabilities build on (mere) capabilities because they combine resources and processes in response to changing environments". Thus, the present study recognized lower-order capabilities as a form of ordinary capabilities and focuses instead on higher-order capabilities.

Table 2.3: Dynamic Capabilities Identified through Empirical Research

Study	Example of dynamic capabilities	Sample	Context	Findings
Helfat (1997)	R&D	26 large US energy firms	US petroleum industry	Higher levels of R&D achieve greater levels of competitive advantage through larger amounts of complementary technological knowledge and assets.
Karim and Mitchell (2000)	Acquisition process	3000 firms with more than 200 product lines (1978–1995)	US medical sector	A positive relationship exists between acquisition and business reconfiguration, with the generation of better opportunities to build existing resources and obtain newer resources.
Danneels (2002)	Product innovation	80 interviews	High-tech firms in chemical, engineering, technological and telecommunication sectors	Firms with product innovation capabilities could achieve higher competitiveness through the development of new portfolios and new customer competencies.
Karim (2006)	Organisation reconfiguration	250 firms	US medical sector	Firms with reconfiguration abilities could derive benefits from acquired units sooner than firms that lacked such capabilities.
Moliterno and Wiersema (2007)	Resource divestment	26 teams	Baseball franchises	High resource divestment capabilities were characterised by a more superior performance than the industry average.

Zhou et al. (2019)	Sensing, integration and reconfiguration	204 firms	Telecommunication, electronics, automobile, pharmaceuticals, manufacturing, logistic and software industries	Innovation mediated the positive effects of dynamic capabilities on performance.
Wilden et al. (2019)	Higher-order and lower-order capabilities of service firms (co-creation capabilities and dynamic capabilities)	279	Marketing advisory firms	The positive effects of dynamic capabilities on firm performance were found in the presence of co-creation capabilities.

2.1.6 Methodological Issues in Measuring Dynamic Capabilities

Empirical evidence was still found lacking a decade after the first definition of dynamic capabilities by Teece et al. (1997). Earlier researchers of the concept (e.g., Eisenhardt & Martin 2000; Teece et al. 1997; Zollo & Winter 2002) focused their efforts on understanding, identifying and defining dynamic capabilities and their effects (Helfat & Peteraf 2009). The factors that received inadequate attention during this period included explanations for how dynamic capabilities emerge and approaches to ensure that they do not stagnate. Additionally, no comprehensive details were provided regarding why some firms have strong dynamic capabilities, and others do not. Arend and Bromiley (2009) summarised these issues into four major problems that limited the contributions of dynamic capabilities theory: 1) uncertain theoretical contribution to the current strategic management field, 2) lack of a robust theoretical foundation, 3) limited empirical support, and 4) uncertain practical implications.

Ambrosini and Bowman (2009) offered several plausible explanations for these gaps in the dynamic capabilities theory. The theory was too abstract at the early stages of research, such that scholars were unclear regarding what they should consider. Additionally, because the concept was relatively new, researchers found it difficult to observe or measure without first understanding the concept's underlying principles. It is for these reasons that earlier studies mainly focused on defining dynamic capabilities theory.

Resource creation and regeneration processes for firm specific resources, the context of such creation and regeneration, and the process of how these resources were created and regenerated are crucial parameters to consider (Ambrosini and Bowman, 2009). Ambrosini and Bowman (2009) also suggested the necessity of a fine-grained investigation that allows for obtaining rich and contextualised data. Aligned with this suggestion, Parida et al. (2012) quantitatively investigated the dynamic capabilities of small high-tech firms in Sweden and found that ICT use increased internal efficiency, which in turn positively influenced absorptive and collaborative capabilities. Other studies have sought to explore the specific ways that dynamic capabilities influence competitive advantage as the ultimate goal of their deployment. For example, Cui and Jiao (2011) used a quantitative study to investigate the relationship between dynamic capabilities and competitive advantage in Chinese firms that were involved in strategic alliances. The researchers confirmed that firms with well-developed dynamic capabilities were well positioned to both sense opportunities and reconfigure their resources to match rapid changes in the operating environment. However, other studies have suggested that dynamic capabilities may not be unique to a firm and that they may not necessarily lead to

sustainable competitive advantage (Chirico & Nordqvist 2010; Narayanan et al. 2009). In response to such views, some researchers have sought to investigate strategies that can help firms leverage their dynamic capabilities and consequently achieve stronger organisational performance. For example, Lin and Tsai (2016) found that firms can strengthen their dynamic capabilities through strategies such as synergy orientation, which focuses on acquiring varied knowledge of a capability, and uniqueness orientation, which emphasises the depth of knowledge and technology of the capabilities. Additionally, research by Wohlgemuth and Wenzel (2016) has outlined that routinisation at the strategic level allows firms to leverage dynamic capabilities, while Fernandes et al. (2017) have outlined that organisational learning is associated with employing dynamic capabilities in organisations.

In addition, the formative nature of dynamic capabilities also needs to be considered. Wilden et al. (2013) adopted the criteria that were outlined by Jarvis et al. (2003) to test whether the construct of dynamic capabilities was formative or reflective. The authors noted that dynamic capabilities are defined by an organisation's capability to sense and seize opportunities and reconfigure its resources. Due to this, the authors concluded that dynamic capabilities are the sum of their measured items and that the items produce the construct—which aligns with the primary assumption of a formative construct (Wilden et al. 2013). Further, the authors noted that neither the measured item nor the lower order constructs (LOC) were interchangeable; rather, they remained independent. That is, each of the three LOCs represents capacities that are necessary to state that an organisation has dynamic capabilities, and eliminating even one LOC would substantially distort the construct (Wilden et al. 2013). Further, the authors noted that none of the components covert with one another. This signifies that a change to an organisation's sensing capabilities will not necessarily lead to changes in how the organisation reconfigures its resources.

Wilden et al. (2013) also used the confirmatory tetrad analysis for empirically testing their assumptions regarding the nature of dynamic capabilities. The authors found that the first-order measured items behaved reflectively, while the second-order LOCs behaved formatively, as they had hypothesised. In light of this, the present study decided that conducting another confirmatory tetrad analysis was redundant and accepted the formative nature of dynamic capabilities as theorised by Wilden et al. (2013).

2.2 Competitive Advantage

2.2.1 History and Overview

Competitive advantage has been framed from classical, economic and resource-based perspectives (Bhatt et al. 2005). The classical perspective regards competitive advantage in terms of a firm's position in an industry. Accordingly, a firm that can raise entry barriers, have higher bargaining power with customers and suppliers, offer new products or change the rules of competition is considered to have a competitive advantage. The economic perspective frames competitive advantage in terms of the possession of asset-specific investment that makes it difficult for customers to switch to competitors (Bhatt et al. 2005). Last, the resource-based perspective regards competitive advantage as the outcome of the deployment and use of idiosyncratic, value-related and inimitable resources and capabilities (Bhatt et al. 2005). In this thesis, each of these perspectives is considered. Hill and Jones (2001) believed that better efficiency, quality, innovation and the ability to respond to customers' needs effectively were indicators of competitive advantage. Good efficiency enables organisations to lower the costs of operations and improve quality, thus enabling them to charge higher prices. Conversely, innovation and customer responses facilitate the improvement of customer satisfaction and consequently higher sales volume and profitability, which are essential for building sustainable competitive advantage (Hill & Jones 2001).

Strategic management literature suggests that firms can achieve competitive advantage through the pursuit of a generic strategy that is consistent with the nature of competition in the industry. The two main generic competitive strategies include cost leadership and differentiation strategies (Kreiser & Davis 2010; Porter 1985). However, Banker, Mashruwala and Tripathy (2014) have noted that a differentiation strategy leads to greater financial performance than a cost leadership strategy.

In highly competitive markets, a firm's performance is partly determined by its responsiveness to customer needs (Asree et al. 2010; Kumar & Pansari 2016). To satisfy customer needs, a firm must be efficient and innovative and offer the desired value. Further, Kumar and Pansari (2016) suggested that superior performance can be achieved by customising products or adapting to customer needs through the tailoring of products to meet different tastes and preferences. Although customising products can raise costs, firms can achieve competitiveness by charging premium prices (Sharma & Iyer 2011). Strong responsiveness to customer needs also increases customer satisfaction, which has been demonstrated to significantly and positively affect firm performance. In an earlier study, Reichheld and Sasser (1990) found that customer satisfaction

increases loyalty, which in turn leads to greater purchase volumes of other products that the firm offers. All these aspects positively affect financial performance measures, such as sales and profitability.

Firms with the main strategic goal of achieving long-term sustainable performance must build their competitive advantage. Competitive advantage and firm performance are often considered synonymous, but they are different constructs (Cater & Pucko 2005). A firm is considered to possess competitive advantage if it occupies a unique position in the market, relative to its competitors. The firm should implement value-creating strategies that are different from those of its competitors (Barney 1991). Therefore, competitive advantage denotes superiority in the market, as based on customer perceptions. Conversely, firm performance denotes an organisation's ability to efficiently achieve its goals—which may relate to aspects such as firm size, sales volume, profitability and human resources (Civelek et al. 2015). As mentioned previously, a firm can achieve competitive advantage by offering superior value to its customers in the form of a reduced price of products or by differentiating its products in relation to aspects such as quality, speed, flexibility and reputation (Rodríguez-Pinto, Carbonell & Rodríguez-Escudero 2011).

The RBV and RAT theories attempt to explain how firms gain competitive advantage in their industrial sectors. RBV theory suggests that sustainable competitive advantage can be achieved by developing resources that are rare, valuable, imperfectly imitable and non-substitutable (Kozlenkova et al. 2014). Conversely, RAT theory posits that to achieve competitive advantage, a firm's resources should be of a quality that their consumption in a dynamic industry results in superior financial performance for the firm (Hunt 2011). Although the perspectives are slightly different, the two theories suggest that firms with competitive advantage can offer products that provide additional financial value for the firm. This section will review theoretical and empirical studies that link competitive advantage and organisational performance.

The existing literature also provides insightful perspectives regarding which competitive advantage constitutes a precondition for superior firm performance. For example, at the general level, most existing studies agree on the presence of a positive relationship between competitive advantage and firm performance (Hult & Ketchen 2001; Peteraf 1993; Spanos & Lioukas 2001). This positive relationship mainly exists when firms use their competitive advantage to offer superior products or services. Some studies have also examined whether firms that adopt cost leadership or differentiation as their main competitive strategies exhibit differences in firm performance (e.g., Doyle & Wong 1998; Hull & Rothenberg 2008). In this case, more authors

believe that competitive advantage leading to differentiation has a greater effect on firm performance than competitive advantage involving cost advantages (Doyle & Wong 1998; Hull & Rothenberg 2008). Some studies have also suggested that firms that integrate cost leadership and differentiation in a hybrid competitive strategy have greater firm performance compared to firms that rely on just one form of competitive advantage (Faulker & Bowman 1992; Reitsperger et al. 1993).

Other studies have also explored the link between cost leadership and differentiation in relation to total quality management (TQM) as a competitive advantage that allows firms to maintain high standards in their operations. Hendricks and Singhal (1997) found that firms receiving high-quality awards had better operating income-based measures. However, the firms in the sample struggled to control their costs effectively. In a study of Swedish firms that were recognised for their excellent quality, Hansson and Eriksson (2002) found that the firms possessed better financial performance indicators compared to their competitors. In addition to better financial performance, the firms also possessed better employment rates. In another study, Fuentes et al. (2006) examined whether competitive advantage that was gained through strategic planning and an adoption of TQM measures affected firm performance in Spanish firms. The authors discovered that firms with superior strategic planning and TQM displayed significantly higher levels of organisational performance than their competitors. Based on these studies, it can be stated that a strong relationship exists between competitive advantage through TQM and firm performance.

Most existing studies suggest that competitive advantage leads to superior firm performance (e.g., Efrat et al. 2018; Maury 2018; Nair & Sminia 2019; Peteraf 1993; Porter 1985; Powell 2001; Wang 2014). In support of this positive link, Porter (1985) noted that the superior performance could arise from monopoly rents (e.g., protecting market position), Ricardian rents (e.g., resources and inputs like knowledge, leadership and culture) or Schumpeterian rents (e.g., dynamic capabilities that renew advantages over time by innovation). However, some studies indicated that the relationship between competitive advantage and performance may not always be positive (Cater & Pucko 2005; Coff 1999). One such scenario could involve a situation in which a firm—due to competitive advantage—pays high rents that are appropriated by different stakeholders. For example, a firm that offers technologically superior products due to a competitive advantage in IT capabilities may have its returns appropriated by higher salaries for employees. Consequently, the firm may fail to achieve superior financial performance in aspects such as return on equity (Cater & Pucko 2005). Coff (1999) cited the example of IBM; although this company pioneered the assembling of strategic capabilities that resulted in the

creation of the modern personal computer, Intel and Microsoft obtained many of the associated rents. This author also observed how a significant number of Japanese firms had previously exhibited strong strategic capabilities, and how they have been characterised by lacklustre financial performance. From yet another perspective, Webb and Schlemmer (2008) observed in their study of small firms that although firms may benefit from the competitive advantages that arise from using IT, they can be neutralised by disadvantages in other areas. For example, a firm may have superior products due to their use of IT but be conversely average or poor in their marketing processes. The authors thereby concluded that financial performance is a net effect of various processes and that competitive advantage in one area does not guarantee superior performance across the entire organisation.

Several dimensions of competitive advantage exist, such as differentiation strategy, cost leadership (Porter 1980) and time-based competitiveness (Lakhal 2009; Zhou et al. 2009). With Porter's (1980) framework constituting the conceptual underpinning of time-based competitive advantage, time-based competition can be considered a form of differentiation strategy that leads to firms gaining more responsiveness and speed that they can use to achieve a greater competitive advantage. Zhou et al. (2009) have noted that time-based competition is critical for firms to achieve a multi-competitive advantage. With the increasing market complexity, achieving a competitive advantage can no longer be considered a function of cost leadership. Time-based competitive advantage has emerged as a core aspect of competitive advantage, such that firms with a high degree of responsiveness and speed of market entry emerge as market leaders that have higher performance rates (Blackburn 1991; Wheeler et al. 2007). When firms develop time-based competitive advantage, they undergo time compression (especially in the case of manufacturing companies) and develop a higher rate of innovation and production capacity, as time allows them to obtain more than one competitive advantage (Jenssen 2003; Vonderembse & Koufteros 2003). Due to operating in a relatively turbulent environment and facing intense competition, generating this kind of time-based competitive advantage is especially important for SMEs. However, there is a paucity of such research in the context of SMEs. During the era of the global competition (D'Aveni, 1994) and accelerating market speeds (Carrillo, 2005; Nadkarni & Narayanan, 2007), how a company distributes and integrates its capital resources on a temporal scale is critical (Hassard, 1991; Hellström & Hellström, 2002; Stalk & Hout, 1990). Studies of innovation's temporal behaviors have concentrated on the speed, momentum, or rhythm of progress (e.g., Brown & Eisenhardt, 1997; Eisenhardt & Martin, 2000; Kessler & Chakrabarti, 1996). The idea of recombination of tangible and intangible resources is fundamental in these studies. The topic of time is especially relevant for startup

firms and SMEs, which are resource constrained (Rosenbusch, Brinckmann, & Bausch, 2011), but strategic management studies have given little attention to how controlling the temporal distribution of resources affects performance.

2.2.2 Time-Based Competitive Advantage

Stalk (1988) conceptualised the term 'time-based competition' to outline the importance of quick time-based competitive advantage. The significance of time in strategic management and competitive advantage has been well established (Ferrier 2001). The importance of time-based competitive advantage has been evaluated as market lags, which affect the performance of a firm (Boyd & Bresser 2008). Additionally, the speed of decision-making and the timely spacing of market reactionary actions have also been found to be significant predictors of firm performance (Eisenhardt 1989; Laamanen & Keil 2008). Time-based competitive advantage has also been described as market inertia, which has also been linked to a firm's performance (Miller & Chen 1994). Additionally, the consequences of competitive actions on firm performance are based on a temporal association (Bridoux et al. 2013).

Further, time-based competitive advantage has also been described as innovation speed (Shan et al. 2016), which is a firm's rate of efficiency for developing new products and entering them into the market (Kessler & Bierly 2002). Vessey (1991) highlighted that as the market observes a continuous reduction in product lead time, innovation speed has become a source of competitive advantage and has transformed into one of the most important organisational resources. This is especially true for new firms, who after enhancing their time-based competitive advantage have found a tremendous increase in the rate of profits, market share and survival time (Schoonhoven et al. 1990).

With the addition of time as a means of obtaining a greater time-based competitive advantage, Chen, Damanpour and Reilly (2010) stated that firms adopt a shorter product life cycle by changing their approach to achieve the highest value in the least amount of time with the lowest cost. In other words, in order to achieve time-based competitive advantage, firms aim to reduce their time to market rate to ensure that they are deriving added value with the least amount of time & cost spent. Faster product development and market entry, innovation speed and time-based competitive advantage (used interchangeably) have been found to generate competitive advantage and enhance firm performance (Brown & Eisenhardt 1995; Chen, Damanpour, & Rielly 2010; Kessler & Chakrabarti 1996; Verona 1999).

Additionally, demand anticipation and aggressive product positioning have also been shown to result in strong firm performance (Ireland et al. 2003). Using a time-based competition model

allows firms to ensure customer satisfaction for impatient customers. This leads to market dominance and greater firm performance (Brown & Eisenhardt 1995) and then allows firms to establish industry standards (Shan et al. 2016). Firms can also develop their time-based competitive advantage by launching strategies such as 'fast mover' or 'fast follower', which position firms to have a greater time-based competitive advantage in dynamic markets (Eisenhardt & Tabrizi 1995; Stalk & Hout 1990).

2.3 SME Performance

2.3.1 Firm Performance

Firm performance is one of the most widely used measures in organisational management literature (Miller, Washburn & Glick 2005). Research conducted by Combs, Crook and Shook (2005) found that more than 82 per cent of the studies in the *Strategic Management Journal* between 1980 and 2004 conceptualised firm performance as financial performance. Within these studies, Combs, Crook and Shook (2005) identified that accounting measures of profitability (e.g., return on investments or return on assets) were used approximately 52 per cent of the time. Similar results were obtained in analyses of other journals and time frames, such as those by Carton and Hofer (2006) and Richard et al. (2009).

However, the concept of firm performance has had little theoretical development (Storey 2016). Venkatraman and Ramanujam (1986, p. 801) have criticised the conceptualisations that have been presented and that still hold true, stating that 'the treatment of performance in research settings is perhaps one of the thorniest issues confronting the academic researcher today'.

Several definitions of firm performance have been posited. For example, Jesnsen and Meckling (1976, p. 307) noted that firm performance involves 'maximizing profits'. Conversely, Wernerfelt (1984, p. 172) defined firm performance as the return that is generated over a certain time, while Rumelt (1991, p. 167) stated that firm performance is the return that is generated on assets. Barney (2001, p. 26) asserted that firm performance is 'the value that an organization creates using its productive assets [in comparison] with the value that owners of these assets expect to obtain'. Finally, Venkatraman and Ramanujam (1986) stated that firm performance measures to what extent the firm's economic goals have been fulfilled.

In recent research, the antecedents of firm performance have also been used to classify firm performance. For example, Combs, Crook and Shook (2005) noted that the conceptualisation that Venkatraman and Ramanujan (1986) presented (i.e., operational performance) is best regarded as the antecedent rather than the definition. Conversely, Connolly, Conlon and

Deutsch (1980) stated that conceptualising firm performance as the satisfaction of firm stakeholders or customers is a better approach because customer satisfaction is both an outcome measure and an antecedent. Consequently, in this thesis, SME firm performance was conceptualised according to Vorhies and Morgan (2005), who operationalised performance as comprising the measurement of customer satisfaction, anticipated profitability and market effectiveness.

2.3.2 Understanding SMEs

SMEs are not defined using a uniform definition, but they have been known to contribute substantially to a country's economy. An early definition of SMEs focused on how much of the market share the firm captured, how organic and flat the structure of the firm was and how extensively the firm lacked an association with larger firms (Dawes & Haydock 1999). Another early work by Wynarczyk et al. (1993) also identified SMEs as firms that have a smaller product and customer portfolio, with other authors stating that SMEs are firms with fewer than 500 employees (Audretsch, Santarelli & Vivarelli 1999). However, the accepted norm is to define SMEs in the context of the country that is in focus. For example, since this research is based in the UK, the official definition of SMEs in the UK are businesses that have fewer than 250 employees, with micro-firms that have fewer than 10 employees also included in the definition (Rhodes 2019).

SMEs are generally characterised by the presence of limited access to resources, especially in the case of startups, in which the owner's capability to generate resources is critical (Welsh & White 1981). Further, SMEs are also characterised by an informational management style and a relatively flatter structure (Slade 2005), as well as a high degree of flexibility due to their small size and informal structure (Aragón-Sánchez & Sánchez-Marín 2005). Finally, SMEs are mostly managed by their founders, who act as the single decision-maker (Feltham, Feltham & Barnett 2005).

2.3.3 Antecedents of SME Firm Performance

2.3.3.1 Competitive Advantage

The link between strategies that impart competitive advantage and SME firm performance has been studied extensively. However, there is no clear agreement regarding which strategies SMEs adopt and how this affects their performance. For example, some studies have shown that SMEs are known to follow a focus strategy, with differentiation being followed in niche markets (Gibcus & Kemp 2003; Weinstein 1994). SMEs are also known to develop high-quality products,

which has evolved into a central aspect for SMEs in the European context (Sun & Cheng 2002). Additionally, SMEs have also applied differentiation strategies as a means of enhancing their firm performance (Beal 2000). Moreover, low-cost strategies are also another core strategy that SMEs adopt (Ebben & Johnson 2005). However, it can be noted that SMEs are considered too small to adopt a cost leadership strategy, though lower cost in internal processes is necessary (Gibcus & Kemp 2003).

Research on SME firm performance and the choice between differentiation and cost leadership strategies is inconclusive. For example, some studies have shown that cost leadership and differentiation have a similar effect on SME firm performance (Kemp & Verhoeven 2002), while Pelham (2000) found that differentiation influenced firm performance more than cost leadership. However, Dess and Davis (1984) reported cost leadership to be more beneficial than differentiation for SMEs. One explanation for these different findings can be attributed to the little correlation that has been found between the various parameters of firm performance (e.g., market share, profitability and growth) (Murphy et al. 1996). Therefore, it can be stated that an undeniable relationship exists between the strategy that SMEs adopt and their performance.

It is worth noting that time-based competitive advantage is another strategy that has emerged (Stalk 1988). While research on time-based competitive advantage in the context of SMEs is limited, evidence from research on MNEs can be applied to understand the potential benefits of time-based competitive advantage for SMEs. For example, research by Chen, Damanpour and Reilly (2010) highlighted the advantage of a shorter product life cycle with low cost for firm performance. Further, research by Brown and Eisenhardt (1995), Chen and Damanpour (2010), Ireland et al. (2003), Kessler and Chakrabarti (1996) and Verona (1999) has revealed that time-based competitive advantage allows firms to gain faster market entry, a greater speed of product development and innovation, and the chance to position their product aggressively—all of which leads to an enhanced rate of firm performance. Although research in the context of SMEs is limited in regard to time-based competitive advantage, it can be said that such benefits, when presented to SMEs, can lead to improved firm performance. In brief, because SMEs function in a highly competitive market, gaining speed of innovation and a 'fast mover' advantage may substantially enhance profitability. One reason for the discrepancy between the choice of strategy and its impact on SME firm performance is the weak consideration of time-based competitive advantage as being the single most valuable strategy for SMEs.

2.3.3.2 Dynamic Capabilities

Although there is limited research that focuses on the link between dynamic capabilities and SME firm performance, some research has explicitly identified a link between the two. For example, research by Hernández-Linares, Kellermanns and López-Fernández (2020) and Tseng and Lee (2014) has revealed that dynamic capabilities influence SME firm performance. SMEs are said to have a more personal relationship with their customers, which makes it easier for SMEs to understand them and obtain necessary information (Coviello, Brodie & Munro 2000; Hisrich 1992). Additionally, SMEs that have developed dynamic capabilities can resolve and overcome any competence traps that negatively influence SME firm performance (Liao, Welsch & Stoica 2003).

Research in SME dynamic capabilities is limited due to the fact that developing dynamic capabilities is said to require an extensive number of resources (Palmié, Lingens & Gassmann 2016)—which SMEs do not possess. However, high vulnerability and weak market power, by which SMEs are characterised, signify that SMEs must be flexible to external market changes and that they should adapt accordingly (Wang & Shi 2011). Therefore, dynamic capabilities for SMEs are important because unlike MNEs, SMEs may not be able to regularly update their resources in response to changing market conditions (Wang & Shi 2011).

In the context of SMEs, dynamic capabilities have yet to be studied in the same depth that large enterprises have been studied. For example, Inan and Bititci's (2015) study on organisational and dynamic capabilities observed that there is presently little research that attempts to understand the applicability of organisational capability theories in SMEs. Additionally, Ates et al. (2013), while also focusing on dynamic capabilities, noted that SMEs have specific characteristics (e.g., multitasking, informality and dependency on internal sources of financial growth) that render them different from large corporations; however, these differences are not adequately considered in dynamic capabilities research. More recently, this gap has been further highlighted by Hernández-Linares et al. (2020) and Randhawa, Wilden and Gudergan (2020). Therefore, this study is one of the few that apply the concept of dynamic capabilities in the context of SMEs.

According to Teece et al. (1997), dynamic capabilities influence competitiveness by allowing firms to match their resource base to the changing nature of the environment. Further, Eisenhardt and Martin (2000) indicated that dynamic capabilities help improve performance by creating market changes, while Makadok (2001) argued that they help support capability building and rent-generating mechanisms. In brief, dynamic capabilities enhance firm

performance by allowing firms to improve their levels of effectiveness and efficiency and the speed at which they can respond to disturbances in their environment (Chmielewski & Paladino 2007; Hitt et al. 2001).

The literature on dynamic capabilities provides empirical support and consistently argues that firm performance is positively affected by dynamic capabilities across various sectors (Cavusgil et al. 2007; Eisenhardt & Martin 2000; Teece & Pisano 1994; Teece et al. 1997; Zahra et al. 2006). For example, many studies (e.g., Adner & Helfat 2003; Narasimhan et al. 2006; Yalcinkaya et al. 2007) have linked firms with dynamic capabilities to significantly higher levels of financial performance compared to firms that lack such capabilities. Lin and Wu (2012), through a study that focused on the top 1,000 Taiwanese companies, found that firms with dynamic capabilities could use their valuable, rare, inimitable and non-substitutable resources (Teece et al., 1997) to improve their financial performance. Dynamic learning capability was found to have the most significant influence on performance (Lin & Wu 2012). However, almost all studies mentioned above have been conducted in large firms.

In another study, Makkonen et al. (2014) investigated the effect of dynamic capabilities on firm performance during the global financial crisis of 2008. The study covered firms in food processing, maritime and media industries. Findings indicated that firms with sensing capabilities could actively monitor the environment and maintain resources that permitted the efficient maintenance of business, despite the diminishing business volumes during the crisis (Makkonen et al. 2014). Conversely, firms that both lacked environmental sensing capabilities and focused on internal efficiency nearly collapsed due to the effects of the economic downturn. In a similar study that targeted MNEs, it was found that return on assets during the crisis period fell by three to five per cent (Fainshmidt, Nair & Mallon 2017). However, MNEs with stronger dynamic capabilities that were associated with asset management displayed higher levels of resilience in terms of the ability to handle business environment changes, in addition to exhibiting better performance (Fainshmidt, Nair & Mallon 2017). Although there is substantial evidence for the direct link between dynamic capabilities and firm performance in the case of MNEs, the same has not been established in the context of SMEs. It has been previously identified that SMEs operate in a different environment compared to large firms (D'Aveni et al. 2010; Sirmon et al. 2010). Therefore, evaluating how dynamic capabilities influence firm performance in the case of SMEs is crucial. Table 2.4 displays the critical differences of research that has been conducted in MNEs and SMEs, underscoring how little depth exists in dynamic capabilities research in SMEs.

Table 2.4: A Summary of the Key Characteristics of Dynamic Capabilities Research in SMEs and MNEs

Large Multinational Firms	SMEs
• Firms manage to respond to change in a timely manner, develop innovative products and coordinate and redeploy internal and external competencies in highly dynamic environments. • The strategic alternatives that are available to a firm are a product of its current evolutionary position. • The main role of dynamic capabilities is to change the firm's key internal components. • Firms can gain and release resources that allow for the renewal of management processes that enhance operational performance and facilitate the integration of new environmental requirements. • Dynamic capabilities permit the firm to respond to fundamental changes in its environment and reposition itself after a destabilising or disruptive event. • Dynamic capabilities are directly linked to competitive advantage and high performance. • Dynamic capabilities alter the firm's resource base in an effective manner due to the process of routinisation that occurs at the strategic level rather than at the operational level, indicating that dynamic capabilities lead to the development of knowledge reconfiguration capabilities. • Firms with dynamic capabilities develop patents through effective research activity, which positively influences innovation and their performance in competitive markets (and thus yields more economic returns). • Firms with dynamic capabilities can make successful investments through their knowledge assets. • Dynamic capabilities allow the firm to enhance its customer relationship capabilities and thus lead to greater firm performance.	• SMEs that have developed dynamic capabilities can resolve and overcome any competence traps that negatively influence SME firm performance. • Developing dynamic capabilities is said to require extensive resources that SMEs do not possess. • SMEs may not be able to regularly update their resources in response to changing market conditions. • SMEs have specific characteristics (e.g., multitasking, informality and dependency on internal sources of financial growth) that make them different from large corporations; however, these differences are not adequately considered.

2.4 Organisation Structure

Structure, at the general level, refers to the relationships between the components of an organised whole (Morin 1990). At the organisational level, structure plays an important role as the framework that links jobs, systems, people, operating process and groups that are required to achieve the set goals. Structure also assists in the division of tasks and subsequent determination and coordination of duties. This section investigates the key issues of organisation structure and its relationship with dynamic capabilities, competitive advantage and firm performance.

2.4.1 History and Overview of Organisation Structure

Comprehensive efforts to study the nature of organisation structure and its implications can be traced to Chandler's (1962/1977, 2003) texts on strategy and structure and the work of Burns and Stalker (1961). Through an investigation of American firms (e.g., Sears, DuPont and General Motors), Chandler concluded that an organisation's environment influences the strategy to be adopted and, consequently, the organisation structure, which in turn influences the level of economic efficiency. Further, Chandler (2003) suggested that an organisation's growth necessitates a shift from a unitary structure to a multidivisional structure, which helps simplify information processing and decision-making. However, Chandler (2003) also noted that the choice of an organisation structure affects control—in that adopting multidivisional structures results in losing control during the decentralisation process.

In support of Chandler's (1962/1977) works, Mintzberg (1992) also asserted that an organisation's adopted strategy and the extent to which it practises it could lead to the adoption of one of the five structural configurations: simple structure, machine bureaucracy, professional bureaucracy, divisionalised form and adhocracy. Earlier work by Burns and Stalker (1961) also purported that an organisation's environment plays a role in determining the optimal organisation structure (organicity). According to the two authors, firms can operate based on one of two types of structures: organic and mechanistic. The two structures represent two ends of a continuum.

Further review of the organisation structure literature indicates that some of the more recent studies have differed from Chandler's prescriptive view and conception of organisation structure. First, it has been argued that the strategy–structure elements imply the presence of a one-way relationship, though research has essentially demonstrated that structure also significantly influences strategy by affecting the way that information is gathered and processed

(Engdahl, Keating & Aupperle 2000; Kessler, Nixon & Nord 2017). This emergent viewpoint thus suggests that the relationship between strategy and organisation structure is far more complex. Second, it has been argued that the relationship between structure and economic outcomes may be 'efficiency' (Geiger, Ritchie & Marlin 2006). In brief, achieving economic efficiency is an outcome of the interaction between strategy and structure, but it depends on whether a valid strategy for the environment in question has been adopted.

Work on organisation structure can also be traced to certain notions of the most appropriate organisational designs that firms should adopt. Li (1997) outlined that organisations have to consistently balance between dichotomous aspects such as the choice between globalisation and centralisation, empowerment or central control, efficiency or effectiveness, process integration or spatial separation. Firms can also achieve optimal structure when there is a functional and structural formation of dimensions within the firm (van de Ven, 1976). Similarly, Gregsov (1989) has noted that organisation structure is necessary to ensure reduced inter-organisational conflict and enhance performance metrics. Collectively, these studies have emphasised the need for an appropriate organisation structure that reflects the nature of the business environment to achieve the desired performance outcomes.

Since the pioneering studies by Chandler (1962/1977) and Burns and Stalker (1961), the research literature has suggested that an organisation's structure could assume the form of functional structures, multidivisional structures (M-form), matrix structures, N-form structures, hybrid (alliance) structures and team structures (Foss & Mahoney 2010; Hedlund 1994; Romelaer & Beddi 2015). Organisation structure has further been simplified based on the required level of complexity and stability in the organisation's environment (see Figure 2.3).

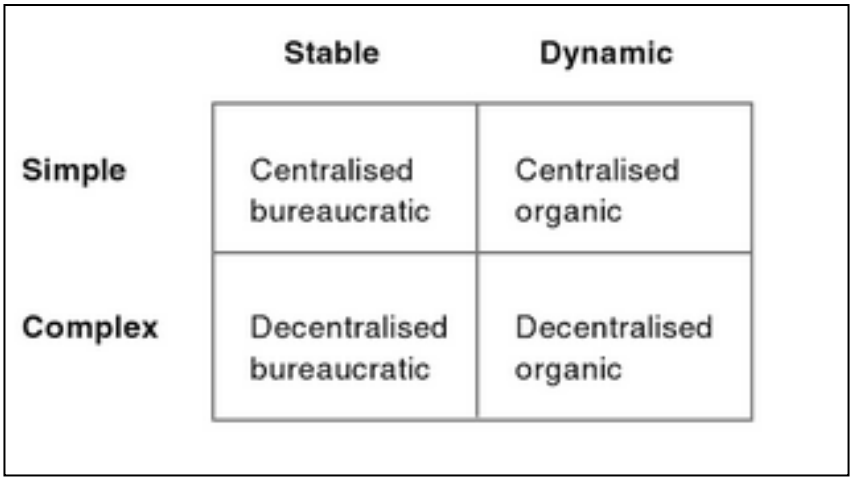

Figure 2.3: Options for Organisation Structure

Source: Analoui and Karami (2003)

2.4.2 Conceptualisation of Organisation Structure

2.4.2.1 Definitions

Several definitions have been posited to describe organisation structure. Mullins (1999, p. 520) stated that 'structure is the pattern of relationships among positions in the organisation and among members of the organisation'. Based on this definition, Mullins (1999) further explained that adopting a particular organisation structure allows the management to create a framework of order and command, which enables the planning, organising, directing and controlling of activities. Further, Nahm Vonderembse and Koufteros (2003) asserted that organisation structure describes how responsibility and power in an organisation are allocated, as well as the approach through which work procedures are undertaken among members of the organisation.

From another perspective, organisation structure has been perceived as 'the nature of layers of hierarchy, centralization of authority and horizontal integration' (Hao, Kasper & Muehlbacher 2012, p. 38). Organisation structure is also concerned with work division and communication/coordination mechanisms. The structural variables of work division comprise roles and responsibilities (including specialisation, differentiation, centralisation or decentralisation) and complexity, while coordination mechanisms entail aspects such as standardisation, formalisation and flexibility (Hao et al. 2012). Table 2.5 summarises some of the key definitions of organisation structure as posited by different authors.

Table 2.5: Definitions of Organisation Structure

Author	Definition
Mintzberg (1979, p. 2)	The structure of an organisation is the sum total of the ways in which it divides its labour into distinct tasks and then achieves coordination between them.
Simon (1997, p. 124)	Organisation structure defines how information flows and is aggregated inside the organisation thus permitting the organisation to accomplish goals that would be unattained by individual members.
Golembiewski (2000, p.547)	An organisation structure can be defined as a relatively persistent and enduring set of agreements that transcend the idiosyncrasies of the individual members involved.
Greenberg (2011, p. 85)	An organisation's structure is the formal configuration between individuals and groups regarding the allocation of tasks, responsibilities and authority within the organisation.

As evident from Table 2.5, some definitions (e.g., by Mintzberg 1979; Greenberg 2011) suggest that an organisation structure is something that organisations determine on their own—and thus the ability to divide labour into distinct tasks. Scholars such as Knights and Willmott (2007)

criticised this approach on the basis that choosing an organisation structure is influenced by both internal factors (e.g., firm size) and external factors (e.g., industry norm). For example, they argued that structure is designed and continuously modified through a process of conflict and struggle, in which different members of the organisation (e.g., managers and employees) resist or accommodate forms of control and pressure.

2.4.2.2 Types of Organisation Structures

Burns and Stalker (1961) identified two types of organisation structures: organic and mechanistic. Organic structures are generally characterised by their orientation towards adapting to changes, their open communication and consensual decision-making and their loosely controlled nature. In contrast, mechanistically based structures assume a more traditional approach, in which tight control and hierarchies are maintained (Covin & Slevin 1990; Slevin & Covin 1990). Similarly, Jogarathnam and Tse (2006) described an organisation characterised by an organic structure as one that allows less strict task differentiation, less clarity in the hierarchy and a relatively high degree of autonomy. This contrasts the mechanistic structure, which exhibits a high degree of specialisation, labour division and the use of a vertical approach to communication, centralisation of authority and lower levels of autonomy among subordinates. Table 2.6 summarises the main differences between organic and mechanistic organisation structures.

Table 2.6: Differences between Organic and Mechanistic Structures

Dimension	Organic	Mechanistic
1. Channel of communication	Channels are open and permit the free flow of information.	Channels are highly structured, with a restricted flow of information.
2. Operating approach	Approach allows for variations to occur.	A uniform operating approach that is restricted is required.
3. Authorisation of decision-making	Decisions are made on the basis of individual expertise.	Decision-making is based on formal management.
4. Approach to accomplishing tasks	Minimal constraints are imposed by formal procedures.	Operations are based on tried and true management principles.
5. Nature of control	Control is loose and informal.	Control is tight and set through sophisticated control systems.
6. On-the-job behaviour	Employees are allowed to exercise flexibility based on the job at hand.	There is a requirement to conform to job descriptions.
7. Consensus	Employee participation and group decision-making are allowed.	Superiors are charged with the decision-making role and engage in minimal consultation and involvement with subordinates.

Note: Adapted from Covin and Slevin (2003).

Organic and mechanistic structures have been suggested as being suitable in different organisational contexts. For example, Burns and Stalker (1961) maintained that in organisations that operate on the same organisational routines and experiences, small or non-existent changes to a formal management control system is most suitable. Ouchi (1979) empirically supported this view by revealing that mechanistic structures facilitate effective operations in stable environments. However, earlier findings suggested that mechanistic structures were less suitable in organisational contexts that are marked by rapid changes and uncertainty in the context of MNEs. Information processing theory within this context suggests that under high levels of uncertainty, flexibility in communication and coordination are necessary, thus revealing the need for organic structures (Olson et al. 1995).

However, other studies seemingly question the belief that mechanistic structures are not suitable for dynamic environments. Mechanistic structures in the SME context have been found to play an important role in providing the discipline that is required to help manage uncertainty in dynamic settings (Davila et al. 2009; Lopez-Valeiras et al. 2016). Another similar finding was noted in the context of SMEs in which decentralised decision-making was found to be more suitable for SMEs in turbulent environments, but only when complemented with a formal structure in the firm (Cosh, Fu & Hughes 2012). Moreover, Adler and Borys (1996), while distinguishing between coercive and enabling bureaucracy, found that MCSs may be instrumental in facilitating a systematic innovation process.

It is crucial to point out here that organicity of firm is not considered a dynamic capability, but rather a factor that facilitates "realization of the potential advantage accruing to dynamic capabilities" (Wilden et al., 2013, p. 75). More importantly, the present study perceives, in line with Wilden et al. (2013) that the structure of the organisation provides the necessary conditions for the firm to extract value from dynamic capabilities.

2.4.2.3 Conceptual Confusions Regarding an Organisation Structure

From the review of extant literature, one main confusion pertains to the type of organisation structure (mechanistic or organic) that organisations in various contexts should adopt (Galbraith 2007; Kim & Umanath 1992). The information processing model as posited by Tushman and Nadler (1978) attempts to alleviate this confusion. The model introduces the concept of information processing in an organisation as a potential explanation for the need to match context and structure to achieve optimal organisational performance. It suggests that since managers require information to cope with uncertainty and the equivocality of work-related tasks, the task characteristics should act as a determinant of the information processing needs (Ashill & Jobber 2010). The model further posits that formal information processing mechanisms are instrumental in augmenting the organisation's information processing capability (Kim & Umanath 1992).

In determining information processing needs, organisations should consider the volume and richness of information that is required and match it with an appropriate structure (Tushman & Nadler 1978). Last, the information processing model predicts that whenever a mismatch occurs between an organisation's information processing needs and the chosen structure, the outcomes may include excessive costs, delayed decisions or inappropriate decisions (Burton & Obel 2013). On the basis of the model, Piercy and Evans (2014) suggested that organisations that are characterised by units that face complex tasks or a changing environment should adopt more organic structures compared to organisations with units that face routine tasks or that operate in stable environments. Therefore, organic structures are perceived to offer greater information processing capacity compared to mechanistic structures.

An evaluation of the organisation structure literature indicates that earlier research, particularly from the 1980s and 1990s, was characterised by increased levels of criticism towards the mechanistic structure. Despite the mechanistic structure's contribution to the development of strategy, the tenets and assumptions from which it was built were increasingly being questioned. Specifically, existing studies expressed their concern that the simple assumptions of mechanistic structure in a relatively stable and predictable world contradicted the complex and

constantly changing environment that organisations faced (Covin & Slevin 1988). Critics thus labelled the mechanistic structure as static, fragmented and thus less useful in the dynamic business environment that demands high levels of responsiveness and adaptability (Henderson & Mitchell 1997; Kessler, Nixon & Nord 2017; Schendel 1994).

In the context described above, previous works have further highlighted several ways that the mechanistic structure differs from organic structure, which may render it less effective in the present day. First, it has been argued that the perception of time in mechanistic structure is discrete or synchronic, in that it is based on a single occurrence at a particular time. Using the mechanistic structure thus pays little attention to past and future processes and their implications (Schendel 1994). In contrast, the organic structure is regarded as being based on a diachronic perception of time, in which case concepts and relationships in the organisation are considered a part of a continuous and iterated process (Ramezan 2011).

Second, the literature claims that mechanistic and organic structures adopt divergent approaches regarding the directional perspective of flow. In mechanistic structures, events and causality are approached from a linear and sequential perspective that leads to the adoption of a deterministic cause of behaviour (Bourgeois 1984). The main issue associated with this deterministic approach is that it leads to managers and other organisational leaders paying less attention to interactions and feedback (Farjoun 2002). Therefore, the organic structure is considered a more superior approach, in that it offers a platform from which organisational members can interact freely and obtain feedback through the elimination of hierarchies.

2.4.3 Outcomes of Organisation Structure

The existing literature on organisation structure is replete with studies that involve organisation structure playing a direct or moderating role between different organisational aspects and performance. Covin and Slevin (1988) conducted a study that explored the moderating effect of an organisation structure (organicity) on the relationship between top management entrepreneurial orientation and SME firm performance The organisation structure was measured on a continuum of organicity and used an organisation structure score (organicity level), in which lower scores indicated a structure more mechanistic in nature (lower organicity) and higher scores indicated a structure more organic in nature (high organicity). This measure has been widely used by other scholars (Covin et al. 1990; Green et al. 2008; Miles et al. 2000). Burns and Stalker (1961) have previously argued that organic structure supports the entrepreneurial style while mechanistic structure hinders its success. Geller (1980) and Kessler, Nixon and Nord (2017) have reported similar results.

Empirical studies have also suggested that an organisation structure (organicity) affects a firm's financial performance indirectly through organisational learning. Firms that promote an interpersonal network structure have been demonstrated to also promote organisational level learning (Fang et al. 2007). In an earlier study, Fernández et al. (2012) found that a centralised and formal structure is weakly related to absorptive capacity. In terms of the link to organisational financial performance, the literature indicates that firms with a learning orientation are stimulated to adopt market-oriented behaviour and form long-term relationships with strategic partners—which attests to their better organisational performance (Brown 2014; Wei et al. 2014; Wong, Cheung & Fan 2008; Yilmaz et al. 2005). However, some scholars have expressed caution regarding the level of decentralisation that a firm should adopt. For example, Simons (2000) argued that the excessive decentralisation of decision-making in organisations could lead to losing control of the employees, especially at the bottom of the organisation's hierarchy. The ensuing result would include dysfunctional behaviour that leads to the inefficient use of company resources and, consequently, poor performance. In contrast, Foss, Lyngsie and Zahra (2013) argued that decentralisation is associated with opportunity realisation and discovery and that it provides greater autonomy to managers.

However, it can be noted that much of the above research has not been conducted in the context of SMEs. Some research that did focus on organisation structure in the context of SMEs discovered that in the case of business services and manufacturing, SMEs displayed higher performance when they had decentralised structures (that is, they are more organic in nature) (Meijaard, Brand & Mosselman 2005). However, unlike in the case of MNEs, Meijaard et al. (2005) noted that the organisation structure score for SMEs (i.e., the organicity level) is not standard across SMEs in the same sector. In brief, the authors have debunked the notion that SMEs are all informally structured.

One of the main classifications of organisational innovations includes technical and administrative innovations (Hekkert et al. 2007). Technical innovations involve altering the process by which a firm produces and delivers products and services by introducing new techniques. These innovations are observable and measurable in terms of their economic effects on the organisation. Technical innovations can further be classified as either incremental or radical. Incremental innovations are reflected through minor changes in the design of organisational systems and contribute positively towards cost reductions and functionality enhancements (Tushman & O'Reilly 1996). In contrast, radical innovations alter the basic activities that create technological cycle combinations. Based on previous findings, organic structures influence technical innovation performance more greatly than mechanistic structures

in the context of MNEs (Artto et al. 2011; Burton et al. 2019; Foss, Lyngsie & Zahra 2013; Menguc & Auh 2010; Sisaye & Birnberg 2010; Ylinen & Gullkvist 2014). This is because organic structures have a horizontal hierarchy, a limited chain of command and little differentiation, which all collectively facilitate the flow of innovation and dissemination of innovation (Burns & Stalker 1961).

Administrative innovations describe changes to how the organisation is managed in relation to aspects such as the structuring of tasks, recruitment and resource allocation. Such innovations directly affect work groups and the entire organisation through the improvement of internal controls, administrative processes and departmental coordination (Elenkov et al. 2005; Kaplan & Norton 2001). Based on the research by Daugherty et al. (2011) and Sisaye and Birnberg (2010), mechanistic structures have been shown to influence administrative innovation performance more significantly than organic structures. Such influence has been attributed to the ability of mechanistic structures to support the formation of functional structures that facilitate better processing of non-complex, routine and repetitive large-scale tasks (Kessler, Nixon & Nord 2017; Ramezan 2011).

Firms with organic structures that are characterised by decentralisation in decision-making have further been associated with leadership that supports the entrepreneurial spirit of organisations in aspects such as risk-taking (Covin & Slevin 1990). In such organisations, new ideas are encouraged and supported—and thus lead to better opportunities for engaging with new product development and other innovative practices (Covin & Slevin 1990). Therefore, organic structures contribute positively to innovation performance through their support for risk-taking. Miles and Arnold (1991) and Russell (1999) also claimed that decentralised and informal structures play an important role in empowering lower-level managements and in triggering an increased participation from team members. Collectively, these aspects positively influence innovation.

There is a general consensus among researchers that, in stable environments, mechanistic structures are more efficiently placed than organic structures to promote operational efficiency (Covin et al. 2006; Slevin 1990). High levels of operational efficiency are achieved through reliance on written rules, procedures and policies. The techniques that should be followed during the decision-making process are also well specified, which entails minimal ambiguities that could hinder the firm's operations (Hao et al. 2012). It is for this reason that mechanistic structures tend to prevail in production-oriented organisations. In these organisations, procedures that are well laid out promote the efficient processing of non-complex, routine and

repetitive tasks (Sisaye & Birnberg 2010). In contrast, organic structures are designed to ensure flexibility through the use of minimal procedures. Consequently, organic structures lack the stability that is required to ensure the efficient performance of routine tasks (Covin & Slevin 1990).

From another perspective, the ability to achieve efficiency in dynamic environments depends on whether an organisation possesses dynamic flexibility and adaptability capabilities (Waldersee et al. 2003). In this context, the organic organisation is associated with dynamic capabilities that successfully position the firm to respond to change. Such capabilities include flexibility and informal organisation, which increase efficiency through open communication channels that permit an easy flow of information throughout the organisation (Covin et al. 2006). Mechanistic structures are conversely considered to hinder higher levels of efficiency because of their bureaucratic processes (Ramezan 2011). As such, efficiency during changing and challenging times is best achieved through organic structures. Indeed, there is an inherent association between organicity of the firm and its ability to derive value from dynamic capabilities as the structure of the organisation determines how a firm responds to external changes (i.e, sensing, seizing, and reconfiguration) (Wilden et al., 2013).

Costs are a key determinant of the ability to achieve a competitive advantage in highly competitive markets (Yang et al. 2010). Firms that seek to compete in such markets effectively must ensure that they manage their costs in the most efficient manner along the entire supply chain. Lean management has been highlighted as an approach that assists in the management of costs. It focuses on increasing the value of a product, service or process by reducing the elimination of wastes along the value chain (Martínez-Jurado & Moyano-Fuentes 2014).

Through a study that focused on the enabling factors for lean strategy in SMEs, Hu et al. (2015) found that a lean strategy requires effective communication levels throughout the organisation and between functions and departments. Similarly, Dowlatshahi and Taham (2009) found that a lean strategy in the form of just-in-time implementation was achieved in SMEs that possessed a strong ethos of cohesiveness and that were not restricted by functional boundaries that limited opportunities for direct communication. Efficient communication and greater teamwork are associated with organic structures and promote a positive association between lean operations and organic structures.

From another perspective, mass customisation constitutes one of the approaches to lean operations that seek to manage the trade-off between product variety and mass efficiency. In mass customisation, the firm can fulfil individual customer requirements at a significantly lower

cost (Stump & Badurdeen 2012). Concerning an organisation structure's influence on mass customisation, empirical research indicates that organic structures play a significant role in enabling firms to pursue mass customisation capability. The positive relationship between the two attributes can be linked to the belief that mass customisation capabilities require the elimination of hierarchical layers of management, the presence of a high degree of employee participation and high cross-functional integration.

While accounting for mechanistic structures, several studies have argued that the presence of formal procedures comprising best practices—which have been learned from experiences—play a major role in reducing ambiguities and providing a platform from which employees can effectively manage the various contingencies in their tasks (Adler & Borys 1996; Jansen et al. 2006). In support of this claim, Cordon-Pozo et al. (2006) observed that due to the specific behavioural directives for organisational members, mechanistic firms could generate cost savings in the form of reduced time and money wastage.

The high degree of formalisation in mechanistic structures has mainly been associated with low-cost strategies (Claver-Cortés et al. 2012). This link between mechanistic structures and low-cost strategies is the result of several factors. First, organisations that seek to achieve competitive advantage through cost leadership often emphasise high levels of efficiency. The centralised formal structures in mechanistic organisations ease the process of achieving the desired level of efficiency (Nandakumar et al. 2010). Second, the formal rules and procedures that characterise mechanistic organisations often help the organisation standardise its activities and minimise its administrative costs, which in turn leads to higher profit margins (Miller 1986).

However, several studies have suggested that mechanistic structures could also lead to competitive advantage through differentiation. For example, it has been argued that the well-articulated rules and regulations in mechanistic structures critically assist in facilitating the circulation of knowledge that is produced by different organisational units—knowledge that can be nurtured into new ideas and perspectives (Cohendet et al. 2004). In agreement with this notion, Okhuysen and Eisenhardt (2002) explained that in the absence of a formalised structure, organisational attempts to achieve differentiation will be disorganised, sporadic or ineffective.

In contrast, decentralisation tends to be associated with differentiation strategies of competitive advantage in organisations that maintain organic structures (Zheng et al. 2010). The rationale for such an association is that in decentralised structures, organisational members can engage in the process of strategic reflection. Additionally, more individuals throughout the organisation become involved in the decision-making process. It has been argued that such involvement is

important for creating a rich internal network of diverse knowledge resources (Chen et al. 2010). These knowledge resources can increase an organisation's levels of differentiation or reduce costs. Studies that link decentralisation with differentiation have also argued that centralisation significantly reduces the ability of organisational members to seek new and innovative solutions (Damanpour & Schneider 2006). A differentiation strategy in this context requires the firm to undertake a series of complex tasks—and thus a less formal structure that allows for enhanced interactions is more likely to promote better performance (Russell & Russell 1992).

Emerging from the above literature is the argument that organic and mechanistic structures can be used in a manner that supports the adoption of a hybrid competitive strategy. In such a strategy, firms can combine low cost and differentiation strategies and thereby promote the organisation's optimal performance (Claver-Cortés et al. 2012). However, it should be noted that some scholars object to this notion of firms adopting hybrid competitive strategies. Hakikur (2007) argued that mixing cost leadership and differentiation strategies increases the risk that a firm will lack a clear position in the market, which links to the likelihood of inferior competitive performance. Average performance may also be experienced since the two generic strategies tend to have different trade-offs (Parnell 2013). Further, a firm's oscillation between cost and differentiation strategies could over time confuse the customers' image of the firm (Zahay & Griffin 2010). This increases the firm's risk of losing credibility and reputation.

While considering organisation structure, the research literature indicates that firms with organic structures are more entrepreneurial and thus more willing to adapt to their customers' needs. The flexible organic structure also signifies that employees are free to share their ideas, which can be used to identify how customer needs can be solved efficiently (Wilden et al. 2013). In contrast, the centralised nature of the mechanistic structure reduces entrepreneurial orientation and innovativeness, which are both necessary for adapting to customer needs. Such unresponsiveness is attributed to the presence of written rules, regulations and job descriptions (Green & Cluley 2014; Tavitiyaman et al. 2012; Wilden et al. 2013). Through a study of the hotel industry in Japan, Tajeddini (2014) empirically discovered that the hotels that adopted mechanistic structures were less responsive to customer needs. The high levels of unresponsiveness were linked to an organisation structure that resulted in employees possessing less authority, limited power to handle complaints and no platform from which to share ideas.

Overall, it is worth noting that much of the research discussed above was conducted in MNEs due to their large size and the usual presence of a mechanistic structure. SMEs have received

less focus in this domain due to their relatively small size and the myth that all SMEs have flat and organic structures (Meijaard, Brand & Mosselman 2005). However, some research has found that organic structures are preferable for SMEs in terms of obtaining a host of performance-related benefits (Dowlatshahi & Taham 2009; Hu et al. 2015).

2.5 Entrepreneurial Orientation

2.5.1 History and Overview

Works by Mintzer (1979) and Khandawalla (1977) laid the foundation that led to the development of the entrepreneurial orientation concept, with predictions linking firm performance to strategic choices and characteristics of organisations (Anderson et al. 2015). Outlining the entrepreneurial nature of firms and the strategies that they adopt, Mintzer (1979) and Khandawalla (1977) highlighted that such firms are more successful than their counterparts due to their aggressive approach to market entry and a keen understanding of the strategic risk profile. Drawing a distinction between entrepreneurship and entrepreneurial orientation, Lumpkin and Dess (1996) noted that entrepreneurial orientation is defined by a set of processes, actions and choices, whereas entrepreneurship is a singular act of new market entry. However, not all strategic decisions are characteristics of entrepreneurial orientation. For example, firms must satisfy the conditions of risk-taking, proactiveness and innovation to be considered entrepreneurially oriented (Miller 1983). Another distinction between entrepreneurship and entrepreneurial orientation stems from the latter being a firm-level phenomenon rather than an individual-level phenomenon (Lumpkin & Dess 1996). Building on this notion, Covin and Slevin (1989) placed firms on a continuum that ranged from conservative to entrepreneurial so that they could identify the firms' behavioural patterns (which must be consistently entrepreneurial for firms to be considered entrepreneurially oriented). Therefore, in Covin and Slevin's (1989) conceptualisation of entrepreneurial orientation, the temporal nature of entrepreneurial behaviours must be satisfied as a precondition for being classified as entrepreneurially oriented.

The theoretical underpinnings of entrepreneurial orientation lie in a body of literature that focuses on the strategy-making process (Wales 2016), in which it is said that firms engage in decision-making and strategic behaviours and adopt managerial philosophies that are entrepreneurial in nature (Anderson et al. 2009). These strategic behaviours that firms must adopt include autonomy, innovativeness, risk-taking, proactiveness and competitive aggressiveness for Lumpkin and Dess (1996) and risk-taking, innovativeness and proactiveness for Miller (1983) and Covin and Slevin (1989). Miller (1983) further conceptualised that these

three dimensions must covary with one another for entrepreneurial orientation to manifest, while Lumpkin and Dess (1996) conceptualised that the five dimensions did not need to covary with one another. The fundamental difference between Miller (1983) and Lumpkin and Dess's (1996) conceptualisations of entrepreneurial orientations lies in the fact that Miller considers entrepreneurial orientation a phenomenon, whereas Lumpkin and Dess consider it a domain-specific factor (Covin & Wales 2012, 2018). Scholars regard the view developed by Miller (1983) and then by Covin and Slevin (1989) as the dominant conceptualisation of entrepreneurial orientation (Anderson et al. 2015; Rosenbusch et al. 2013). Therefore, entrepreneurial orientation manifests when a firm is innovative, proactively tries to enter new markets and displays a willingness to take risks (Anderson et al. 2015).

2.5.2 The Conceptualisation of Entrepreneurial Orientation

Several scholars have defined the concept of entrepreneurial orientation to try and conceptualise it. The earliest conceptualisation of entrepreneurial orientation was outlined by Mintzberg (1979, p. 45) as 'in the entrepreneurial mode, strategy-making is dominated by the active search for new opportunities' and as 'dramatic leaps forward in the face of uncertainty'. Further, Khandawalla (1976, p. 25) defined entrepreneurial orientation as 'The entrepreneurial [management] style [that] is characterized by bold, risky, aggressive decision-making'. Though not using the term 'entrepreneurial orientation', Miller (1983, p. 771) used the definition of 'an entrepreneurial firm is one that engages in product-market innovation, undertakes somewhat risky ventures, and is first to come up with "proactive" innovations, beating competitors to the punch'. Covin and Slevin (1998, p. 218), expanding on the work by Miller (1983), defined entrepreneurial orientation as:

> Entrepreneurial firms are those in which the top managers have entrepreneurial management styles, as evidenced by the firms' strategic decisions and operating management philosophies. Non-entrepreneurial or conservative firms are those in which the top management style is decidedly risk-averse, non-innovative, and passive or reactive.

In contrast, Lumpkin and Dess (1996, pp. 136–137) defined entrepreneurial orientation as referring 'to the processes, practices, and decision-making activities that lead to new entry' as characterised by one or more of the following dimensions: 'A propensity to act autonomously, a willingness to innovate and take risks, and a tendency to be aggressive toward competitors

and proactive relative to marketplace opportunities'. Additionally, several definitions have emerged based on the above conceptualisations and are presented in Table 2.7.

Table 2.7: Definitions of Entrepreneurial Orientation

Authors—other than Covin and Slevin (1986) and Lumpkin and Dess (1996)	Definition
Zahra and Neubaum (1998, p. 124)	Entrepreneurial orientation is 'the sum total of a firm's radical innovation, proactive strategic action, and risk-taking activities that are manifested in support of projects with uncertain outcomes'.
Avlonitis and Salavou (2007, p. 567)	'Entrepreneurial orientation constitutes an organisational phenomenon that reflects a managerial capability by which firms embark on proactive and aggressive initiatives to alter the competitive scene to their advantage'.
Pearce, Fritz and Davis (2010, p. 219)	'An entrepreneurial orientation is conceptualised as a set of distinct but related behaviours that have the qualities of innovativeness, proactiveness, competitive aggressiveness, risk-taking, and autonomy'.
Voss, Voss and Moorman (2005, p. 1134)	Entrepreneurial orientation is a 'firm-level disposition to engage in behaviours that lead to change in the organisation or marketplace'.
Anderson et al. (2015, p. 1580)	Entrepreneurial orientation is defined as 'entrepreneurial behaviours and managerial attitude towards risk jointly and in totality comprise the conceptual domain of firm-level entrepreneurial orientation'.
Covin and Wales (2018, p. 3)	Entrepreneurial orientation can be conceptualised as an 'attribute of an organisation that exists to the degree to which that organisation supports and exhibits a sustained pattern of entrepreneurial behaviour reflecting incidents of proactive new entry'.

From Table 2.7, it can be concluded that entrepreneurial orientation has been defined as a behavioural action construct that potentially allows firms to develop dynamic capabilities. Additionally, firms that possess entrepreneurial orientation are known to perform differently than firms that do not possess it (Covin & Slevin 1989; Covin & Wales 2018; Lumpkin & Dess 1996; Richard et al. 2004; Wolff et al. 2015). Miller (1983), who first led the conceptualisation of entrepreneurial orientation, outlined three characteristics that firms possess: innovativeness, risk-taking and proactiveness. A firm is said to be risk-taking when the business leader engages in well-calculated risks that can potentially generate positive outcomes for the firm (Cai et al. 2014). Moreover, Covin and Slevin (1989) have highlighted that entrepreneurial orientation is demonstrated by firms that exhibit a higher pattern of pioneering decision-making during periods of uncertainty—which is in turn representative of an innovative firm rather than a conservative firm. A firm's innovativeness is demonstrated when the firm focuses on creating

new products and processes (Covin & Miles 2006). Some primary features of entrepreneurial orientation in firms include experimentation and creativity, which are related to introducing new services, products and process changes to maximise the firm's potential (Lumpkin & Dess 2001). Finally, proactivity is also a primary feature of entrepreneurial orientation, as it describes the initiatives that firms have in regard to taking action, which includes perceiving and seizing business opportunities (Covin & Slevin 1989; Covin & Wales 2012).

The difference between the concepts of entrepreneurial orientation and dynamic capabilities can be understood considering Teece (2007) who argues that a firm's capacity for innovation is limited. Thus, the capability of a firm to efficiently acquire and apply information is essential to its innovativeness (Cepeda-Carrion et al., 2012). Firms must be able to gain knowledge, integrate internal knowledge, and leverage newly developed knowledge if they are to understand environmental changes and capitalize on new opportunities (Helfat and Martin, 2015). Additionally, developing these skills allows the acquisition of additional knowledge necessary to leverage any available information, thus increasing the proactiveness of the corporation (Liao, Welsch, & Stoica, 2003). Firms with greater dynamic capabilities have robust communication routines among their personnel that enable them to synthesize divergent perspectives on a new opportunity and act quickly before the business opportunity closes or loses its attractiveness (Rothaermel & Alexandre, 2009). Additionally, companies with dynamic capabilities can more effectively leverage opportunities to counter rivals' risks, preventing these competitors from reacting to their actions, and reaping above-average returns on their actions (Engelen, Kube, Schmidt, & Flatten, 2014). They will predict a competitor's competitive behavior, mitigate the negative consequences of unexpected entrepreneurial initiatives, and contribute to the breadth and depth of information necessary for decision-making (Green et al., 2008), thus encouraging the autonomous individual creation of new innovative ideas.

2.5.3 The Measurement of Entrepreneurial Orientation

One of the primary methodological issues that arise in entrepreneurial orientation research is the debate regarding whether the construct is formative or reflective (Covin & Wales 2012, 2018; Covin et al. 2006). A reflective measurement is an approach that presumes that the latent construct (in this case, entrepreneurial orientation) gives rise to the measures that are observed (Fornell & Bookstein 1982). Conversely, a formative measurement is an approach that assumes that observed measures create or cause the latent construct (Diamantopoulos et al. 2008). Another key difference between the two measures is that in formative measures, the observed items are not interchangeable, as each item represents a core aspect of the latent construct's

conceptual domain; they thus cannot be substituted or eliminated without distorting the conceptual domain (MacKenzie et al. 2005). Following a detailed discussion, Covin and Wales (2012) noted that adopting a formative or reflective measurement for entrepreneurial orientation depends on the conceptual model adopted and the purpose of the study, while Anderson et al. (2015) stated that entrepreneurial orientation is inherently formative. In brief, if the researcher seeks to use entrepreneurial orientation as a latent construct in a structural model for hypothesis testing and theory development, then the researcher must adopt a reflective measure (Covin & Wales 2012; Wilcox et al. 2008). Additionally, Covin and Wales (2012) have noted that the measure developed by Covin and Slevin (1989)—which is based on the theoretical underpinnings of Miller (1983)—is a reflective measure. In brief, researchers using Covin and Slevin's (1989) scale must format their entrepreneurial orientation measure as a reflective-type measure.

Further, the dimensionality of the entrepreneurial orientation is also called into question, with many scholars suggesting that it is a unidimensional construct (Anderson et al. 2015; Covin & Slevin 1989) and others suggesting that it is a multidimensional construct (Lumpkin & Dess 1996). The scale developed by Covin and Slevin (1989) is measured as a first-order construct (unidimensional), which has been applied in this thesis. Conversely, Lumpkin and Dess's (1996) conceptualisation is measured as a second-order multidimensional construct. Additionally, Covin and Wales (2012) negated the criticisms associated with the dimensionality of the measure and stated that categorising entrepreneurial orientation as a composite measure would lead to a loss of information. Therefore, Covin and Wales (2012) suggested that entrepreneurial orientation should be used as a unidimensional measure.

2.5.4 Outcomes of Entrepreneurial Orientation

Organisations that adopt a strategic posture are marked by characteristics that are associated with innovation, proactiveness and a strong willingness to take risks—all of which are features of entrepreneurial orientation (Covin & Wales 2018; Kreiser et al. 2010). Therefore, it can be stated that entrepreneurial orientation is a strategic process that includes pursuing market opportunities to enhance organisational performance (Bamiatzi & Kirchmaier 2014; Covin et al. 2006; Green et al. 2008; Markin et al. 2018; Wiklund 1999). Firms that possess an entrepreneurial orientation thus often engage in practices such as innovating and establishing risky ventures (Cai et al. 2014).

Organisational performance as an outcome of entrepreneurial orientation has been extensively determined in prior research (Alegre & Chiva 2013; Davis et al. 2010; Gupta & Wales 2017;

Kreiser & Davis 2010; Markin et al. 2018; Shan et al. 2016; van Doorn et al. 2013). Gupta and Wales (2017) conducted a systematic literature review of research that had spanned 25 years, concluding that entrepreneurial orientation research has primarily focused on and established a positive relationship between entrepreneurial orientation and firm performance. Although the link between entrepreneurial orientation and organisational performance has been clearly established (Alegre & Chiva 2013; Davis et al. 2010; Kreiser & Davis 2010; Markin et al. 2018; van Doorn et al. 2013), little attention has been paid to the influence of entrepreneurial orientation on dynamic capabilities—with the exception of one study. Jiao et al. (2010) found that entrepreneurial orientation contributes to dynamic capabilities through the facilitation of organisational learning. More specifically, the study noted that organisational learning is a product of entrepreneurial orientation, such that it aids the development of dynamic capabilities through greater levels of innovation and proactiveness. Further, Jantunen et al. (2005) noted that firms that possess entrepreneurial orientation generally possessed higher capabilities of recognising opportunities at an early phase. Through entrepreneurial actions, these firms can also create opportunities and take advantage of them by reconfiguring their asset base. Additionally, past research by Kirzner (1997) and Denrell et al. (2003) has established a direct link between entrepreneurial orientation and dynamic capabilities. However, much of the research in this domain has been conducted in the context of MNEs, with very little exploration of how entrepreneurial orientation influences dynamic capabilities in the context of SMEs (Nakkua et al. 2020). Therefore, more research is required to outline the effects of entrepreneurial orientation on dynamic capabilities.

2.6 Chapter Conclusion

This chapter has presented the theoretical conceptualisations of each latent construct that is explored in this thesis. One core research gap that has been identified pertains to dynamic capabilities research in the context of SMEs, whereby it is believed that SMEs cannot develop dynamic capabilities. Another research gap in the context of time-based competitive advantage is that given the uncertain environment in which SMEs operate and the fierce competition they face, creating this type of time-based competitive advantage is critical. Despite the critical nature of time for small businesses with limited capital, research on strategic management has paid scant attention to the effect of resource management on growth. Furthermore, in terms of organisation structure, the organisation structure score for SMEs is not standard across SMEs in the same sector. SMEs have received less focus in this domain due to their relatively small size and the myth that all SMEs are flat and organic. In addition, the impact of entrepreneurial

orientation on dynamic capabilities has received limited attention. MNEs have been the subject of research in this domain. Additional research is essential to delineate the effects of entrepreneurial orientation on dynamic capabilities in SMEs. However, this thesis and a growing body of research in this domain reveal that this is not the case. Therefore, by anchoring the research in the context of SMEs, this chapter has also provided an insight into the research in regard to organisation structure, entrepreneurial orientation and time-based competitive advantage. In line with the theoretical underpinnings that were presented in this chapter, the next chapter outlines the development of the conceptual framework and introduces the hypotheses that will be tested in this thesis's research.

Chapter 3: Conceptual Framework and Hypotheses Development

3.1 Chapter Introduction

This chapter first embeds the research on dynamic capability theory and visualises the conceptual framework of the present study. It further explicates the relationships between dynamic capabilities, time-based competitive advantage and SME firm performance and identifies hypotheses for empirical testing. Further, the chapter also discusses the relationship between an organisation's structure, dynamic capabilities and time-based competitive advantage, as well as between entrepreneurial orientation, dynamic capabilities and time-based competitive advantage. The relevant hypotheses are then presented, and the chapter ends by discussing the controls and their influence on the conceptual framework.

3.2 Theoretical Framework Development

The conceptual framework adopted in this study (see Figure 3.1) draws on Teece et al.'s. (1997) concept of dynamic capabilities. The theory of dynamic capabilities is based on evolutionary economics, theorised by Nelson and Winter (1982), which considers firms as a set of interdependent routines that undergo continuous transformation based on performance metrics, underlie the theory of dynamic capabilities. Dynamic capabilities theory was first formally introduced by Teece and Pisano (1994), who sought to explain how firms managed to respond to change in a timely manner, develop innovative products and coordinate and redeploy internal and external competencies in highly dynamic environments. This framework evaluates the relationships between dynamic capabilities, time-based competitive advantage, entrepreneurial orientation, organisation structure (organicity) and SME firm performance. Using this framework, this study seeks to explore the mechanisms by which the dynamic capabilities of SMEs affect form performance through time-based competitive advantage. This thesis also seeks to examine the roles that organisation structure and entrepreneurial orientation play in developing and deploying the dynamic capabilities of SMEs.

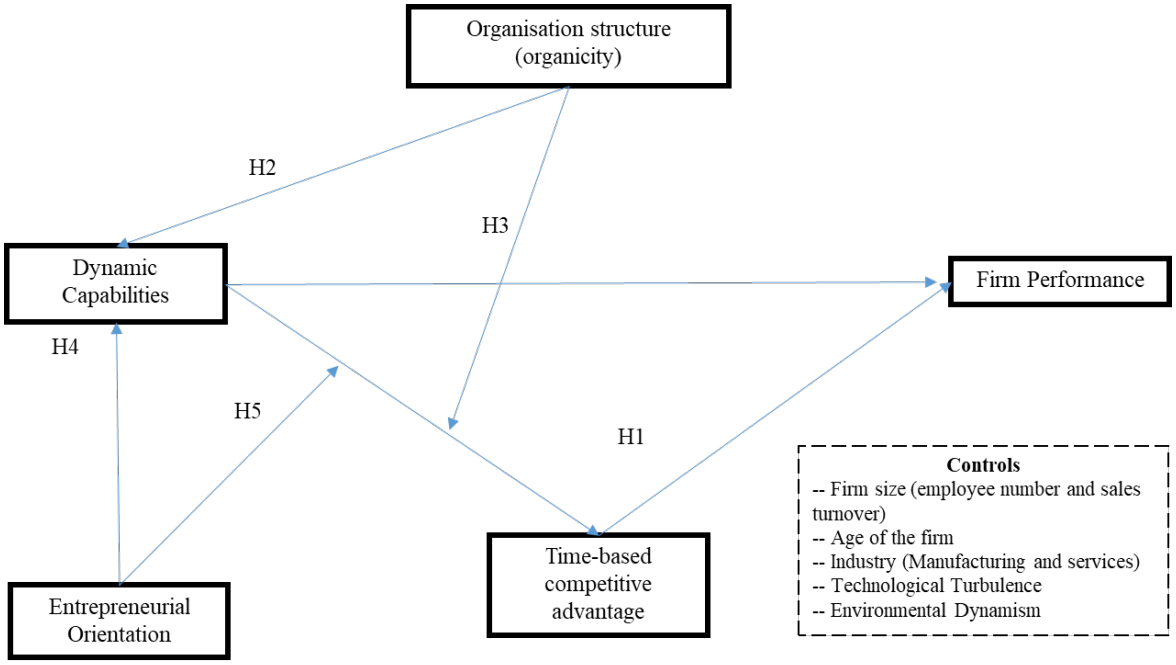

Figure 3.1: Conceptual Framework

Several reasons reinforce the present study's focus on SMEs. First, all firms generally need to adapt to changes in their business environment to remain successful (Helfat 1997). In unpredictable environments, SMEs—unlike larger organisations—may be challenged when revising their routines due to lacking the necessary knowledge and experience (Inan & Bititci 2015). Second, firm size is usually an indicator of the financial and managerial resources that are available to a firm (Sternad et al. 2013). The small size of SMEs compared to larger business organisations thus signify that they are disproportionately disadvantaged in terms of dynamic capabilities development (i.e., their access to the resources required to engage in sensing opportunities, seizing opportunities and reconfiguration of assets) (Tallon 2008). However, although limited empirical research exists in this context, this thesis extends the research of dynamic capabilities in the SME context.

Third, prior arguments have suggested that SMEs cannot have dynamic capabilities since such capabilities are supposed to develop over time (and many SMEs are young) (Sawers et al., 2008). However, recent studies have argued against this view (Arend 2014; Hernández-Linares et al. 2020; Randhawa, Wilden & Gudergan 2020; Villar et al. 2014). While considering these unique issues that characterise SMEs, it is imperative to offer additional evidence regarding how factors such as entrepreneurial orientation and organisation structure (organicity) may affect the development and deployment of dynamic capabilities. Therefore, the choice of SMEs for this study is appropriate, as it will provide a theoretical insight into how SMEs can use dynamic capabilities to increase firm performance.

This chapter develops and presents the study's conceptual framework in the context of SMEs. Based on this framework, several hypotheses regarding the relationships between the variables under consideration are presented. The chapter begins by reviewing the theoretical constructs and their relationships and then leads to the development of the study's hypotheses.

3.3 Relationships between Dynamic Capabilities, Time-Based Competitive Advantage and SME Firm Performance

There is evidence suggesting that dynamic capabilities strongly influence firm performance (e.g., Adner & Helfat 2003; Ambrosini & Bowman 2009; Cavusgil et al. 2007; Eisenhardt & Martin 2000; Fainshmidt, Nair & Mallon 2017; Lin & Wu 2012; Makkonen et al. 2014; Narasimhan et al. 2006; Teece & Pisano 1994; Teece et al. 1997; Yalcinkaya et al. 2007; Zahra et al. 2006). However, many of these studies have been conducted in the context of large firms, with only a limited focus on the SME context (Ates et al. 2013; Inan & Bititci 2015). For example, Fainshmidt, Nair and Mallon (2017) identified how dynamic capabilities affect MNE performance. In light of this, due to the limited focus on the link between SME dynamic capabilities and firm performance, it can be concluded that there is a paucity of research suggesting that dynamic capabilities indirectly influence SME firm performance.

One reason for developing the concept of dynamic capabilities was to explain the role of time (Teece et al. 1997) and understand why some organisations succeeded in maintaining competitive advantage while others failed (Peteraf et al. 2013). The role of time in enhancing the performance of firms is well understood (Ferrier 2001). The performance of competing firms is influenced by the temporal spacing and lags in responses, the speed of decision-making and the relative inertia of the firms (Boyd & Bresser 2008; Eisenhardt 1989; Laamanen & Keil 2008; Miller & Chen 1994). Additionally, Bridoux et al. (2013) have highlighted that the effects of competitive actions do not materialise immediately and that they depend on the speed of the competitive decision. Referring to this phenomenon as market reaction lags, Bridoux et al. (2013, p. 680) outlined a relationship between 'time to positive performance impact' and market reaction lags. A lack of immediate change in consumer behaviour and limited awareness of new products are associated with market reaction lags when a new product is introduced (Horsky 1990). In addition to buyer behaviour, time delays are also caused by decision-making delays (Luoma et al. 2016). In brief, the process of launching a new product requires coordination across cross-functional departments (MacMillan et al. 1985), which may delay the market entry of new products.

Further, evaluating competitive firms' performance and strategy in terms of reacting appropriately is also a time-bound process (Ferrier 2001). However, firms can use their differential capabilities to overcome any barriers to timely reaction (Hawk et al. 2013; Hambrick et al. 1996). In brief, the resources that firms possess can allow them to reduce the barriers to action and enhance the accuracy of timely competitive action. For example, some firms may have greater information processing capabilities, which can reduce uncertainties (Eisenhardt 1989), while other firms may possess enhanced internal coordination, which can reduce complex product development time (Becker 2004). Therefore, the dynamic capabilities that firms possess can influence the actions that are required to gain competitive advantage in the marketplace, which can then influence firm performance.

Wu and Lai (2019) noted that the evolution of technology and customers' needs requires firms to introduce new products for gaining improved profitability. The authors also noted that when a firm moves first and introduces its products earlier than its competitors, it obtains strategic price advantage and attracts greater demand due to the novelty of the product. For example, Samsung's rapid reactionary response rate that launched its product earlier than its competitors allowed the company to gain a substantial increase in profitability (Temperton 2016). Therefore, early-action firms continue to maintain their competitive position in the market with respect to innovations and technologies, as compared to late-action firms that are slow to react to market changes (Butner & Wilterding 2006; Debruyne et al. 2002; Selove 2014).

Much of prior research focuses on the time-based competitive advantage entry as measured by a product launch. In this thesis, time-based competitive advantage refers to the timely action that SMEs take to react to market and competitor changes, which leads to the development and launch of new products and services (Cohen et al. 1996). In brief, time-based competitive advantage refers to the speed of innovation (Shan et al. 2016).

Therefore, as indicated above, it can be stated that dynamic capabilities positively influence firm performance because they allow firms to adopt an efficient process and an enhanced speed of response that they can use to tackle turbulence in the market. Dynamic capabilities also influence firm performance by ensuring that firms use rare and non-substitutable resources to enhance their firm performance. Further, enhanced firm performance is also due to timely responses and the development of a time-appropriate strategy. It can thus be stated that when a firm possesses dynamic capabilities, it develops greater time-based competitive advantage—which then leads to superior firm performance. Therefore, after applying the above discussion to the context of SMEs, it can be hypothesised that:

H_1: Time-based competitive advantage mediates the positive relationship between dynamic capabilities and SME firm performance.

3.4 Relationships between Organisation Structure, Dynamic Capabilities and Time-based Competitive Advantage

Suarez and Lanzolla (2007) have noted that for firms to develop time-based competitive advantage in the form of first-mover advantage, they must possess organic structures. Additionally, Pertusa-Ortega et al. (2008) noted that competitive advantage depends on an organisation's level of organicity. Prior research by Covin and Slevin (1988) and Wilden et al. (2013) has indicated that an organic structure allows firms to change quickly in response to the environment, gain greater competitive advantage and develop adaptability to survive and enhance their performance in the business environment. However, prior research has stated that the opposite is true for organisations that possess highly mechanistic structures (Ndubisi 2013; Ylinen & Gullkvist 2014). In brief, mechanistic structures are always associated with high levels of rigidity and a lower rate of responsiveness—which reduce the firm's ability to adapt and launch competitive strategies based on the conditions of the market (Ylinen & Gullkvist 2014). Therefore, past research (e.g., Covin & Slevin 1988; Ndubisi 2013; Pertusa-Ortega et al. 2008; Suarez & Lanzolla 2007; Wilden et al. 2013; Ylinen & Gullkvist 2014) has indicated that organisation structure—or, rather, the extent of organicity in the firm—influences time-based competitive advantage.

Therefore, organisation structure (organicity) is a key variable in this thesis's conceptual framework. An ongoing debate has ensued regarding whether organisations perform better when they adopt either an organic or mechanistic structure. The two structures are on different ends of a spectrum. Contingency theory describes organic structure as a structure that promotes flexibility and enables employees and other organisational members to change and adapt quickly, especially in environments that undergo rapid changes (Ramezan 2011). Further, organic structures are believed to reflect the present day's information-sensitive workplaces that demand faster learning and more efficient power distribution and innovation (Ndubisi 2013). In contrast, the mechanistic structure is described in less favourable terms as a structure that induces organisational members to behave in predictable terms and to refrain from engaging in additional duties (Ndubisi 2013). It is for this reason that mechanistic structures are associated with rigidity and slow reactions to changes in the environment (Ylinen & Gullkvist 2014).

A closer review of the literature in this area reveals the presence of an implicit suggestion that smaller firms are best suited for organic structures, while mechanistic structures are most likely to be found in larger organisations. For example, Leitner (2001) indicated that one salient feature of organic structures is the absence of standardisation and the presence of loose and informal working relationships. Such characteristics best describe small organisations that are mostly inclined to non-formalised processes to obtain their desired levels of flexibility (which allow for better handling of environmental changes) (Kiril 2014). Conversely, mechanistic structures are associated with organisations that require high levels of specialisation, formalisation and standardisation to operate efficiently (Kiril 2014).

Several scholars have suggested that firms can enhance their performance through a balance of organic and mechanistic forms of organisation structure (Ahrens & Chapman 2004; Simons 1995). According to these scholars, achieving a balance between the two structures allows firms to better handle the competing roles of achieving predetermined goals and ensuring that employees can solve problems by developing new ideas/innovations. Ylinen and Gullkvist (2014) further argued that the firms that could manage the tensions that are involved in adopting flexibility in organic structures and discipline in mechanistic structures are better placed to achieve high levels of organisational performance. Previous studies (e.g., Jorgensen & Messner 2009; Mundy 2010; Widener 2007) that focused on firms' ability to blend organic and mechanistic structures have been mainly conducted at the theoretical level. However, there is a paucity of research that has been conducted in the context of SMEs.

Dynamic capabilities have been extensively associated with highly dynamic environments that are characterised by rapid changes. The pioneering study by Burns and Stalker (1961) suggested that in dynamic industrial sectors, firms that operate based on organic and informal structures are more effective compared to their counterparts that operate with highly organised and mechanistic structures. Organic structures are thus perceived as better suited for deploying dynamic capabilities (Prange & Verdier 2011; Singh et al. 2019; Wilden et al. 2013). Research has further identified several aspects of the organic type of organisation that renders it more suitable for dynamic capabilities. For example, Khandwalla (1977) indicated that organic structures directly affect dynamic capabilities through high levels of flexibility, informality in communication and the facilitating of continuous changes. According to Donaldson (1995), these aspects permit constant innovation to occur in uncertain and changing markets in which complex problems continue to arise. The research mentioned above has been mainly conducted in the context of MNEs, with SMEs receiving scant attention in the area of organisation structure

because of the widespread belief that all SMEs have informal and organic structures (Meijaard et al. 2005).

Singh et al. (2019) also found that dynamic capabilities are influenced by organic structures that are characterised by a less formalised hierarchy. Nahm et al. (2003) argued that the formal and inflexible work processes in most mechanistic organisations limit the application of dynamic capabilities through the suppression of creativity and autonomous working and learning. Martínez-León and Martínez-García (2011) shared similar views, in which they noted that the formal and explicit rules that characterise mechanistic organisations often reduce the alternatives to developing creative solutions. Despite the general consensus that higher levels of organicity are better suited for enhancing the development of dynamic capabilities, there is a paucity of research that explores how organisation structure affects dynamic capabilities in the context of SMEs. This is a critical research gap because it has been previously established that SMEs are characterised by flat and flexible structures, informal management practices and high reactivity to change.

Although the link between organisation structure and dynamic capabilities has been explored to some extent (as discussed above), the link between organisation structure and time-based competitive advantage has not garnered much scholarly attention, especially in the context of SMEs (Keupp et al. 2012; Palmié et al. 2015; Vessey 1991). Even though time-related competitiveness (e.g., speed of innovation and timely market delivery) is a crucial measure of a firm's competitiveness in the market (Keupp et al. 2012; Vessey 1991), little attention has been paid to how organisation structure (organicity) affects time-based competitive advantage (Palmié et al. 2015). This gap is especially wide in the context of SMEs, as the existing research has focused on large firms, in which the effects of organisation structure in the form of centralisation, socialisation and formalisation have been found to influence knowledge sharing, innovation, initiative development and firm performance (Björkman et al. 2004; Gupta & Govindarajan 2000; Kawakami et al. 2012; Kleinschmidt et al. 2007; Noorderhaven & Harzing 2009).

Internal coordination is an essential factor for determining how quickly a firm responds to market changes and competitor activity, as a lack of speedy decision-making and lapses in interdepartmental communication can cause reaction delays (Luoma et al. 2016; MacMillan et al. 1985). Knowledge sharing is a complex and time-consuming process (Tallman et al. 2004)—and the speed of knowledge transfer is a critical determinant of competitive advantage in the marketplace (Kogut & Zander 1993). The speed of knowledge transfer is determined by the

organisational routines and structure that has been implemented in the organisation (Nelson & Winter 1982). In the context of MNEs, the higher the centralisation and hierarchical structure between the parent firm and local subsidiary, the more delayed the decision-making process and response to market needs are (Palmié et al. 2015). Applying the same argument to SMEs, which rely extensively on R&D spillovers from universities and large firms (Acs et al. 2008), it can be said that higher degrees of mechanistic structure negatively influence the reactionary time–based competitive advantage changes.

Organic structures are favourable when firms exist in dynamic markets, as they are better suited for responding to market changes and developing new products (or altering existing ones). A firm's organic structure allows it to build dynamic capabilities; this in turn allows the firm to develop processes that permit it to react to market changes in a timely manner, thereby increasing its time-based competitive advantage (e.g., new product development and launch). Therefore, in line with the insights that have been gained through the discussion expressed above, the following hypothesis is proposed:

> *H_2: Dynamic capabilities mediate the positive relationship between organisation structure (organicity) and time-based competitive advantage.*

It is equally possible for different firms to share some common dynamic capabilities' characteristics (Eisenhardt and Martin, 2000). As such, dynamic capabilities cannot be regarded as aspects that are heterogeneously distributed across firms. Firms with the desired dynamic capabilities must be able to deploy resources to achieve their desired outcomes. Further, Eisenhardt and Martin (2000) posited that dynamic capabilities by themselves are not necessarily sources of competitive advantage or performance. Similar findings were made by Teece (2007), who emphasised the need for firms (MNEs or large firms) to develop complementary structures that allow dynamic capabilities to facilitate the improvement of competitive advantage and performance. More specifically, dynamic capabilities facilitate the generation of internal capacities in SMEs (e.g., supply chain agility) (Liu et al. 2013), better information processing capabilities (Eisenhardt 1989) and enhanced internal coordination (Becker 2004)—which all reduce the delay in responding to market and competitor changes (Luoma et al. 2016).

In light of these views, it can be argued that a higher level of organicity provides benefits and improves the relationship between dynamic capabilities and time-based competitive advantage competitiveness. This is justified because an organic organisation structure allows for lower

levels of bureaucracy through fewer hierarchical levels, promotes greater levels of interaction among employees through open communication channels and provides a platform for high levels of horizontal integration (Davenport & Nohria 1994; Mallen et al. 2016; Ramezan 2011). In brief, organisation structure (organicity) moderates the positive relationship between dynamic capabilities and time-based competitive advantage, such that higher levels of organicity lead to a stronger positive link between dynamic capabilities and time-based competitive advantage. Therefore, it can be hypothesised that:

> *H_3: Organisation structure (organicity) moderates the positive relationship between dynamic capabilities and time-based competitive advantage.*

3.5 Entrepreneurial Orientation, Dynamic Capabilities and Time-Based Competitive Advantage

Firms that adopt a strategic posture are marked by characteristics that are associated with innovation, proactiveness, a strong willingness to take risks—which are all features of an entrepreneurial orientation (Kreiser et al. 2010). Entrepreneurial orientation describes a strategic process that entails the pursuit of market opportunities for enhancing organisational performance (Bamiatzi & Kirchmaier 2014; Covin et al. 2006; Green et al. 2008; Wiklund 1999). Firms that pursue an entrepreneurial orientation engage in practices such as product market innovations and the pursuit of risky ventures (Cai et al. 2014).

Entrepreneurial orientation can be regarded as a factor that determines whether a firm is likely to possess dynamic capabilities. Teece (2007) described dynamic capabilities as the firm's entrepreneurial ability to adapt to a rapidly changing environment. This description suggests that entrepreneurial orientation—which is characterised by behaviours such as innovativeness, risk-taking and proactiveness—influences the development of dynamic capabilities. Such influence has been highlighted in several prior studies. For example, Lawson and Samson (2001) and Zahra et al. (1999) indicated that an inclination towards entrepreneurial practices can be instrumental in pushing knowledge to circulate, spread and be transferred within the organisation—as well as in fostering dynamic capabilities in the process. Similarly, Tsoukas and Mylonopoulos (2004) found that entrepreneurial practices, such as gaining knowledge and learning, often play a crucial role in the development of dynamic capabilities. Despite the positive association between entrepreneurial orientation and dynamic capabilities, these studies did not specifically focus on SMEs. Entrepreneurial orientation is thus included in this

thesis's conceptual framework so that it can offer insights and contributions regarding the notion of entrepreneurial activities being a path for developing dynamic capabilities in SMEs.

According to Jantunen et al. (2005), a high level of entrepreneurial orientation is crucial for a firm to recognise opportunities at an early phase. Opportunity recognition, in this context, is one of the main aspects of dynamic capabilities (Teece et al. 1997). Further, the ability to seize opportunities depends on how well the firm can reconfigure its asset base. In this sense, Jantunen et al. (2005) found that entrepreneurial orientation is often a trigger for reconfiguring an organisation's asset base. The overall effect is improved performance for firms since they can take advantage of existing opportunities. Earlier studies (e.g., Denrell et al. 2003; Kirzner 1997) similarly argued that dynamic capabilities (e.g., opportunity exploitation and opportunity creation) that are responsible for enhanced firm performance are basic entrepreneurial activities.

In their study of international firms, Jantunen et al. (2005) revealed that entrepreneurially oriented firms can recognise opportunities at an early phase. Through entrepreneurial actions, these firms can also create opportunities and take advantage of them by reconfiguring their asset base. Therefore, firms that possess a high level of entrepreneurial orientation are better poised to develop dynamic capabilities such as opportunity-seizing and reconfiguring asset bases—which are important for achieving higher firm performance.

In most of the existing studies that explored entrepreneurial orientation, the focus has been on the link between entrepreneurial orientation and organisational performance (Alegre & Chiva 2013; Davis et al. 2010; Kreiser & Davis 2010; Shan et al. 2016; van Doorn et al., 2013). In these studies, entrepreneurial orientation was believed to have positively influenced firm performance through new product innovation and improved customer satisfaction and speed of innovation. Covin and Slevin (1989) also previously highlighted that entrepreneurial orientation could benefit organisational performance in hostile environments that are characterised by intense competition, harsh business climates and a relative lack of opportunities that can be exploited.

Firms operating in dynamic environments that are characterised by rapid changes in consumer needs or technological developments must consistently discover new opportunities for enhancing profitability. Therefore, by adopting entrepreneurial orientation, firms will benefit from a timely risk-taking profile (Miller & Friesen 1982). Such anticipation for demand and speed of new product position has been shown to influence organisational performance (Ireland et al. 2003). Shan et al. (2016) discovered empirical evidence for the mediating effects of time-based

competitive advantage on the relationship between entrepreneurial orientation and firm performance in new ventures. Additionally, Clausen and Korneliussen (2012) found that entrepreneurial orientation significantly influences how quickly new products are introduced to the market.

Entrepreneurial orientation allows the firm to enhance its time-based competitive advantage, as it can pursue risky ventures and reconfigure its asset base (Shan et al. 2016). In brief, entrepreneurial orientation allows the firm to recognise opportunities at an early phase, as well as take advantage of them. Therefore, entrepreneurial orientation influences how quickly new products are launched in the market (Clausen & Korneliussen 2012). In light of this argument, it must be considered whether the dynamic capabilities that a firm possesses play a mediating role in the relationship between entrepreneurial orientation and time-based competitive advantage. Otherwise said, prior evidence has suggested that entrepreneurial orientation influences dynamic capabilities (e.g., Denrell et al. 2003; Jantunen et al. 2005; Kirzner 1997; Lawson & Samson 2001; Tsoukas & Mylonopoulos 2004; Zahra et al. 1999) and that dynamic capabilities influence time-based competitive advantage. Although it is also clear that entrepreneurial orientation influences time-based competitive advantage, this thesis must explore whether the indirect effect of entrepreneurial orientation on time-based competitive advantage is mediated through dynamic capabilities. Therefore, the following hypothesis is presented:

> *H_4: Dynamic capabilities mediate the positive relationship between entrepreneurial orientation and time-based competitive advantage.*

In addition to the above hypothesis, it is also asserted that entrepreneurial orientation plays a moderating role in the relationship between dynamic capabilities and time-based competitive advantage. It has already been revealed that entrepreneurial orientation influences the speed of innovation (Shan et al. 2016; Clausen & Korneliussen 2012). Specifically, Shan et al. (2015) have noted a negative relationship between entrepreneurial orientation and innovation speed (time-based competitive advantage, in this study) that could be due to the codification of knowledge required or the presence of errors in the design (Harter et al. 2000; Schoonhoven et al. 1990).

It has been previously identified that dynamic capabilities positively influence time-based competitive advantage. More specifically, firms with dynamic capabilities can more effectively react to market changes, launch timely reactions, activate their differential capabilities to achieve an edge in the marketplace, reduce uncertainties with greater information processing

capabilities and possess a reduced product development time—thereby generating a time-based competitive advantage (Becker 2004; Eisenhardt 1989; Ferrier 2001; Hawk et al. 2013; Hambrick et al. 1996; Luoma et al. 2016; Selove 2014). Because entrepreneurial orientation imparts exploitative and explorative capabilities to firms (Kraft & Bausch 2016), it allows firms to take greater risks (Covin & Slevin 1989) and increases their speed of innovation (Shan et al. 2016). Firms that are more entrepreneurially oriented are more perceptive to market changes and changes in their external environment (Mehrabi et al. 2019). Such firms will be able to mobilise their dynamic capabilities and enhance their time-based competitive advantage. In brief, firms that possess higher entrepreneurial orientation will not only be more attuned to their external environment, but they will also take greater risks, which will allow them to gain a first-mover advantage using their dynamic capabilities.

It is thus hypothesised that entrepreneurial orientation moderates the positive relationship between dynamic capabilities and time-based competitive advantage, such that a higher entrepreneurial orientation leads to a stronger link between dynamic capabilities and time-based competitive advantage. Therefore, it can be hypothesised that:

> *H_5: Entrepreneurial orientation moderates the positive relationship between dynamic capabilities and time-based competitive advantage.*

3.6 Controls

The study's control variables included the firm's size (employee number and sales turnover), age, industry (manufacturing and services), technological turbulence and environmental dynamism.

Technological turbulence can be defined as the extent to which rapid technological change occurs in an industry at a given time (Jaworski & Kohli 1993; Li et al. 2008). Rapid technological change in the global environment leads to the rapidly changing nature of competition, which in turn creates a host of challenges for the firms (Feinberg & Gupta 2004; Li & Kozhikode 2009; Spencer 2003). Otherwise said, technological turbulence can potentially increase the pressure on firms to acquire greater knowledge while simultaneously increasing uncertainty, information processing requirements and causal ambiguity; this can negatively influence the firm's performance (Jaworski & Kohli 1993; Noda & Collis 2001; Rindfleisch & Moorman 2001; Tushman & Nadler 1978; Weiss & Heide 1993).

However, when facing predictable technological turbulence, firms can seize business opportunities and achieve a higher degree of firm performance (Pratono 2016); conversely, firms that possess a low level of technological capability and market knowledge will suffer from low performance rates due to limited product diversification (Lichtenthaler & Muethel 2012). However, when the rate of technological turbulence is high, firms generally experience a lower rate of firm performance, as compared to when technological turbulence is low (Carbonell & Escudero 2015). Other research by Pratono (2015, 2018) has also considered the role that technological turbulence plays in the context of SMEs and their entrepreneurial orientation and dynamic capability.

Environmental dynamism is described as changes in the competitive environment that subsequently affect how firms compete with each other, as well as the strategies that firms use to respond effectively to changes in customer needs and other developments in the industry (Porter 1980; Wang & Ang 2004). To establish the effect of environmental dynamism, a distinction has been made between ordinary capabilities and dynamic capabilities. Winter (2003) defined ordinary capabilities as capabilities that enable a firm to 'make a living' in the short term. These capabilities are different from Porter's (1985) generic capabilities, which are specific to functional areas (e.g., support activities in the value chain). Dynamic capabilities, as described earlier, are the capabilities that allow for the extension, modification, change and creation of ordinary capabilities (Helfat & Winter 2011; Hoopes & Madsen 2008; Nelson & Winter 2000).

In a study that focused on the performance of a sample of Chilean firms, environmental dynamism was found to have negatively influenced the contribution of ordinary capabilities. In contrast, environmental dynamism was shown to have positively influenced the contribution of dynamic capabilities to relative firm performance (Drnevich & Kriauciunas 2011). Further, research has indicated that dynamism in a given industry often pressures firms to innovate and remain competitive (Lazonick 1993; Porter 1990). Innovation in this context emanates from the possession of appropriate capabilities that allow for seizing opportunities. In support of the positive influence of environmental dynamism, Zahra, Sapienza and Davidsson (2006) noted that the development and use of dynamic capabilities usually vary with the rate of change in the industry. Therefore, a greater use of dynamic capabilities is expected in industries that experience a high rate of change. Indeed, Subramaniam and Youndt (2005) demonstrated that most of the firms with radical innovative capabilities that were responsible for greater competitiveness mainly existed in dynamic industries. Furthermore environmental dynamism

has also been considered in research evaluating SMEs dynamic capabilities and performance linkages (Permana et al., 2017; Frank et al., 2017).

Further, a study by Arend (2014) found that firm characteristics influence the relationship between dynamic capabilities and SME firm performance. For example, firm age has been known to exert an influence on the relationship between dynamic capabilities and firm performance (Zahra et al. 2002; Zollo & Winter 2002). Arend (2014) found that younger firms are more likely than older firms to benefit from dynamic capabilities. Moreover, Arend (2014) also found that smaller SMEs are at a disadvantage in terms of benefitting from dynamic capabilities, as compared to relatively larger SMEs. Sales turnover or annual turnover also influences how much the firm can benefit from dynamic capabilities; firms that have a lower rate of annual turnover tend to face difficulties in developing dynamic capabilities, as building dynamic capabilities requires that a firm possess ample financial resources (Inan & Bititci 2015; Sternad et al. 2013; Tallon 2008). Finally, the firm's industry also influences its performance (McNamara, Aime & Vaaler 2005; Rothaermel & Hill 2005).

Table 3.1 outlines this thesis's hypotheses.

Table 3.1: Hypotheses of the Study

Hypothesis Number	**Hypothesis**
H1	Time-based competitive advantage mediates the positive relationship between dynamic capabilities and SME firm performance.
H2	Dynamic capabilities mediate the positive relationship between an organisation structure (organicity) and time-based competitive advantage.
H3	Organisation structure (organicity) moderates the positive relationship between dynamic capabilities and time-based competitive advantage.
H4	Dynamic capabilities mediate the positive relationship between entrepreneurial orientation and time-based competitive advantage.
H5	Entrepreneurial orientation moderates the positive relationship between dynamic capabilities and time-based competitive advantage.

3.7 Chapter Conclusion

This chapter has successfully presented the five hypotheses that will be tested. By embedding the research in dynamic capabilities theory, the chapter has clearly outlined the links between dynamic capabilities, time-based competitive advantage, SME firm performance, organisation structure and entrepreneurial orientation. The chapter has also outlined the role that the study's controls played in the conceptual framework. The hypotheses developed make novel contributions to the growing field of dynamic capabilities research in the context of SMEs. The following chapter outlines the research methodology that was adopted to test the hypotheses.

Chapter 4: Research Methodology

4.1 Chapter Overview

This chapter will provide a detailed explanation of the research methodology that was used to facilitate the collection of data pertaining to SME dynamic capabilities, organisation structure (organicity), firm performance, entrepreneurial orientation and time-based competitive advantage. The choice of research methodologies is also supported using relevant research methodology literature. The key sections of the chapter include choice of research methodology, research techniques, data collection methods, research population and sampling, the process of developing data collection tools and measurement decisions, and the data collection techniques (see Figure 4.1).

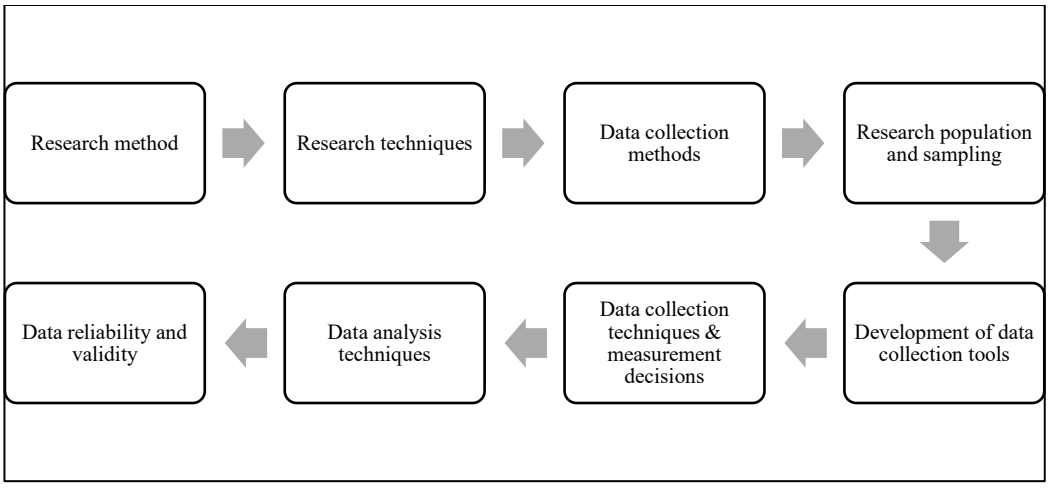

Figure 4.1: Outline of the Chapter Structure

4.2 Research Method

4.2.1 Research Paradigm

A research paradigm has been described as 'a set of belief that prescribes the implementation of research within a specified discipline as well as how the results should be interpreted' (Bryman 2004, p. 453). Therefore, a research paradigm comprises the set of beliefs that influences the choice of research theories, which in turn influences the research methods and underlying interpretations. Two of the paradigms commonly used in management studies include positivism and interpretivism (Saunders et al. 2012).

The positivism paradigm is based on the assumption that the reality concerning the research phenomena is not only stable but that it can also be investigated or observed objectively (Strangleman & Warren 2008). Otherwise said, the positivism paradigm predicts that the research phenomena can be isolated and that repetitive and consistent observations about the nature of relationships can be made. Traditionally, this research paradigm has been associated with natural sciences. However, it has been demonstrated to be highly applicable and effective in other fields of research, such as that of this thesis (strategic management). The strategy that is adopted by firms generally aims at achieving the balance between products/services offered and the external environment in which the firm operates (Hitt et al. 2001). As one of the leading authors in the field of strategic management, Porter (1980) explained that once the boundaries of a given industry have been identified, then competitive advantage can be achieved by responding to the competitive forces within the industry. Such forces include the potential competitors' risk of entry, the intensity of rivalry among the existing firms, the bargaining power of buyers and suppliers and how close substitutes are to products that are being offered by the industry. The firm's activities should be concerned with creating defensible positions in the industry. Therefore, it is necessary to quantitatively measure the factors that influence this position in terms of time-based competitive advantage and SME firm performance in the market. There is also a need to empirically test the various relationships and the theory a priori and to lead to the contextual development of dynamic capabilities theory in SMEs.

Conversely, the interpretivist paradigm emphasises that the approaches used to understand people and their organisations should be distinct from those of natural sciences (Collis & Hussey 2013). For this reason, the interpretivist paradigm contends that reality can only be fully understood through subjective interpretation and intervention. Researchers who use the interpretivist paradigm believe that the study variables under consideration are socially constructed, which highlights the importance of investigating the experiences, beliefs and attitudes of the social actors (Grant & Perren 2002).

Consistent with the quantitative research method, the present study uses the positivism paradigm. As such, data are collected on SME performance in a systematic manner, with the aim of obtaining objective information that can help establish whether key variables such as dynamic capabilities and organisation structure have any significant influence on firm performance. In light of the study's findings, generalisations can be made regarding whether SMEs are better positioned in their industries if they possess certain capabilities or if they adopt specific structures. Although the interpretivist philosophy can help provide a powerful understanding, it was deemed to be less applicable because it is not designed to establish relationships on an

empirical basis or facilitate the testing of hypotheses. In contrast, the positivism paradigm allows these functions.

4.2.2 Research Approach

Chapter 3 presented the testable hypotheses that were drawn from theory. These hypotheses must be accepted or rejected based on the empirical data that were collected. To accomplish this purpose, the right reasoning (i.e., research approach) regarding the choice of specific research methods must be considered (Luton 2010). The two main research approaches include the deductive and inductive approaches. The choice between the two depends on the study's purpose, which could be analytical, exploratory, descriptive, predictive or explanatory. For the deductive approach, the researcher's main focus is on developing a theoretical and conceptual structure that can be tested by empirical observations (Creswell 2013). In brief, deductive research involves empirical data or observations that are used to test existing theories. Researchers using the deductive approach must begin their research with clear theoretical propositions that are tested following the collection of relevant data. The inductive approach follows a reverse path to the deductive approach. Specifically, it requires the researcher to make empirical observations with the aim of constructing new theories. This bottom-up approach thus involves using specific instances to make general inferences (Luton 2010).

The deductive approach corresponds well with the chosen survey research technique and positivism paradigm of the present study. A comprehensive literature review was performed with the aim of forming clear theoretical positions in the form of research hypotheses that can be validated.

4.2.3 Primary and Secondary Sources

In the context of the present study, primary data were used as the most appropriate source of information for the study variables. These data were especially instrumental in the process of testing the study's hypotheses. Although secondary data are more easily accessible, they were not considered highly suitable for this study, as information tends to become less detailed and authoritative as it flows from primary to secondary sources (Easterby-Smith et al. 2012). Additionally, the data required for this study are unlikely to be available in the form of secondary data. For example, because this thesis is based in the SME context and explores how dynamic capabilities influence SME firm performance through time-based competitive advantage, accurate statistical data regarding the extent of the dynamic capabilities that SMEs possess, or data regarding the time-based competitive advantage or performance of SMEs, are difficult to obtain. Primary data in the form of self-reports were preferred in this case.

4.2.4 Quantitative and Qualitative Data

Primary data can be derived in two forms: quantitative and qualitative. In quantitative research, the researcher primarily seeks to explain the phenomena of interest through data that exist in numerical form that can be analysed through statistical-based methods. In terms of appropriateness, such data are useful in research contexts involving a focus on answering questions pertaining to 'how often', 'how much', 'how many' and 'who'. These types of questions require numerical data to be answered (Sachdeva 2009). One aspect that distinguishes quantitative research is its focus on trying to precisely measure the topic being investigated (Tashakkori & Teddlie 2010). This method clearly illustrates the nature of the issues that are encountered in a particular field of research, such as SMEs' performance based on their dynamic capabilities and choice of organisation structure.

In the present research, quantitative research was preferred for several reasons. First, the pattern of quantitative research supports the testing of hypotheses (Jha 2008). For example, it can be used to test the effect of selected independent variables (e.g., dynamic capabilities) on dependent variables (e.g., time-based competitive advantage and firm performance). The reliable statistical data that are used in quantitative research enable the researcher to make definitive conclusions about the nature of such relationships. Second, the collection of quantitative data allows the researcher to have minimal involvement with the respondents, which pertains to the avoidance of bias that could potentially distort the study's findings. This is in contrast to qualitative research, in which the researcher is prone to bias due to acting as a catalyst for the research process (Saunders et al. 2012). At the operational level, collecting quantitative data is also less time consuming and allows for easier categorisation, comparison and analysis.

Despite the advantages that are associated with quantitative research, the research design has many limitations. For example, quantitative research tends to be collected in tightly controlled conditions (Williams 2011). The outcome is a sacrifice of richness and depth of information. Quantitative data are also less effective in situations involving diverse and conflicting theoretical perspectives since they fail to explain the underlying issues (Easterby-Smith et al. 2012). In the present study, these limitations were overcome by conducting a detailed review of literature that related to the nature of the relationships between the study variables—such as the influence that a particular combination of dynamic capabilities, entrepreneurial orientation and organisation structure had on achieving time-based competitive advantage and firm

performance. Table 4.1 summarises the key differences between quantitative and qualitative research.

Table 4.1: Summary of Differences between Quantitative and Qualitative Research

Research agenda	Quantitative	Qualitative
Focus	The method involves describing, explaining and predicting the nature of the relationships between study variables.	The method involves understanding and interpreting the research variables.
Researcher involvement	The investigator has minimal involvement to reduce bias.	The investigator is actively involved as either a participant or catalyst.
Purpose	The method seeks to test existing theories.	The method seeks to create in-depth understanding and build new theories or complement existing ones.
Sampling design	The method uses probability-based sampling techniques.	The method uses non–probability based sampling techniques.

Sources: Ernst (2003) and Stake (2010).

4.2.5 Research Strategy

The study's objectives in addition to the selected philosophical position should present the most suitable research strategy. As discussed in Section 4.2.1, this study uses the positivism paradigm. It also aims to test hypotheses derived from a model that was based on the identified research problems and issues (see Chapter 3). The chosen research strategy should thus be consistent with the positive paradigm and allow for the testing of hypotheses. The research strategy describes the path and plan of actions that the investigator employs to facilitate a systematic research process (Saunders et al. 2009). As Cargan (2007) further explained, establishing a clear research strategy is usually instrumental in ensuring that correct answers to the study's research questions can be found. The common research strategies that researchers can select include case studies, action research, surveys and ethnography. No strategy is considered superior over to the others. The choice depends on availability, the nature of the study's objectives and the

type of data that are to be collected (Saunders et al. 2012). Since the present study is based on the quantitative research method, the survey technique was adopted. Surveys are not limited to any particular field and have a capacity for broad coverage. Further, unlike case study research, surveys allow data to be collected from relatively large samples without necessitating large amounts of financial and time resources (Easterby-Smith et al. 2012).

In relation to SMEs, the survey technique was further deemed useful because it would allow the collection of quantifiable information that pertained to the study's variables. Collecting direct information on each of these aspects enhanced the chances of collecting unbiased data that could be generalised for other SMEs that were not included in the study sample. In this context, Brand (2009) has argued that collecting data with the survey technique increases the ability to obtain candid responses since participants can be assured that their responses are confidential and their identities anonymous.

Overall, it can be concluded that the present research has adopted a positivist primary quantitative data approach. The potential limitation of this approach is that it could lead to dismissing of important factors that might contribute to the SMEs firm performance. In addition, since dynamic capabilities are under examined in SMEs (Chapter 2), one could assume that there is a potential for SMEs to possess unique dynamic capabilities. The present study recognizes this and also acknowledges that since it is not considering lower order capabilities and other probable mediators in the relationship between dynamic capabilities, entrepreneurial orientation, time-based competitive advantage, and organisation structure, the research could suffer from omission bias. However, the use of dynamic capabilities across other research in the context of SMEs has been conducted along the same lines (e.g., Genc et al., 2019; Pinho & Prange, 2016). Furthermore, the present research is not focusing on the type of dynamic capability that SMEs have, but rather the focus is on the ability of SMEs to sense, seize, and transform their resources to achieve higher competitive advantage and firm performance.

4.2.6 Time Horizons—Longitudinal and Cross-Sectional

The target population of SMEs in the UK has been operating for varying lengths of time. While investigating these SMEs, the researcher could opt to investigate previous performances and organisational practices or to track these aspects of interest from the present time to the future. The former option would require a cross-sectional study while the latter would require a longitudinal study. These time horizons should be considered when planning for a study (Saunders et al. 2012). Longitudinal studies evaluate long-term change, in which the research phenomena are studied over a certain period. The longitudinal design is mainly appropriate in

studies that involve basic questions such as 'has there been any change over a period of time?' (Bouma & Atkinson 1995). As an example, a study could involve conducting workplace surveys over several years to establish any developmental changes to aspects such as personnel management and employee relations.

In contrast to longitudinal studies, cross-sectional studies are a form of 'snapshots', in that they are conducted at a specific point in time (Saunders et al. 2012). Through an examination of over 200 social science articles, Bryman (2006) found that the cross-sectional design was predominant. This can be attributed to the fact that most academic studies on management and marketing are time constrained. Although time horizons are independent of the chosen research technique, prior investigations have revealed that cross-sectional studies often employ the survey strategy (Easterby-Smith et al. 2012). It is for these reasons that the present study preferred and adopted a cross-sectional design. However, one limitation of the cross-sectional research design is that it cannot outline the temporal associations that exist between the independent variables and the outcome variables. It is common knowledge that dynamic capabilities and time-based competitive advantage evolve over time. However, since the current research was cross-sectional in nature, the long-term consequences of improving dynamic capabilities were unable to be measured within the time constraints.

4.3 Data Collection Method

The quantitative data pertaining to SME external environments, dynamic capabilities, organisation structure (organicity), entrepreneurial orientation, performance and time-based competitive advantage should be collected using the most appropriate method. The data collection method describes the instruments that are used to gather the relevant data. Based on the research techniques that this thesis adopted, the researcher can choose from several data collection methods (e.g., survey questionnaires, focus groups, interviews and experiments) (Miller & Tsang 2011). In the present study, data were collected using the survey questionnaire method for several reasons. First, survey questionnaires allow the collection of data whose validity and reliability can be easily ascertained. This subsequently helps enhance the credibility of the study's findings (Türel 2011). This was especially important in the present study, as some of its hypotheses have never been tested in prior studies (see Chapter 3). The lack of other studies for comparison increases the need for a higher level of credibility. Second, it is easier to quantify results that have been obtained through questionnaire surveys than from other methods such as interviews. Ease of quantification is vital in studies that require large sets of data to be inputted into statistical analysis packages (e.g., SPSS or AMOS). Third, survey

questionnaires provide an opportunity to analyse the data using scientific methods—and thus enhance the level of objectivity in the study's findings.

The method of survey questionnaires also has several drawbacks. For example, the data collected using this method tend to lack depth and richness, which increases the risk of obtaining superficial information (Fink 2012). This method also fails to provide the researcher with an opportunity to probe the participants' responses; consequently, it may be difficult to gauge the participants' truthfulness. Compared to other methods such as interviews, there is also the risk of a low response rate (Fan & Yan 2010). To overcome these drawbacks, this study's questionnaire incorporated all key aspects of the research questions (as will be discussed later in this chapter). Three email reminders were sent to the respondents to try and reduce the low response rate and increase the accuracy of responses.

Some relevant methods for collecting data through questionnaires include personal surveys, drop-off surveys and electronic surveys. While weighing the needs of the present study against the strengths and limitations of each of these methods, web-based surveys were ultimately selected as the primary data collection technique. They are proven to be highly convenient and easy to complete for respondents—and they consume less time and fewer financial resources during administration (Easterby-Smith et al. 2015). Some studies have further revealed that follow-up reminders can significantly increase the survey response rate and contribute to a more generalisable study (Bethlehem & Biffignandi 2011). Despite a quicker response time, electronic surveys may be characterised by a low response rate.

4.4 Research Population and Sampling

4.4.1 Research Setting

A sample from a research context comprises a subset of the target population that is used as a representative of the population. In light of the study's focus on SMEs in the UK, the main population of interest included business firms that fell under the SME category. These firms operate in several sectors, such as technology, retail, trading, manufacturing and services. The study setting was the UK, which has over 5.9 million SMEs (comprising over 99% of all businesses as of 2019) (Rhodes 2019). SMEs in the UK are classified based on their number of employees. For example, micro-businesses have up to nine employees, small business employ between 10 and 49 employees and medium business employ between 50 and 249 employees (Rhodes 2019). The OECD (2005) also adopted a similar definition of SME as a non-subsidiary and independent firm that employs fewer than 250 employees.

Currently, UK SMEs account for £2,168 billion in turnover, which constitutes approximately 52 per cent of the overall turnover that is generated from businesses in the country. Of this amount, micro-businesses account for 95.7 per cent, small businesses account for 3.6 per cent, and medium businesses account for 0.7 per cent. Overall, UK SMEs employ approximately 60 per cent of the total workforce in the UK. The service sector primarily dominates the UK's economy, with approximately 4.4 million service businesses at the end of 2019 generating an annual turnover of 71 per cent of the country's total turnover (BEIS 2019). Additionally, construction totals to 18 per cent, manufacturing to five per cent and agriculture, mining and utility companies to three per cent of the total SMEs in the UK (BIES 2019). In addition, the UK was chosen to fully explore the dynamic capabilities concept in the developed context. This was important due to the fact that given the scarce research of dynamic capabilities in the SME context, it is necessary to first understand the same in the context of SME in the developed world due to the developing world presenting a host of other challenges for SMEs. Furthermore, SMEs in the UK are highly prevalent more so than in other parts of the world. Thus, the choice of the UK was ideal.

4.4.2 Sampling Process

Presently, the UK retains approximately 5.9 million SME firms, which are mainly located in key areas such as London and the south-east, south-west and east areas of England. In regard to the sampling frame, it was deemed necessary to focus only on SMEs that have been in operation for three or more years. This was necessary because dynamic capabilities (one of the study's main variables) were considered path-dependent variables, in the sense that they are influenced by the firm's history (Wall et al. 2010). Recently established SMEs may not have developed strong and stable dynamic capabilities, so they were excluded from the study. Similar sampling characteristics have been adopted in other studies that have explored dynamic capabilities in SMEs. For example, Branzei and Vertinsky (2006) also selected SMEs that had been in operation for over three years. This is critical to consider because while there is no guarantee that firms will have developed dynamic capabilities after three years, it nevertheless gives them the time for the dynamic capabilities to develop.

Simple random sampling was employed to distribute the survey questionnaire. First, the email addresses that were obtained from Kompass (a UK-based B2B directory) were assigned a number. Then, using the random number generator function in Excel, a set of random numbers were generated. Survey links were then forwarded to each of the email addresses that corresponded to the random numbers. Using this method, the researcher ensured that each

member of the sampling frame had an equal chance of participating in the study. This is a probability-based sampling technique and allows representative results to be obtained and then generalised to the larger population of interest (Levy & Lemeshow 2013).

To ensure equal participation, the sample was restricted to equal parts of services and manufacturing SMEs. Only SMEs that met the inclusion criteria as discussed above were sent the questionnaires (N = 16,260). A response rate within the range of 10 and 20 per cent was expected in Lavrakas's (2008) study, which indicates that the average response rate usually falls between 10 and 15 per cent for online surveys. Tabachnick and Fidell (2012) indicated that in studies that adopted SEM techniques, a sample of 100 can be considered poor, 200 fair, 300 good, 500 very good and 1000 or greater excellent. However, to align with the expected response rate of 10 per cent, the questionnaire was shared with 16,260 SMEs to allow for at least 1,626 completed surveys, which would have been categorised as an 'excellent' sample size, according to Tabachnick and Fidell's (2012) classification. Even though the response rate was much lower (3.08%), it still resulted in a total usable sample size of 482 (out of a total of 501). This sample size would be considered between the markers of 'good' and 'very good' according to Tabachnick and Fidell's (2012) classification. Additionally, although the sample size is representative, the low response rate is aligned with Reijonen et al. (2015) and Nyadzayo et al.'s (2020) studies, which obtained a response rate of six and eight per cent, respectively, from a sample of B2B companies. To ensure the absence of non-response bias, the current research was conducted and presented with a non-response bias test (see Section 5.2.3.2.).

The emails containing the link to the questionnaires were addressed to the senior managers and representatives of the SMEs as the target respondents. The specific managers included chief executive officers (CEO), managing directors (MD) and general managers (GM). These respondents were positioned the best in terms of answering the survey questions, as they had adequate knowledge of their firm's operations—including in regard to nuanced aspects such as dynamic capabilities and competitive advantages, which are difficult to observe. Senior managers have been used to provide data in similar studies, such as in Ringov (2017), Lin and Wu (2014) and Makkonen et al. (2014). In their study, Zahra and Covin (1993) noted that senior managers were better positioned to provide valid and reliable data. In the collection of data from the respondents, the researchers acknowledged the existence of single-informant bias. Such bias occurs when a study relies on only one informant to obtain the required data. There is a possibility that a single respondent per company may result in incorrect data and impede the assessment of validity (Ernst & Teichert 1998). This problem was overcome by carefully selecting the respondents so that reliable information would be obtained. For example, senior

managers who had spent over three years in the company and who had a good knowledge of the company's operations were preferred. These criteria were used to screen the Kompass sample.

4.5 Development of Data Collection Tools

4.5.1 Survey Instrument

As mentioned previously, a survey was used as the main data collection tool. To ensure the creation of a high-quality questionnaire, the survey was developed by attributing previously validated scales—as published in peer-reviewed journals—to each of the key study variables. The study's dependent variables included time-based competitive advantage and firm performance, while the independent variables included dynamic capabilities, entrepreneurial orientation and organisation structure.

This study's research design sought to establish the respondents' perceptions regarding the relationship between the variables being investigated. Perceptual data were used because objective data were too difficult to collect and were limited due to focusing only on the end results (Cohen 1993). A Likert type of scale was thus deemed to be the most optimal in terms of eliciting such perceptions. For the purpose of consistency, a five-point Likert scale was used to capture the respondents' responses. Apart from the items on the SMEs' demographic and general characteristics, all other key variables were adopted from existing questionnaires from peer-reviewed studies. Overall, all scales were consistent with other prior studies (Arend 2014; Covin & Slevin 1989; Jaworski & Kohli 1993; Kuuluvainen 2012; Vorhies & Morgan 2005).

A five-point Likert scale was instrumental in increasing the scale's sensitivity to the variability of responses. It also provided an additional convenience to the respondents in terms of offering a quick understanding of the questionnaire (Devlin et al. 2003; Zikmund 2003). It can also be noted that the Likert scale was helpful in terms of generating interval-type data. Such data, as Cavana et al. (2001) explained, allows for the use of advanced data analytical tools. Further, fully defining the scale helps ensure the possibility of checking for leniency errors, which are characterised by excessively positive or negative ratings (Farh & Werbel 1986). The respondents could make more effective and informed judgements due to the point-by-point labels that enhanced the discriminant function of the scale.

While considering the specific variables, the Likert scale was useful in terms of helping the researcher measure the intensity of respondents' judgements regarding aspects such as their current level of competitiveness, entrepreneurial orientation and inclination to organic or

mechanistic structures. In the specific case of organisation structure, firms could operate along various points of a continuum. For example, some firms may generally have been inclined towards an organic structure, while still retaining some aspects of a mechanistic structure. The use of multiple items to measure and describe the various constructs in the questionnaire has also been effective in terms of enhancing the accuracy of the research instrument (Zikmund 2003).

4.5.1.1 Measures

All constructs are regarded as being reflective constructs—except in the case of dynamic capabilities, which is considered a formative construct (Wilden et al. 2013). The reflective model is based on the assumption that latent constructs are responsible for the changes observed in the measured variables. Therefore, the reflective model involves the flow of causality from the latent constructs to the indicators. According to Ghofar and Islam (2014), the indicators in the reflective model should be interchangeable, as well as removable without the need to change the constructs. Conversely, the opposite is true for a formative model; the causality in a formative construct flows from the measured indicator to the construct (Diamantopoulos & Winklhofer 2001).

As illustrated in the study's conceptual framework, each of the investigated constructs has a theoretical basis. In this study, it is further assumed that dynamic capabilities (i.e., sensing, seizing and transforming) and firm performance (i.e., customer satisfaction, anticipated profitability and market effectiveness) have a second-order factor model. The other variables (i.e., organisation structure [organicity], entrepreneurial orientation and time-based competitive advantage) are first-order measures. The associated second-order model involves observed items that load on first-order factors, which in turn, load on second-order factors (Brown 2015).

4.5.1.2 Dynamic Capabilities

In this study, dynamic capabilities were measured according to Teece et al.'s (1997) three dimensions of dynamic capabilities: sensing, seizing and reconfiguration. The measurement items were derived from the study by Wilden et al. (2013). As depicted in Table 4.2, four items were used to measure sensing capabilities, four for seizing capabilities and four for reconfiguration capabilities. All items were measured on a five-point scale that ranged from 1) 'strongly disagree' to 5) 'strongly agree'. This scale has been used by Genc et al. (2019) and Pinho and Prange (2016) in the context of SMEs, thereby rendering this scale appropriate in the present context of SMEs.

Table 4.2: Measures for Dynamic Capabilities

Sensing capabilities	**Source of Measures**
• In my firm, people participate in professional association activities. • In my firm, we use established processes to identify target market segments, changing customer needs and customer innovation. • In my firm, we observe best practices in our sector. • In my firm, we continuously gather economic information on our operations and operational environment.	Wilden et al. (2013, p. 83)
Seizing capabilities	
• In my firm, we invest in finding solutions for our customers**.** • In my firm, we adopt the best practices in our sector. • In my firm, we respond to defects that other employees point out. • In my firm, we change our practices based on customer feedback.	
Reconfiguration capabilities	
• During the last 3 years, my firm implemented new kinds of management methods. • During the last 3 years, my firm implemented new or substantially changed marketing methods or strategies. • During the last 3 years, my firm implemented substantial enhancements to business processes. • During the last 3 years, my firm implemented new or substantially changed ways of achieving our targets and objectives.	

Note: the above items have been directly adopted from Wilden et al. (2013, p. 83) to maintain the integrity of the scale and not influence its validity, as is common practice.

4.5.1.3 Entrepreneurial Orientation

The entrepreneurial orientation construct was measured on a scale developed by Covin and Slevin (1989). It comprised nine items that measured the three dimensions of entrepreneurial orientation: innovativeness, risk-taking and proactiveness. It was also based on a five-point Likert scale that ranged from 1) 'strongly disagree' to 5) 'strongly agree'. The higher the score, the more entrepreneurial the SME. The scale that this study used had been tested for reliability

by Covin and Slevin (1989), who deemed it satisfactory. More recently, this scale had also been used by Altinay et al. (2016) and Samrau et al. (2016) in the context of SMEs, who also deemed it reliable.

Table 4.3: Measures for Entrepreneurial Orientation

Innovation	**Source of measures**
• In general, the top managers of my firm favour a strong emphasis on R&D, technological leadership and innovations. • My firm has marketed many new lines of products or services in the past 5 years. • Changes in product or service lines in my firm have usually been quite dramatic.	Covin and Slevin (1989, pp. 85-86)
Risk-taking	
• My firm typically initiates actions to which competitors then respond • My firm is often the first business to introduce new products/services, administrative techniques and operating technologies, among others. • My firm typically adopts a very competitive 'undo the competitors' posture.	
Proactiveness	
• In general, the top managers of my firm have a strong tendency for high-risk projects (with chances of very high returns). • Due to the nature of the environment, my firm believes that bold, wideranging acts are necessary to achieve the firm's objectives. • During uncertain times, my firm typically adopts a bold, aggressive posture to maximise the probability of exploiting potential opportunities.	

Note: the above items have been directly adopted from Covin and Slevin (1989 pp. 85-86*) to maintain the integrity of the scale and not influence its validity, as is common practice.*

4.5.1.4 Organisation Structure

The study by Covin and Slevin (1989) was also used to identify a scale for measuring organisation structure. The scale that these two authors posited uses six items to assess the extent to which a firm is regarded as operating with an organic or mechanistic structure—openness of communication channels, uniformity of managerial style, formality in decision-making, inclination towards tested management principles, formality in the control of operations and adherence to formal job descriptions (see Table 4.4). Numerous studies have proven the scale to be highly reliable, including Covin et al. (1990), Green et al. (2008) and Miles et al. (2000).

The organisation structure is measured on a five-point Likert scale, whereby 1 = 'Strongly Disagree', 2 = 'Disagree', 3 = 'Neutral', 4 = 'Agree' and 5 = 'Strongly Agree'.

Table 4.4: Semantic Differential Scale for Organisation Structure

My firm favours highly structured channels of communication and has a highly restricted access to important financial and operating information.	1	2	3	4	5	My firm favours open channels of communication, with important financial and operating information flowing quite freely throughout the organisation.
There is a strong insistence on a uniform managerial style throughout the firm.	1	2	3	4	5	The manager's operating styles are allowed to range freely from very formal to very informal.
There is a tight, formal control of most operations by means of sophisticated control and information systems.	1	2	3	4	5	There is loose, informal control, as well as a heavy dependence on informal relations and a norm of cooperation to get work done.
There is a strong emphasis on always getting personnel to follow the formally laid-down procedures.	1	2	3	4	5	There is a strong emphasis on getting things done even if it means disregarding formal procedures.
There is a strong emphasis on holding fast to true and tried management principles, despite any changes in business conditions.	1	2	3	4	5	There is a strong emphasis on adapting freely to changing circumstances without too much concern for past practice.
There is a strong emphasis on getting line and staff personnel to adhere closely to formal job descriptions.	1	2	3	4	5	There is a strong tendency to let the requirements of the situation and the individual's personality to define proper on-the-job behaviour.

4.5.1.5 Time-Based Competitive Advantage

In this study, time-based competitive advantage refers to the timely action that SMEs take to react to market and competitor changes, thereby leading to the development and launch of new products or services (Cohen et al. 1996). In other words, time-based competitive advantage refers to the speed of innovation (Shan et al. 2016). The basis for measuring time-based competitive advantage in the present study was a scale developed by Li et al. (2006). It measures time-based competitive advantage according to four items (see Table 4.5) on a five-point Likert scale. The five-point Likert scale ranged from 1) 'much worse than competitors' to 5) 'much better than competitors'. Other studies have demonstrated the scale to be highly reliable (Lakhal 2009).

Table 4.5: Measures for Competitive Advantage

Time-based competitive advantage	Source of measures
My firm delivers products to market quickly.	Li et al. (2006, p. 120)
My firm is first in the market to introduce new products.	
My firm has a time-to-market that is lower than the industry average.	
My firm has fast product development.	

Note: the above items have been directly adopted from Li et al. (2006, p.120) to maintain the integrity of the scale and not influence its validity, as is common practice.

4.5.1.6 SME Firm Performance

Firm performance was measured as a higher-order construct based on Vorhies and Morgan's (2005) study, which comprised 12 items. As shown in Table 4.6, the three dimensions include customer satisfaction, market effectiveness and anticipated profitability. The five-point-Likert scale ranged from (1 'worse' to 5) 'better than competitors'.

Table 4.6: Measures for Firm Performance

Measures	Sources for measures
Customer satisfaction	Vorhies and Morgan
Delivering value to your customers	(2005, p. 92)
Delivering what your customers want	
Retaining valued customers	
Market effectiveness	
Market share growth relative to competitors	
Growth in sales revenue	
Acquiring new customers	
Increasing sales to existing customers	
Anticipated profitability	
Business unit profitability	
Return on investment	
Return on sales	
Reaching financial goals	

Note: the above items have been directly adopted from Vorhies and Morgan (2005, p.92) to maintain the integrity of the scale and not influence its validity, as is common practice.

4.5.1.7 Control Variables

The control variables include the firm's size (employee number and sales turnover), age, industry (manufacturing and services), technological turbulence and environmental dynamism. Technological turbulence and environmental dynamism were measured using self-report scales. Table 4.7 outlines the sources of the measures and the relevant items. Each of the variables was measured using five items on a five-point Likert scale that ranged from 1) 'strongly disagree' to 5) 'strongly agree'.

Table 4.7: Measures for Control Variables

Measures	Sources of measures
Technological turbulence	Calantone, Garcia and Dröge (2003, p. 103)
The technology in the industry is changing rapidly.	
In the industry, virtually no R&D is done.	
In the industry, the modes of production and service change often.	
In the industry, the modes of production and service change in major ways, as opposed to slowly evolving.	
A large number of new product ideas have been made possible through technological breakthroughs in the industry.	
Environmental dynamism	Urban (2010, p. 74)
The set of my firm's competitors is constantly changing.	
Technological breakthroughs in the industry have resulted in a large number of new product ideas.	
Product demand is difficult to forecast and anticipate in the industry.	
In the industry, customer requirements are difficult to forecast.	
The actions of competitors are difficult to predict in the industry.	

Note: the above items have been directly adopted from their respective authors to maintain the integrity of the scale and not influence its validity, as is common practice.

4.5.1.8 Questionnaire Pre-Testing

Before participants began the large-scale survey, a pre-test was taken. This form of preliminary study was conducted with the main aim of evaluating the questionnaire's feasibility, time and improvement before implementing the full-scale research. The pre-test also ensured that participants had a thorough understanding of the questionnaire items and that they had no difficulties with the wording (Creswell et al. 2003; Sekeran 2003). The researcher conducted the pre-test using the face-to-face method with a sample of 20 respondents from the UK via video conferencing. This pre-test process helped the researcher understand whether the respondents understood the questions and offered the expected responses. None of the questions was found

to be problematic, so they were retained. Other researchers have modified their questionnaires based on information collected from the pre-test, including Song et al. (2010) and Cavazotte et al. (2012). The final version of the questionnaire was also finalised with the help of this thesis's supervisors. Based on Brislin's (1986) recommendations, the data collected in the pre-test phase were not used in the final analysis.

4.6 Data Collection Techniques

4.6.1 Data Collection Procedures and Ethical Measures

One of the goals of every researcher is to obtain high-quality data that enable the ability to answer all research questions reliably. While aiming for high quality, the researcher also seeks to ensure that any costs remain within the available monetary budget. In this regard, the researcher sought to employ data collection techniques that could increase the survey's response rates and speed of responses, as well as reduce any instances involving respondents omitting certain questions. Zikmund et al. (2010) explained that each of these aspects is necessary to ensure an overall high-quality survey. This section discusses the techniques that were used to achieve such quality.

4.6.1.1 Pre-Notification Contact and Follow-Up

To achieve a high response rate and prepare the respondents for participating in the research, it was important to obtain their commitment before commencing the data collection. However, different scholars have different opinions regarding the efficacy of pre-notification contact. Some researchers (e.g., Dennis 2003) found that pre-notification contact can increase the response rate for small sample sizes. For this reason, pre-contact was not employed in the current study. Conversely, follow-ups have been shown to be more effective at increasing response rates and accelerating the rate of response (Malhotra & Birks 2007). Accordingly, follow-ups were used instead of pre-contact notifications.

4.6.1.2 Cover Letter

Several researchers have indicated that well-designed cover letters can significantly increase response rates (Fox et al. 1988; Zikmund et al. 2010). In light of this, the researcher took several measures to develop an effective cover letter, including the use of warm, recipient-friendly and appreciative language. The cover letter also clearly explained the objectives of the data collection process, as well as the expected research benefits. To enhance transparency, the

cover letter also informed the participants about the expected completion time and listed the researcher's and supervisor's names and contact details.

4.6.1.3 Monetary and Non-Monetary Incentives

Different researchers have expressed varying opinions regarding how effectively incentives enhance response rates. While some studies have found that monetary incentives can positively affect the response rates of electronic surveys, others have clarified that these effects do not apply in all contexts. For example, in research contexts in which the respondents' efforts cannot be adequately compensated financially, it is recommended that such incentives should not be used. Accordingly, no monetary incentives were offered in the current study.

Non-monetary incentives could also include gifts or the promise to send a summary of the study results upon completion of the study. There is no consensus among researchers regarding whether these incentives exert a significant influence on response rates (Baruch & Holtom 2008; Curtin et al. 2005). As such, non-monetary incentives were not offered. However, all respondents were informed of the researcher's appreciation for their efforts to participate in the research.

4.6.1.4 Day of the Week

According to Yan and Fan (2010), high response rates could be achieved at no cost by appropriately adjusting the electronic mail schedule. It is important whether a survey questionnaire is issued early in the week, mid-week or towards the weekend. Early in the week, recipients often have a bulk of emails to address and may thus not be keen to complete the questionnaire. Similarly, emails also tend to increase towards the weekend, as respondents seek to complete their work. Mid-week days between Tuesday and Thursday are considered more appropriate for enhancing the response rate, in light of a relatively lighter workload (Yan & Fan 2010). For this reason, the electronic questionnaire was distributed on Tuesday, so that respondents could complete the survey between Wednesday and Thursday. Saturday and Sunday were avoided, as they are the official weekend days in the UK (so respondents are unlikely to be in their workplaces).

4.6.1.5 Ethical Considerations

From an ethical perspective, formal ethical approval was acquired from the researcher's university before the study commenced. The participants were required to freely consent before participating in the study. They were also informed that the information that they provided would be kept in the strictest confidence and that they could not be linked to their data. As a part of this process, the participants were further informed that they did not have to provide any identifying information (e.g., addresses and names). In the case of confidentiality, all participants were assured that only aggregate data would be reported (Strauss & Strauss 2014).

4.7 Data Analysis Techniques

4.7.1 Exploratory Factor Analysis and Reliability Analysis

The initial exploratory phase comprised an exploratory factor analysis (EFA) (principal components) and a reliability analysis to ensure the dimensionality and validation of the scales that were used (Adcock & Collier 2001). As Hair et al. (2010, p. 123) stated: 'An underlying assumption and essential requirement for creating a summated scale is that the items are unidimensional, meaning that they are strongly associated with each other and represent a single concept'. Since the researcher had adopted well-established measures and understood the underlying structure of the constructs, establishing the unidimensionality of the latent constructs was deemed to be more appropriate. Therefore, an EFA (principal components) and reliability analysis were performed to establish unidimensionality and reliability, as well as to achieve a certain degree of purification regarding the measures.

EFA is an interdependent and multivariate analysis that allows researchers to uncover the underlying dimensionality of the constructs or variables of the study (Hair et al. 2010, 2017). An EFA was performed for the purpose of data summarisation and reduction, which involves reducing the items to a more purified set for the primary data analysis (Hair et al. 2009).

For the EFA results to be valid, the data matrix must display sufficient intercorrelation (Hair et al. 2010). Hair et al. have suggested using Bartlett's Test of Sphericity, which allows the researcher to determine the appropriateness of factor analysis. This test analyses the entire correlation matrix, provides statistical significance for correlations and allows the researcher to conclude that the correlations exist between some variables (Hair et al. 2010). If the results of this test are significant, then factor analysis can be considered appropriate based on the correlations.

In addition to Bartlett's Test of Sphericity, another test can also be used to confirm the appropriateness of using EFA—that is, measures of sampling adequacy must be analysed (Hair et al. 2014). According to the authors, this measure quantifies the 'degree of intercorrelations among the variables and the appropriateness of factor analysis' (p. 102). These authors have suggested that any score below 0.5 is considered unacceptable. The most common measure of sampling adequacy is the Kaiser-Meyer-Olkin measure, which has been used in this study.

Once the appropriateness of EFA had been established, the researcher had to select the method of extraction and the number of factors that would outline the underlying structure of the data. There are two primary factor extraction methods: components analysis and common factor analysis (Hair et al. 2010). Hair et al. (2014) has noted that choosing an extraction method depends on the assumption of explained and unexplained variance for any given variable. In brief, it is necessary to understand the amount of variance that is shared, and that is not shared with other variables. Three categories can be used to explain the total variance of a variable: common variance, specific variance and error variance (Hair et al. 2014). In this study, the total variance consisting of the three variances is measured.

Based on the measure of total variance, the factoring method for this research is the components analysis—also known as principal components analysis (PCA). PCA 'considers the total variance and derives factors that contain small proportions of unique variance and, in some instances, error variance' (Hair et al. 2014, p. 105). Additionally, Hair et al. (2014) have suggested that PCA is appropriate when data reduction is the primary goal of the analysis and when a priori theoretical knowledge regarding errors and unique variance only explain a small aspect of the total variance. As this study meets the stipulated criteria for components analysis, PCA has thus been selected as the extraction method for this study.

PCA has several notable differences to common factor analysis (Fabrigar & Wegener 2012; Widaman 2007). The first difference is the fact that PCA was originally developed to reduce rather than identify the structure of the correlations. That is, the use of PCA does not generate principal components that can be considered a direct representation of the latent variables; rather, these components can be considered representations of an efficient method of gathering information regarding the latent variable (Fabrigar & Wegener 2012). The second difference is that PCA is mathematically distinct to the common factor model, with the former assuming the unique or specific variance to be zero (Fabrigar & Wegener 2012).

The next consideration involves the number of factors to extract. Hair et al. (2010) have suggested several methods for determining the number of factors to extract—including latent

root, a priori, percentage of variance, scree test and heterogeneity of the respondents. The researchers can choose to extract the factors based on eigenvalue (greater than 1), a predetermined number of factors, an established variance explained (greater than 60%), the presence of a substantial common variance and other factors when the sample is heterogeneous. In this research, the latent root criteria were selected, as the researcher wanted to test the number of factors that were generated per latent variable. The researcher selected the PCA method of extraction and extracted factors based on eigenvalue greater than 1.

The next stage, as suggested by Hair et al. (2014), involves interpreting the factors. Factor interpretation is most commonly performed by factor rotation (Hair et al. 2014). Rotation is a process that simplifies the data structure, in which the reference axes of the factors are rotated until they reach a different position (Hair et al. 2014; Thomson 2004). This rotation then generates a more meaningful pattern that is used to analyse the EFA results. There are two common methods of rotation: orthogonal and oblique rotation (Hair et al. 2014). In orthogonal rotation, the reference axes are retained at 90 degrees, whereas the oblique rotation has no such restraint (Hair et al. 2014). An oblique rotation was not chosen due to its limited availability in statistical packages and its shortcomings in the underlying analytical procedures (Hair et al. 2014). Therefore, orthogonal rotations were used in this study to perform the factor rotation.

At this point, it is important to consider the concept of factor loadings. Factor loadings represent the correlation between each factor and its variables (Hair et al. 2014). In brief, factor loadings represent the relevance that is attributed to any specific item in the analysis (Brown 2015). The generally accepted threshold for any given factor loading is 0.4, but any factor that loads above 0.5 is considered optimal and of a higher practical significance (Field 2005; Tabachnick & Fidell 2012). Further, Hair et al. (2014) noted that if the factor loading exceeds 0.7, then it explains more than 50 per cent of the variance in the variable. In this study, all factor loadings above 0.5 were considered, and all values below 0.5 were suppressed to obtain a cleaner and much simpler factor matrix. In terms of practical significance, this study aligns with the suggestions of Hair et al. (2014) and has thus considered loadings above 0.7 to be practically significant.

Orthogonal rotations contain several subtypes: Quartimax, Varimax and Equimax. Hair et al. (2014) stated that the Quartimax rotation focuses on the rows of the factor matrix and generates results in which one factor loads high on one factor and extremely low on other factors. However, this does not necessarily generate a simplified structure; as such, it was not used in the study. In contrast, Varimax focuses on the columns of the matrix and provides the highest simplification of the factors. Due to the underlying logic structure with which Varimax rotation

allows the factors to load, the rotated matrix has a simpler structure and provides a more distinct separation of the factors. Finally, the Equimax rotation is regarded as the bridge between Quartimax and Varimax and focuses on both the row and column. However, due to this reason, this rotation has not gained widespread application (Hair et al. 2014). In this study, due to the need for data reduction and simplification, Varimax was the chosen rotation. Within Varimax, the Kaiser normalisation (Kaiser 1958) was further applied in this study. Kaiser (1958) recommended that researchers should normalise the factors before the rotation can be applied and then denormalise them following the rotation.

The researcher should also consider the communalities, which are the measure of a measured item's variance that is shared among all the items that form the factor (Hair et al. 2006). Brown (2015) suggested that communality can also be suggested as the measure of reliability for a specific item within the factor. Another measure that is crucial for interpreting the factor solution is the percentage of variance that has been extracted by the solution (Hair et al. 2014). The authors have suggested that a satisfactory solution should explain 60 per cent or more of the variance in a factor solution. The threshold for communalities is established as 0.5. However, Hair et al. (2014) have also noted that if a low communality item contributes to a well-defined factor, then a researcher should consider retaining it. As dimension reduction techniques seek to identify items with a shared variance, it is suggested that any item with a communality score more than 0.2 should be retained (Child 2006). The present study adopted the threshold for communalities and percentage of variance extracted based on these stipulated guidelines.

However, relying exclusively on EFA is not appropriate and can lead to distortions in the results (Stellefeson et al. 2009). That is, the process of EFA can sometimes over-extract or under-extract factors, which can lead to distorted results (Hayton et al. 2004). Over-extraction causes the solution to have several components with minor items loaded together, which negatively influences the dominant factor (Zwick & Velicer 1986). Under-extraction can lead to a loss of information, which can lead to under-representation in the data. Therefore, the issues arising from over-extraction and under-extraction can lead to erroneous factor interpretation and reproduction (Stellefeson et al. 2009). In light of this, researchers should use other strategies in addition to EFA to determine the appropriate number of factors to retain in the case of a multifactor solution.

The present study employed the scree test to lend more credibility to the EFA results. The scree test is a visual test that allows the researcher to select the number of factors to retain based on a graphical interpretation (Cattell 1966). The scree test is commonly used to determine the

number of factors to retain (Fabrigar & Wegener 2012). Performing a scree test involves developing a graph of the eigenvalues that are generated through the factor analysis process in descending order. Through visual inspection, the graph is analysed to identify the first major drop in the slope of the line. All factors before the drop (known as 'the elbow') are to be considered towards the final solution (Fabrigar & Wegener 2012). However, due to the lack of statistical power and a reliance on visual inspection, the scree test has received several criticisms for being subjective (Kaiser 1970). Additionally, it could be possible that a multifactor solution reveals not just one major drop, but rather a series of incremental drops, which does not provide useful information regarding factor retention (Fabrigar & Wegener 2012). However, when a strong common factor is present, the scree test performs to the best degree possible (Cattell & Vogelmann 1977) and generally results in at least one to two factors that can be considered for retention (Hair et al. 2010).

Although the scree test can work as a supplemental procedure due to its high level of subjectivity in the case of multiple factors, it cannot be used independently when the researcher decides the number of factors to retain. Another robust test is parallel analysis. The strength of parallel analysis originates from its more objective approach (compared to the scree test) and its less arbitrary approach (compared to the eigenvalue method) (Fabrigar & Wegener 2012). Parallel analysis involves comparing the eigenvalues that are obtained from the data of the study, with the eigenvalues generated completely at random for the same number of cases and variables (O'Connor 2000). Parallel analysis generates a random order matrix with random eigenvalues, to which the researcher subsequently compares the actual eigenvalues. Actual eigenvalues that are lower than the randomly generated eigenvalues are rejected; only values that are higher than the random eigenvalues are accepted (Fabrigar & Wegener 2012). When conducting a PCA, researchers must compare the eigenvalues from the unreduced correlation matrix with the randomly generated eigenvalues (Fabrigar & Wegener 2012).

Although parallel analysis is a robust tool compared to the scree test, it also possesses limitations. For example, parallel analysis can be arbitrary and lead to the retention of a factor that is just meeting the criteria, and vice versa (Fabrigar & Wegener 2012). Fabrigar and Wegener (2012) argued that some researchers might consider parallel analysis not stringent or conservative enough, as the comparison between the actual and random eigenvalues is based on the basic assumption that the actual factor should only slightly outperform the random data for the factor to be retained. Therefore, the author suggested that parallel analysis is a process that should be used to establish the maximum number of the factors to be retained.

Regardless of the criticisms, parallel analysis is considered a robust procedure that allows researchers to be more accurate in their factor retention decisions, as compared to the scree test. Zwick and Velicer (1986) even considered parallel analysis to be one of the best procedures for informing factor retention decisions. Although parallel analysis as a procedure is not available in SPSS, a simple parallel analysis macro can be used to conduct the test (O'Connor 2000). After using the EFA to generate a factor matrix, this study employed the scree test and parallel analysis—in which multifactor solutions were generated—to aid factor retention decisions. For the parallel analysis, the actual eigenvalues that were greater than the randomly generated eigenvalues were retained.

In addition to the above tests, reliability analysis using the widely employed Cronbach's alpha was also performed (Bonett & Wright 2015). Cronbach's alpha scores that are greater than 0.7 are preferred, but those above 0.6 are considered valid. The measure of Cronbach's alpha allows the researcher to make conclusions regarding the internal consistency that is present in the data.

To summarise the discussion expressed in the paragraphs above, the following actions were performed. This study applied PCA with Varimax rotation and Kaiser normalisation. The factor loadings below 0.5 were suppressed, and the score of 0.7 was used as the threshold for practical significance. Communality was established at 0.5, and the percentage of explained variance was at 60 per cent. Bartlett's Test of Sphericity and Kaiser-Meyer-Olkin was used to measure the appropriateness of factor analysis. In line with these tests, EFA was applied to SME firm performance, dynamic capabilities, organisation structure (organicity), entrepreneurial orientation and time-based competitive advantage. Finally, the purpose of conducting EFA in this study was to test the dimensionality of the latent variables and to analyse whether they were aligned with a priori theory. The EFA results are presented in the following sections. To lend credibility to the decisions of factor retention, the scree test was conducted, which allowed the researcher to visually interpret which factors should be retained in the case of multifactor solutions. Further support was provided through parallel analysis, which was performed to help decide factor retention. In the process of parallel analysis, the actual eigenvalues that were greater than the randomly generated eigenvalues were retained. When a dominant factor arose with several smaller factors (fewer than two items), the dominant factor was retained for further analysis. Finally, reliability analysis was conducted on the reduced matrix to establish internal consistency using Cronbach's alpha.

4.7.2 Structural Equation Modelling

SEM is a second-generation technique and allows the researcher to measure unobserved variables that are measured by indicators (Hair et al. 2017). SEM also helps the researcher account for measurement errors that may be present in the observed variables (Chin 1998). It also allows the assessment of measurement and theory simultaneously, which is beneficial because separating theory and measurement can lead to falsified predictions and conclusions (Lowry & Gaskin 2014). Further, Lowry and Gaskin (2014) have stated that SEM allows the researcher to test multistage models—which is a process that first-generation techniques such as regression cannot perform.

There are two primary types of SEM: covariance-based SEM (CB-SEM) and partial least squares (PLS) path modelling, which is a variance-based technique. A large dataset is required for CB-SEM, the process of which is used to 'estimate a set of model parameters, the difference between the theoretical covariance matrix, implied by the structural equations system for the specified model' (Henseler et al. 2012, p. 252). Further, CB-SEM works with the assumption that the latent variables are reflective in nature and that the indicators have weights that are equally distributed (Hair et al. 2019). CB-SEM is usually conducted with the help of software such as AMOS and LISREL.

The use of variance-based PLS has grown in research over the past several decades (Henseler, Ringle & Sinkovics 2009; Lee 1997; Sambamurthy & Chin 1994). PLS is a component-based soft modelling approach that is conceptually different from AMOS. Using PLS is recommended when the research aims to explore new theoretical bases and when it has a small sample size and a complex model (Hair et al. 2019; Henseler et al. 2009). A complex model comprises several higher-order constructs and a combination of reflective and formative constructs. PLS is also recommended when the study aims to analyse various interaction effects between the variables of the study and when the researcher seeks to generate a predictive orientation for the conceptual framework (Chin, Marcolin & Newsted 2003; Fornell & Bookstein 1982; Hair et al. 2019; Henseler et al. 2009; Hsu & Field 2003).

Additionally, Sarstedt et al. (2020) conducted a critical analysis and identified that researchers often supplement their SEM research with additional regression analyses using the PROCESS macro to estimate mediation models. Sarstedt et al. (2020) noted that this dichotomy is remarkable in light of the long-standing recognition of the drawbacks of regression analyses when evaluating models with latent constructs. Sarstedt et al. (2020) demonstrated specifically how composite-based SEM methods resolve the weaknesses of both regression and factor-

based SEM methods when evaluating even extremely complex mediation models. Additionally, Sarstedt et al. (2020) concluded that when estimating mediation and conditional process models, composite-based SEM approaches such as partial least squares (PLS-SEM) are the favoured and superior approach, and that the PROCESS approach is unnecessary when using PLS-SEM to analyse mediation.

Additionally, PLS-SEM helps the researcher easily use pure formative models, pure reflective models and reflective–formative models; this contrasts with using CB-SEM, in which formative measurement is problematic (Chin 1998; Hair et al. 2017; Henseler 2009). In this study, one of the latent variables—dynamic capabilities—is formatively constructed (Wilden et al. 2013).

In the present study, the researcher has used PLS-SEM with the application of SmartPLS 3.2.8 (Ringle et al. 2015) to analyse the data. This was decided based on the fact that the hypothesised model is not a pure reflective model and because it is highly complex due to the presence of higher-order constructs that are not measured directly.

Due to its robustness, PLS-SEM has been extensively used in management and strategy research (Bontis et al. 2007; Drengner et al. 2008; Gruber et al. 2010; Henning-Thurau et al. 2007; Robins et al. 2002; Sattler et al. 2010). Therefore, it has also been adopted in this study.

4.7.3 Specifying the Measurement Model

Measurement models are models that depict the relationship between the latent variable and its corresponding indicator variables (Hair et al. 2017). To specify the measurement model, the first aspect that should be considered is whether the constructs are reflective or formative. In management research, structural models are usually specified by measuring the covariation between the constructs and the measured indicators of the latent variables (Borsboom et al. 2004). However, this is not possible for all latent variables, as they cannot be often measured by correlated items (Bollen & Lennox 1991; Fornell 1982). Another plausible, but less common, approach is to develop the latent variable by considering all of its potential indicators without any assumption of intercorrelation between these indicators. This results in a formatively developed construct (Diamantopoulos & Winklhofer 2001; Hair et al. 2017). According to the authors, the causality in a formative construct flows from the measured indicator to the construct. In simple terms, in a formative model, the measured indicators cause or lead to the latent construct. The standard discriminant validity, convergent validity and internal consistency cannot be empirically established for a formative measure (Bolleen & Lennox 1991). Diamantopoulos (2006) stated that the items in a formative model cannot have intercorrelations with one another. Although the assumption of whether a latent construct is formative or not is

based on theory (Hair et al. 2017), a confirmatory tetrad analysis can allow an empirical testing of the construct to understand whether the items behave as predicted or not (Gudergan et al. 2008). This tetrad test allows the researcher to reject or confirm the null hypothesis that the measured items are reflective in nature (Hair et al. 2017).

In contrast, a reflective model represents the effects of the construct (Hair et al. 2017). In brief, the latent construct exists independently of the observed items (Borsboom et al. 2004). Additionally, any variation in the latent variable will subsequently cause a variation in the measured items (Edwards & Bagozzi 2000). Rossiter (2002) asserted that in a reflective model, the measured items have intercorrelations, are based on a common theme and are interchangeable with one another. Therefore, eliminating one measured item will not induce influential changes in the latent construct.

In this study, only one latent variable was identified as being formative in nature: dynamic capabilities. Dynamic capabilities constitute an HOC, which is comprised of three LOCs: sensing, seizing and reconfiguring. Wilden et al. (2013), who posited the survey scale that this thesis adopted, have conceptualised dynamic capabilities as a multidimensional construct that is second-order formative (Diamantopoulos & Winklhofer 2001; Ringle et al. 2012). In brief, the measured items for each of the LOCs represent the effect of the LOCs, while the LOCs themselves cause the HOC.

Wilden et al. (2013) used the guidelines outlined by Jarvis et al. (2003) to determine if the construct of dynamic capacities was formative or reflective. They discovered that neither the measured item nor the LOCs could be substituted for one another. There is no convergence between the elements. This means that altering an organization's sensing capability would not often necessitate altering the way the organization reconfigures the capital. Wilden et al. (2013) have used confirmatory tetrad research to evaluate their hypotheses about the existence of dynamic capabilities empirically. The investigators discovered that, according to their theory, first-order measured items acted reflectively, while second-order LOCs behaved formatively. In light of this, the current research determined that doing another confirmatory tetrad review was redundant and acknowledged dynamic capabilities as a formative construct based on the insights of Wilden et al. (2013).

In conclusion, the overall measurement model of this study was neither a pure reflective model nor a pure formative model—it comprised both formative and reflective constructs. In this study, dynamic capabilities are a second-order formative construct, whereas the other latent constructs are reflective constructs. Following this discussion, using PLS-SEM for the analysis is

justified, as PLS-SEM can work with mixed formative–reflective models that are complex. Such models cannot be analysed using CB-SEM.

4.8 Validity and Reliability

The extent to which the findings in a given study can be considered valid and reliable depends on whether the questionnaire that was used to collect the data is considered valid and reliable. Validity denotes the extent to which the chosen research instruments truly measured the research aspects that the researcher intended to measure (Drost 2011). In contrast, reliability denotes the extent to which the study's results constitute an accurate representation of the target population and whether this presents as consistent over time (Silverman 2016). Saunders et al. (2012) identified three methods for validating a questionnaire: content, construct and external validity. In content validity, the researcher seeks to ensure that all dimensions and elements of the concept being considered have been well delineated (Saunders et al. 2009). To establish content validity, well-validated scales were adopted from past research.

In contrast, construct validity is described as the extent to which the measured items reflect the theoretical implicit and latent constructs in the questionnaire. According to Hair et al. (2010), the items in the questionnaire should help measure and explain how the instrument works and how its application can be interpreted. In line with Hair et al.'s (2017) guidelines, PLS-based SEM was conducted with the aim of assessing construct validity. Additionally, tests for internal consistency and reliability were performed, such as composite reliability. Further, the convergent validity was established by using the average variance extracted. Finally, discriminant validity was also evaluated using criteria such as Fornell-Larcker criterion and heterotrait-monotrait ratio (Hair et al. 2017).

Additionally, since the researcher had adopted well-established measures and understood the underlying structure of the constructs, establishing the unidimensionality of the latent constructs was deemed to be more appropriate. Therefore, an EFA (principal components) and reliability analysis were performed to establish unidimensionality and reliability, as well as to achieve a certain degree of purification regarding the measures.

4.9 Generalisability

4.10 Chapter Conclusion

This chapter has concluded with the choice of a positivist paradigm and a quantitative research design. With a deductive approach, the research strategy involves the collection of primary, cross-sectional data using well-established and validated scales for each of the latent constructs. This chapter has also outlined the data analysis techniques, which are categorised into exploratory/confirmatory and hypothesis testing. This chapter has further outlined and discussed the issues of validity and reliability.

Chapter 5: Data Analysis and Results

The primary aim of the study was to explore how SMEs use dynamic capabilities to sustain higher performance. Specifically, the study explored the mechanism by which dynamic capabilities affect SME firm performance through time-based competition. The study also sought to examine how organisation structure (organicity) and entrepreneurial orientation affected the deployment and development of dynamic capabilities. To meet this primary aim, a quantitative methodology with a survey method was adopted. This chapter evaluates the response rate and completeness of the data. Further, in the preliminary analysis, this chapter provides an insight into the accuracy of the data, its distribution and the presence (or absence) of biases. The descriptive statistics are also reported. Using PLS modelling, this chapter then outlines the process of evaluating the measurement model and the structural model. The results of the hypotheses testing are provided, and the chapter is finally summarised.

5.1 Response Rate and Completeness

Out of the 16,260 invited respondents from Kompass, 501 respondents returned the survey, which sets the response rate at 3.08 per cent. Prior research in a similar context has obtained response rates between and 10 to 20 per cent (Hernández-Linares et al. 2020; Nyadzayo et al. 2020; Reijonen et al. 2015; Swoboda & Olejnik 2014).

While the response rate is significantly lower, a low response rate was anticipated due to several factors. During the pilot study of the survey questionnaire, the respondents had commented on the length of the questionnaire and had stated that this could result in a low response rate. However, the complex model of the study limited the ability to shorten the questionnaire. Another identified factor included abandoned email addresses—that is, it was possible that many of the email addresses obtained on Kompass were not in use anymore. Another factor that could account for the low rate of response could be the possibility of the researcher's emails being sent the respondents' spam folders (Yan & Fan 2010). Further, Reijonen et al. (2015) outlined that a low response rate is highly prevalent in SME research due to companies receiving many emails every day. Such a low response rate, then, causes a non-response bias (Tanner Jr 1999) that can be evaluated by using a t-test. A similar approach was enacted by Nyadzayo et al. (2020), who used t-tests to calculate for non-response bias. This approach was thus adopted in the present study, and the results of the non-response bias are presented in the following sections.

After a preliminary scan of the data, 19 respondents were found to have abandoned the survey, and their limited responses were duly removed. For the remaining 482 responses, further missing value analysis was performed. Hair et al. (2017) have noted that missing values are acceptable if they remain within the five per cent threshold; however, they must be managed using methods such as mean replacements, replacement with the nearest neighbour and the expectation-maximisation algorithm. Such treatments of missing values prompt only slight variations in the results (Hair et al. 2017). The method of eliminating responses that contained missing values was also used, but Hair et al. (2017) have cautioned against such deletions due to a high likelihood of introducing biases into the data.

Missing value analysis was performed using the simple count function in SPSS (version 25), which counts user or system missing values in the data. There were no missing values in the completed responses, so the completeness of the survey data was thus validated.

5.2 Preliminary Analysis

5.2.1 Outliers

The presence of outliers can lead to substantially different results—such as higher correlation, which may skew the results (Pallant 2012). Outliers refer to cases that have significantly different values than the rest of the dataset (Pallant 2012). They occur for three primary reasons: 1) the data entry was incorrect, 2) the data analysis software coded the missing values as real values and 3) the outliers might represent a sample outside the sample being considered for the study (Tabachnick & Fidell 2012).

Outliers are divided into two types: univariate and multivariate. Univariate outliers comprise a single variable that contains an extreme case, while multivariate outliers have extreme cases in two or more variables. To identify any potential outliers in this study's dataset, the Mahalanobis distance was calculated using multiple regression analysis. No significant outliers were found in the current dataset. Since no outliers were present, the analysis progressed to the next stage.

5.2.2 Normality Analysis

Multivariate analysis is based on certain assumptions of normality. If the data do not follow a normal distribution, then the conclusions that are drawn from the data analysis cannot be validated (Tabachnick, Fidell & Ullman 2007). Normality can be measured using several tests—such as the Kolmogorov-Smirnov test, the Shapiro-Wilk test and skewness and kurtosis measures. However, Hair et al. (2017, p. 61) have cautioned against relying on the Kolmogorov-

Smirnov and Shapiro-Wilk tests, stating that 'as the bootstrapping procedure performs fairly robustly when data are non-normal, these tests provide only limited guidance when deciding whether the data are too far from being normally distributed'. Hair et al. (2017) stated that researchers should use skewness and kurtosis as the primary measures of non-normality. Skewness measures the symmetry of the data while kurtosis measures the 'peakness' that is found in the data (Hair et al. 2017). The generally accepted measure of skewness and kurtosis is close to zero for normally distributed data. However, Hair et al. (2017) have noted that the skewness and kurtosis values for multivariate analysis can be between +1 to –1 for the data to be considered normal.

In the current study, skewness and kurtosis were examined for each of the indicators to examine normality. The results are presented in Table 5.1.

Table 5.1: Skewness and Kurtosis

Construct	Code	N	Mean	Std. Deviation	Skewness	Kurtosis
Technological change	TT1	482	3.35	1.113	-.384	-.735
	TT2	482	2.48	1.119	.500	-.645
	TT3	482	2.68	.965	.546	-.656
	TT4	482	2.80	1.152	.166	-1.098
	TT5	482	3.35	.957	-.689	.014
Firm performance	FP_CS1	482	3.79	.700	-.160	-.148
	FP_CS2	482	3.80	.711	-.320	.082
	FP_CS3	482	3.84	.685	-.134	-.171
	FP_CS4	482	3.95	.759	-.296	-.358
	FP_ME1	482	3.30	.752	-.149	-.598
	FP_ME2	482	3.30	.907	.187	-.765
	FP_ME3	482	3.54	.872	.279	-.736
	FP_ME4	482	3.66	.774	-.037	-.433

Construct	Code	N	Mean	Std. Deviation	Skewness	Kurtosis
	FP_AP1	482	3.38	.821	.071	-.525
	FP_AP2	482	3.44	.866	.048	-.658
	FP_AP3	482	3.51	.844	.130	-.595
	FP_AP4	482	3.24	.958	-.050	-.630
Time-based competitive advantage	TTM1	482	3.68	.809	-.633	-.026
	TTM2	482	3.41	.993	-.271	-.445
	TTM3	482	3.54	.952	-.018	-.923
	TTM4	482	3.36	.847	.019	-.656
Entrepreneurial orientation	EO_I1	482	3.49	1.022	-.171	-.615
	EO_I2	482	3.68	.868	-.946	1.262
	EO_I3	482	4.13	.732	-1.002	1.643
	EO_RT1	482	2.96	1.050	.003	-.839
	EO_RT2	482	3.22	.841	.064	-.774
	EO_RT3	482	3.03	1.243	-.084	-.928

Construct	Code	N	Mean	Std. Deviation	Skewness	Kurtosis
	EO_P1	482	3.16	.889	-.345	-.552
	EO_P2	482	3.00	1.046	-.205	-.695
	EO_P3	482	3.41	.955	-.531	-.317
	DC_SN1	482	3.53	.718	-.252	.929
	DC_SN2	482	3.35	.980	-.634	.014
	DC_SN3	482	3.89	.970	-.497	-.742
	DC_SN4	482	3.46	1.015	-.569	-.676
	DC_SZ1	482	3.82	.947	-.724	.577
Dynamic capabilities	DC_SZ2	482	3.74	.843	-.726	.234
	DC_SZ3	482	4.00	.933	-.944	.915
	DC_SZ4	482	3.83	.829	-.350	-.383
	DC_RC1	482	2.91	1.038	-.396	-.618
	DC_RC2	482	3.16	.923	-.486	-.242
	DC_RC3	482	3.48	.967	-.490	-.384

Construct	Code	N	Mean	Std. Deviation	Skewness	Kurtosis
	DC_RC4	482	3.66	.888	-.575	.738
Organisation structure	OS1	482	5.65	1.048	-.720	.231
	OS2	482	5.68	1.077	-.131	-1.278
	OS3	482	5.43	1.115	-.188	-1.022
	OS4	482	5.05	1.212	-.102	-.989
	OS5	482	5.61	1.104	-.565	-.287
	OS6	482	5.67	1.122	-.477	-.789
Environmental dynamism	ED1	482	3.26	0.987	-0.769	-0.299
	ED2	482	3.4	1.102	-0.311	-0.817
	ED3	482	3.27	1.055	0.08	-1.317
	ED4	482	2.95	0.964	0.3	-0.807
	ED5	482	3.18	0.893	-0.116	-0.429
Technological turbulence	TT1	482	3.36	1.116	-0.385	-0.738
	TT2	482	2.76	1.21	-0.319	-1.481

Construct	Code	N	Mean	Std. Deviation	Skewness	Kurtosis
	TT3	482	2.68	0.965	0.544	-0.665
	TT4	482	2.8	1.157	0.167	-1.098
	TT5	482	3.36	0.956	-0.696	0.023

Based on Table 5.1, it can be noted that the skewness values ranged from –1.360 to 0.546 and that the kurtosis values ranged from –1.278 to 2.384. Despite the slightly raised values, most of the displayed skewness and kurtosis values are within the guidelines of +1 and –1, as outlined by Hair et al. (2017). The slightly elevated values suggest conditions of mild skewness and kurtosis, which are judged to be within normal limits (i.e., factor analysis will not be affected) (Heck 1998). Additionally, several scholars have outlined that the maximum threshold for skewness is greater than 3.00 and greater than 10.00 for kurtosis (Hu, Bentler & Kano 1992; Kline 2005; Schumacher & Lomax 1996). Since none of the values of skewness or kurtosis reached these maximum threshold values, the data were accepted as being normally distributed—and non-normality was not a major concern for this study's dataset. Further, Hair et al. (2017) have noted that PLS-SEM, which is used in this study, can handle slightly non-normal data and that it does not assume normality. Nevertheless, the slightly elevated skewness and kurtosis values called for further tests, the results of which are discussed in some of the following sections to ensure that normality of distribution can be assumed.

5.3 EFA and Reliability Analysis

5.3.1 EFA on Firm Performance

Firm performance is an HOC that conceptually comprises three LOCs: customer satisfaction, market effectiveness and anticipated profitability. These LOCs were measured using 12 questionnaire items. A PCA with Varimax rotation was performed on the 12 items to evaluate the multidimensional nature of firm performance.

The Kaiser-Meyer-Olkin measure of sampling adequacy was 0.858, which was greater than the established minimum threshold of 0.5 (Hair et al. 2014). Similarly, Bartlett's Test of Sphericity was significant for firm performance ($\chi 2\ (66) = 3316.353$, $p < 0.01$).

Table 5.2 depicts the item communalities and demonstrates that with the exception of one item, the values are above the recommended 0.5. This suggests that the inter-item correlations are good (Hair et al. 2014) and that the items are reliable (Brown, 2006).

Table 5.2: Communalities for Firm Performance

	Initial	Extraction
FP_CS1	1.000	.530
FP_CS2	1.000	.664
FP_CS3	1.000	.607
FP_CS4	1.000	.563
FP_ME1	1.000	.486
FP_ME2	1.000	.693
FP_ME3	1.000	.676
FP_ME4	1.000	.505
FP_AP1	1.000	.650
FP_AP2	1.000	.649
FP_AP3	1.000	.531
FP_AP4	1.000	.681

Note: Extraction method—principal component analysis.

Following this, two factors were extracted (see Table 5.3), explaining more than 60 per cent of the variance.

Table 5.3: Factors Extracted for Firm Performance

Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	6.144	51.201	51.201	6.144	51.201	51.201	3.943	32.861	32.861
2	1.092	9.098	60.299	1.092	9.098	60.299	3.293	27.438	60.299
3	.916	7.635	67.934						
4	.848	7.069	75.003						
5	.635	5.292	80.295						
6	.562	4.684	84.978						
7	.430	3.580	88.558						
8	.392	3.263	91.821						
9	.344	2.868	94.689						
10	.280	2.332	97.020						
11	.204	1.696	98.716						
12	.154	1.284	100.000						

Note: Extraction method—principal component analysis.

Factor loadings were then analysed, demonstrating that no cross-loadings for any of the items were evident (see Table 5.4).

Table 5.4: Rotated Component Matrix for Firm Performance

	Component	
	1	**2**
FP_CS1		.701
FP_CS2		.766
FP_CS3		.742
FP_CS4		.660
FP_ME1	.595	
FP_ME2	.784	
FP_ME3		.732
FP_ME4	.663	
FP_AP1	.757	
FP_AP2	.791	
FP_AP3	.638	
FP_AP4	.700	

Note: Extraction method—principal component analysis.

Rotation method: Varimax with Kaiser Normalisation.

a. Rotation converged in three iterations.

The scree plot (see Figure 5.1) depicted firm performance as comprising two factors based on eigenvalues.

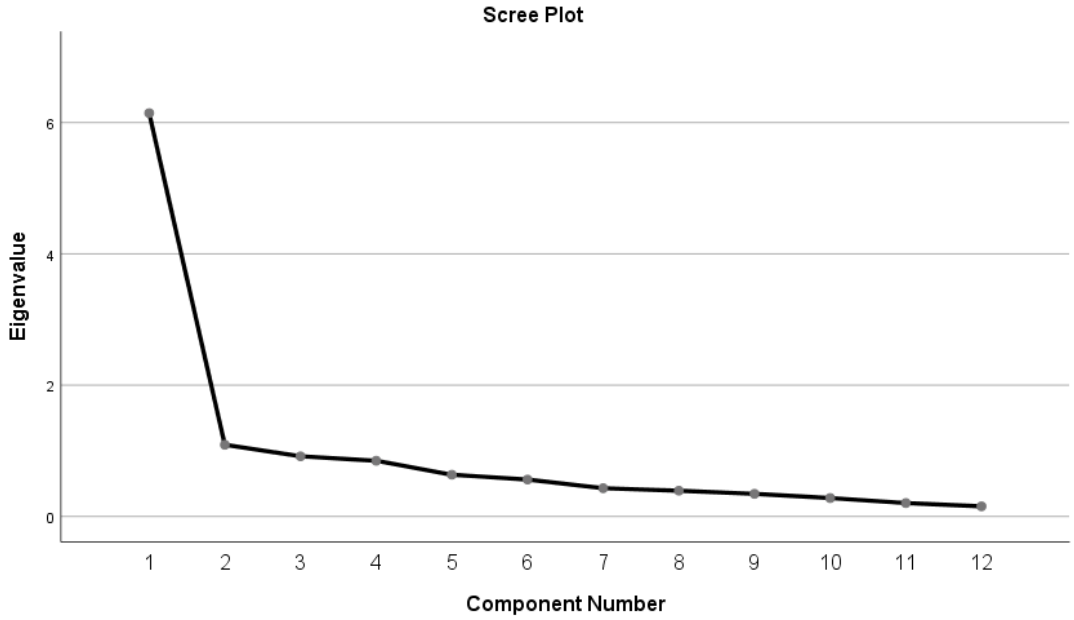

Figure 5.1: Scree Plot for Firm Performance

However, when compared with the random order eigenvalues that the parallel analysis generated (see Table 5.5), only one factor emerged. In a subsequent analysis (PLS modelling), firm performance was treated as a unidimensional construct that comprised seven items (FP_ME1, FP_ME2, FP_ME4, FP_AP1, FP_AP2, FP_AP3 and FP_AP4). Cronbach's alpha was 0.884, thereby depicting good internal consistency.

Table 5.5: Parallel Analysis for Firm Performance

Root	Means	Percentile	Actual Eigenvalue from PCA	Decision
1.00	1.264555	1.322797	6.144	Accept
2.00	1.196245	1.237733	1.092	Reject
3.00	1.138474	1.177376	.916	Reject
4.00	1.09351	1.123311	.848	Reject
5.00	1.056496	1.080328	.635	Reject
6.00	1.017564	1.043357	.562	Reject
7.00	0.976691	1.0024	.430	Reject
8.00	0.937664	0.963514	.392	Reject
9.00	0.895069	0.932921	.344	Reject
10.00	0.852789	0.886251	.280	Reject
11.00	0.811941	0.844061	.204	Reject
12.00	0.759002	0.796548	.154	Reject

5.3.2 EFA of Entrepreneurial Orientation

The LOC of entrepreneurial orientation is measured with nine items that are drawn from three categories: risk-taking, proactiveness and innovativeness. PCA with Varimax rotation and Kaiser normalisation was performed for the nine dimensions to evaluate the multidimensional nature of entrepreneurial orientation.

The Kaiser-Meyer-Olkin measure of sampling adequacy was 0.706, which was greater than the minimum established threshold of 0.5 (Hair et al. 2014). Similarly, Bartlett's Test of Sphericity was significant for entrepreneurial orientation ($\chi 2\ (66) = 2245.015$, $p < 0.01$).

Table 5.6 displays the item communalities, in which all values are above the recommended 0.5. This suggests that the inter-item correlations are good and that the items are reliable (Brown 2006; Hair et al. 2014).

Table 5.6: Communalities for Entrepreneurial orientation

	Communalities	
	Initial	**Extraction**
EO_I1	1.000	.717
EO_I2	1.000	.502
EO_I3	1.000	.612
EO_RT1	1.000	.858
EO_RT2	1.000	.593
EO_RT3	1.000	.742
EO_P1	1.000	.615
EO_P2	1.000	.678
EO_P3	1.000	.689

Note: Extraction method—principal component analysis.

Following this, two factors were extracted (see Table 5.7) that explained more than 63.40 per cent of the variance

Table 5.7: Factors Extracted for Entrepreneurial Orientation

Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	4.087	45.409	45.409	4.087	45.409	45.409	3.461	38.452	38.452
2	1.019	17.994	63.403	1.019	17.994	63.403	1.016	24.951	63.403
3	.964	10.715	74.118						
4	.682	7.583	81.701						
5	.529	5.877	87.578						
6	.414	4.603	92.181						
7	.385	4.274	96.454						
8	.188	2.087	98.542						
9	.131	1.458	100.000						

Note: Extraction method—principal component analysis.

The factor loadings for each item that measured entrepreneurial orientation were analysed and established no cross-loadings for any of the items (see Table 5.8).

Table 5.8: Rotated Component Matrix for Entrepreneurial Orientation

Rotated Component Matrix[a]		
	Component	
	1	2
EO_I1		.811
EO_I2		
EO_I3	.782	
EO_RT1		.926
EO_RT2	.759	
EO_RT3	.861	
EO_P1	.574	
EO_P2	.689	
EO_P3	.814	

Note: Extraction method—principal component analysis.

Rotation method: Varimax with Kaiser normalisation.

a. Rotation converged in three iterations.

The rotated component matrix reveals a four-factor solution with a dominant component that was measured with six items. Three other components also emerged, each measured by two items. Subsequent parallel analysis (see Table 5.9) and a scree test (see Figure 5.2) provided support for a one-factor solution to measure entrepreneurial orientation. In a subsequent analysis (PLS modelling), entrepreneurial orientation was measured with six items. Cronbach's alpha was 0.871, thereby depicting good internal consistency.

Table 5.9: Parallel Analysis for Entrepreneurial Orientation

Root	Means	Percentile	Actual Eigenvalue from PCA	Decision
1.00	1.148359	1.261972	4.087	Accept
2.00	1.136316	1.182938	1.019	Reject
3.00	1.083569	1.117791	0.964	Reject
4.00	1.038629	1.068989	0.682	Reject
5.00	0.995911	1.020613	0.529	Reject
6.00	0.956829	0.984963	0.414	Reject
7.00	0.909227	0.939242	0.385	Reject
8.00	0.862590	0.894401	0.188	Reject
9.00	0.805207	0.852267	0.131	Reject

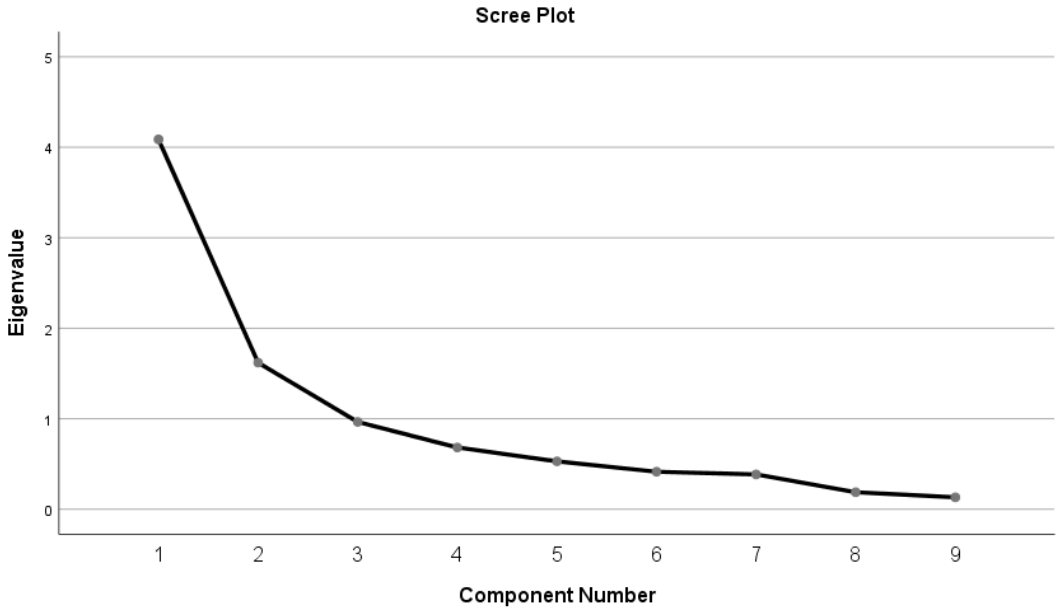

Figure 5.2: Scree Plot for Entrepreneurial Orientation

5.3.3 EFA for Dynamic Capabilities

Following Wilden et al. (2013), dynamic capabilities are treated as a higher-order formative construct that comprises three reflective LOCs: sensing, seizing and reconfiguring. These LOCs were measured using four questionnaire items each. A separate PCA with Varimax rotation and

Kaiser normalisation was also performed on each of the LOCs to evaluate their unidimensionality.

The Kaiser-Meyer-Olkin measure of sampling adequacy was 0.511, which was greater than the established minimum threshold of 0.5 (Hair et al. 2014). Bartlett's Test of Sphericity was found to be significant ($\chi 2$ (6) = 102.723, $p < 0.01$). Additionally, communalities were above 0.5 for all items (see Table 5.10).

Table 5.10: Communalities for Sensing–Dynamic Capabilities

	Communalities	
	Initial	**Extraction**
DC_SN1	1.000	.523
DC_SN2	1.000	.699
DC_SN3	1.000	.636
DC_SN4	1.000	.674

Note: Extraction method—principal component analysis.

However, the factor solution suggests that sensing is a multidimensional measure, with two components explaining more than 63.32 per cent of the total variance (see Table 5.11). SN1 and SN3 appear to be measuring sensing in regard to best practices, while SN2 and SN4 were noted as measuring sensing in regard to market sensing.

Table 5.11: Factor Analysis for Entrepreneurial Orientation

Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	1.451	36.273	36.273	1.451	36.273	36.273	1.447	36.166	36.166
2	1.082	27.044	63.317	1.082	27.044	63.317	1.086	27.151	63.317
3	.889	22.226	85.543						
4	.578	14.457	100.000						

Note: Extraction method—principal component analysis.

A scree test (see Figure 5.3) and a parallel analysis (see Table 5.12) also supported the retention of the above two factors.

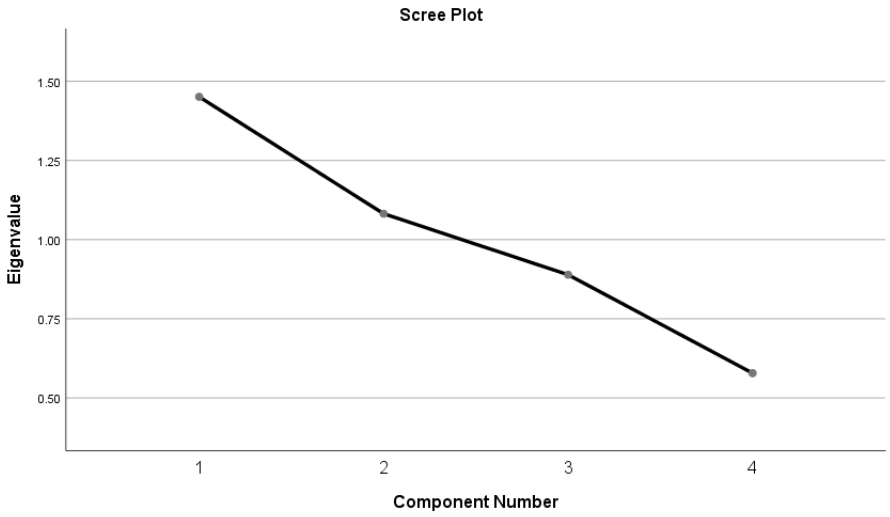

Figure 5.3: Scree Plot for Sensing–Dynamic Capabilities

Table 5.12: Parallel Analysis for Sensing–Dynamic Capabilities

Root	Means	Percentile	Actual Eigenvalue from PCA	Decision
1.00	1.102976	1.160069	1.451	Accept
2.00	1.024097	1.057419	1.082	Accept
3.00	0.972337	1.002735	.889	Reject
4.00	0.900590	0.950001	.578	Reject

In a subsequent analysis, items SN1 and SN3 were averaged to measure the first component (best practice sensing), while items SN2 and SN4 were averaged to measure the second component (marketplace sensing). The composite scores for each set of items comprising each sensing component were used as indicators of the sensing dimension.

Table 5.13: Factors Rotated for Sensing–Dynamic Capabilities

Rotated Component Matrix[a]		
	Component	
	1	2
DC_SN1		.689
DC_SN2	.835	
DC_SN3		.777
DC_SN4	.817	

Note: Extraction method—principal component analysis.

Rotation method: Varimax with Kaiser normalisation.

a. Rotation converged in three iterations.

Similarly, for seizing, the Kaiser-Meyer-Olkin measure of sampling adequacy was 0.465, which was marginally lower than the established minimum threshold of 0.5. However, Bartlett's Test of Sphericity was significant ($\chi 2$ (6) = 211.193, $p < 0.01$). Additionally, communalities were above 0.5 for all items (see Table 5.14).

Table 5.14: Communalities for Seizing–Dynamic Capabilities

Communalities		
	Initial	Extraction
DC_SZ1	1.000	.522
DC_SZ2	1.000	.876
DC_SZ3	1.000	.489
DC_SZ4	1.000	.857

Note: Extraction method—principal component analysis.

The rotated component matrix generated a two-factor solution that explained 68.6 per cent of the total variance. The first component comprised three items, with one item loading onto a second component (see Tables 5.15 and 5.16).

Table 5.15: Factor Analysis for Seizing–Dynamic Capabilities

Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	1.694	42.340	42.340	1.694	42.340	42.340	1.460	36.507	36.507
2	1.050	26.254	68.593	1.050	26.254	68.593	1.283	32.087	68.593
3	.809	20.232	88.825						
4	.447	11.175	100.000						

Note: Extraction method—principal component analysis.

Table 5.16: Factors Rotated for Seizing–Dynamic Capabilities

Rotated Component Matrix[a]

	Component	
	1	**2**
DC_SZ1	.584	
DC_SZ2		.936
DC_SZ3	.544	
DC_SZ4	.907	

Note: Extraction method—principal component analysis.

Rotation method: Varimax with Kaiser normalisation.

a. Rotation converged in three iterations.

However, due to the second component being a minor factor as a result of over-extraction (Stellefeson et al. 2009), only one component that comprised three items (DC_SZ1, DC_SZ3 and DC_SZ4) was retained for further analysis. The parallel analysis also supported this decision.

Finally, for reconfiguring, the Kaiser-Meyer-Olkin measure of sampling adequacy was 0.645, which was above the established minimum threshold of 0.5 (Hair et al. 2014). Further, Bartlett's Test of Sphericity was found to be significant for seizing ($\chi 2$ (6) = 347.261, $p < 0.01$). With the exception of one item, all communalities were above 0.5 (see Table 5.17).

Table 5.17: Communalities for Reconfiguring–Dynamic Capabilities

Communalities		
	Initial	**Extraction**
DC_RC1	1.000	.282
DC_RC2	1.000	.629
DC_RC3	1.000	.478
DC_RC4	1.000	.637

Note: Extraction method—principal component analysis.

The factor solution suggested that reconfiguring is a single-factor solution that comprises four items, explaining more than 50.64 per cent of the total variance (see Tables 5.18 and 5.19). One item with a communality of .478 was retained because it contributed to a well-defined factor (Hair et al. 2014).

Table 5.18: Factor Analysis for Reconfiguring–Dynamic Capabilities

Total Variance Explained						
	Initial Eigenvalues			Extraction Sums of Squared Loadings		
Component	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	2.026	50.642	50.642	2.026	50.642	50.642
2	.935	23.383	74.025			
3	.639	15.978	90.003			
4	.400	9.997	100.000			

Note: Extraction method—principal component analysis.

Table 5.19: Factors Rotated for Reconfiguring–Dynamic Capabilities

Component Matrix[a]	
	Component
	1
DC_RC1	.531
DC_RC2	.793
DC_RC3	.692
DC_RC4	.798

Note: Extraction method—principal component analysis.

a. One component extracted.

Following the parallel analysis and the visual scree test, the study retained all four items (DC_RC1, DC_RC2, DC_RC3 and DC_RC4) for further analysis.

5.3.4 EFA for Organisation Structure (Organicity)

An organisation structure is an LOC that conceptually comprises six items. To establish unidimensionality, PCA with Varimax rotation and Kaiser normalisation was performed for this LOC. The KMO measure of sampling adequacy was 0.748, which was greater than the established minimum threshold of 0.5. Similarly, Bartlett's Test of Sphericity was significant for organisation structure ($\chi 2$ (15) = 781.897, $p < 0.01$).

Table 5.20 displays the item communalities and demonstrates that all values are above the recommended 0.5, which suggests that the inter-item correlations are good and that the items are reliable.

Table 5.20: Communalities for Organisation Structure (Organicity)

Communalities		
	Initial	**Extraction**
OS1	1.000	.856
OS2	1.000	.613
OS3	1.000	.630
OS4	1.000	.546
OS5	1.000	.570
OS6	1.000	.717

Note: Extraction method—principal component analysis.

Following this, two factors were extracted (see Table 5.21) that explained more than 65 per cent of the variance.

Table 5.21: Factors Extracted for Organisation Structure (Organicity)

	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
Component	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	2.802	46.696	46.696	2.802	46.696	46.696	2.356	39.259	39.259
2	1.131	18.848	65.543	1.131	18.848	65.543	1.577	26.285	65.543
3	.734	12.229	77.772						
4	.544	9.058	86.831						
5	.423	7.047	93.878						
6	.367	6.122	100.000						

Note: Extraction method—principal component analysis.

Due to the emergence of one dominant factor that comprised four items (see Table 5.22), two items that loaded onto a smaller factor were eliminated.

Table 5.22: Rotated Component Matrix for Organisation Structure (Organicity)

	Component	
	1	**2**
OS1		.922
OS2	.640	
OS3	.794	
OS4	.735	
OS5	.729	
OS6		.692

Note: Extraction method—principal component analysis.

Rotation method: Varimax with Kaiser normalisation.

a. Rotation converged in three iterations.

The total variance explained by the four items (OS2, OS3, OS4 and OS5) was 46.69 per cent, while the communalities remained above the threshold of 0.5. The scree test (see Figure 5.4) and parallel analysis also supported the retention of the above single factor.

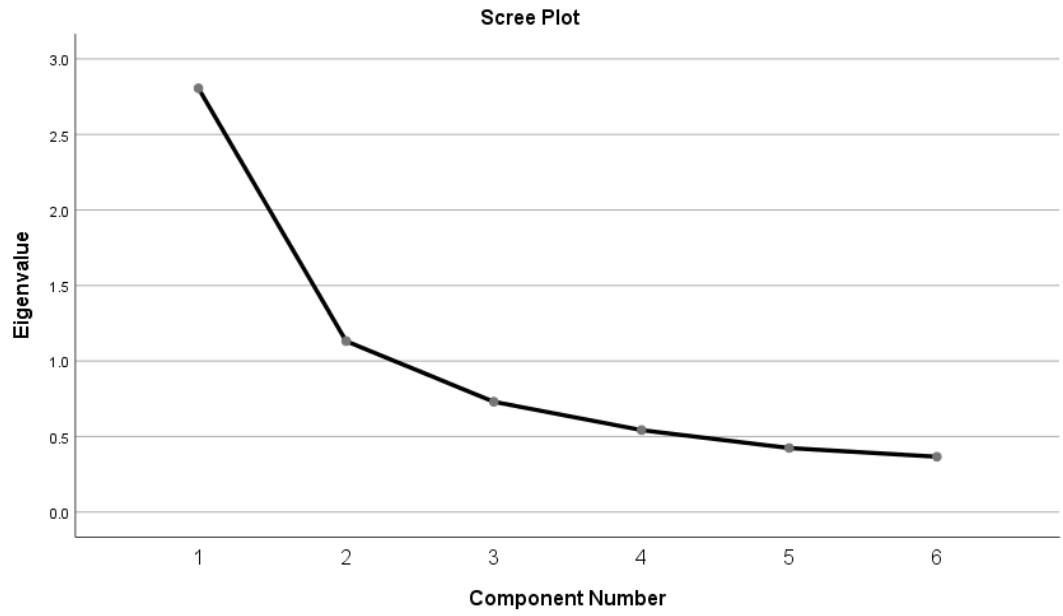

Figure 5.4: Scree Plot for Sensing–Dynamic Capabilities

Note: Cronbach's alpha was 0.746, thereby depicting good internal consistency

Table 5.23: Parallel Analysis for Organisation Structure (Organicity)

Root	Means	Percentile	Actual Eigenvalue from PCA	Decision
1.00	1.148359	1.218286	2.802	Accept
2.00	1.074700	1.112468	1.1	Reject
3.00	1.023204	1.055759	.734	Reject
4.00	0.972927	1.005349	.544	Reject
5.00	0.921960	0.952556	.423	Reject
6.00	0.858849	0.903307	.367	Reject

5.3.5 EFA for Time-Based Competitive Advantage

Time-based competitive advantage is an LOC that conceptually comprises four items. To establish unidimensionality, PCA with Varimax rotation and Kaiser normalisation was performed for this LOC.

The KMO measure of sampling adequacy was 0.696, which was greater than the established minimum threshold of 0.5 (Hair et al. 2014). Similarly, Bartlett's Test of Sphericity was significant for organisation structure ($\chi 2$ (15) = 534.128, $p < 0.01$).

Table 5.24 reveals the item communalities and demonstrates that the values are above the recommended 0.50 for three of the four items. The fourth item is retained, despite a low communality. This is in line with Child's (2006) recommendation to remove an item with a communality score of less than 0.2.

Table 5.24: Communalities for Time-Based Competitive Advantage

	Communalities	
	Initial	Extraction
TTM1	1.000	0.735
TTM2	1.000	0.709
TTM3	1.000	0.582

TTM4	1.000	0.268

Note: Extraction method—principal component analysis.

Following this, one factor was extracted (see Table 5.25) that explained more than 57.3 per cent of the total variance.

Table 5.25: Factors Extracted for Time-Based Competitive Advantage

Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	2.294	57.339	57.339	2.294	57.339	57.339
2	.899	22.476	79.815			
3	.467	11.677	91.492			
4	.340	8.508	100.000			

Note: Extraction method—principal component analysis.

Due to the emergence of a one-factor solution, all four items were retained for subsequent data analysis. Cronbach's alpha was 0.739, thereby depicting good internal consistency.

Table 5.26: Rotated Component Matrix for Time-Based Competitive Advantage

Component Matrix[a]	
	Component
	1
TTM1	.857
TTM2	.842
TTM3	.763
TTM4	.518

Note: Extraction method—principal component analysis.

a. One component extracted.

5.3.6 EFA for Technological Turbulence

Technological turbulence is an LOC that conceptually comprises five items. However, one of the items (TT2) was eliminated due to issues of internal consistency. To establish unidimensionality, PCA with Varimax rotation and Kaiser normalisation was performed for this LOC.

The KMO measure of sampling adequacy was 0.672, which was greater than the established minimum threshold of 0.5 (Hair et al. 2014). Similarly, Bartlett's Test of Sphericity was significant for organisation structure ($\chi 2$ (6) = 601.539, $p < 0.01$).

Table 5.27 displays the item communalities and demonstrates that the values are above the recommended 0.50 for the four items.

Table 5.27: Communalities for Technological Turbulence

Communalities		
	Initial	**Extraction**
TT1	1.000	.626
TT3	1.000	.721
TT4	1.000	.580
TT5	1.000	.504

Note: Extraction method—principal component analysis.

Following this, one factor was extracted (see Table 5.28) that explained more than 60.78 per cent of the total variance.

Table 5.28: Factors Extracted for Technological Turbulence

Total Variance Explained						
	Initial Eigenvalues			Extraction Sums of Squared Loadings		
Component	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	2.431	60.780	60.780	2.431	60.780	60.780
2	.648	16.204	76.984			
3	.637	15.926	92.909			
4	.284	7.091	100.000			

Note: Extraction method—principal component analysis.

Due to the emergence of a one-factor solution, all four items (TT1, TT3, TT4 and TT5) were retained for subsequent data analysis. Cronbach's alpha was 0.783, thereby depicting good internal consistency.

Table 5.29: Rotated Component Matrix for Environmental Dynamism

Component Matrix[a]	
	Component
	1
TT1	.791
TT3	.849
TT4	.762
TT5	.710

Note: Extraction method—principal component analysis.

a. One component extracted.

5.3.7 EFA for Environmental Dynamism

Environmental dynamism is an LOC that conceptually comprises five items. However, two of the items (ED1 and ED2) were eliminated due to issues of internal consistency. To establish unidimensionality, PCA with Varimax rotation and Kaiser normalisation was performed for this LOC.

The KMO measure of sampling adequacy was 0.583, which was lower than the established minimum threshold of 0.5 (Hair et al. 2014). However, it is considered acceptable. Similarly, Bartlett's Test of Sphericity was significant for environmental dynamism ($\chi 2$ (6) = 601.539, $p < 0.01$).

Table 5.30 outlines the item communalities and demonstrates that the values are above the recommended 0.50 for two of the three items. As dimension reduction techniques seek to identify items with a shared variance, remove any item with a communality score of less than 0.2 is advisable (Child 2006). Therefore, with a communality of 0.358, ED5 is retained (as it is greater than 0.2) and because it contributes to a well-defined factor.

Table 5.30: Communalities for Environmental Dynamism

Communalities		
	Initial	**Extraction**
ED3	1.000	.678
ED4	1.000	.728
ED5	1.000	.358

Extraction method—principal component analysis.

Following this, one factor was extracted (see Table 5.31), explaining more than 58.81 per cent of the total variance.

Table 5.31: Factors Extracted for Technological Turbulence

Total Variance Explained						
	Initial Eigenvalues			Extraction Sums of Squared Loadings		
Component	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	1.764	58.809	58.809	1.764	58.809	58.809
2	.810	27.014	85.823			
3	.425	14.177	100.000			

Note: Extraction method—principal component analysis.

Due to the emergence of a one-factor solution, all three items were retained for subsequent data analysis. Cronbach's alpha was 0.644, thereby depicting good internal consistency.

Table 5.32: Rotated Component Matrix for Environmental Dynamism

Component Matrix[a]	
	Component
	1
ED3	.824
ED4	.853
ED5	.599

Note: Extraction method—principal component analysis.

a. One component extracted.

5.4 Common Method Bias

5.4.1 Harman's Single-Factor Test

In terms of analysing common method bias, one of the most common analyses is Harman's single-factor test. This test assumes the presence of common method bias when a single-factor emerges that explains more than 50 per cent of the variance in an unrotated matrix that comprises all the possible variables of the study that are loaded simultaneously (Harman, 1976).

Following this, all items of the study's dependent and independent variables were loaded into a PCA (no rotation was selected). Only one factor was allowed to load and explained only 15.79 per cent of the total variance. Therefore, since the explained variable was less than the stipulated 50 per cent, common method bias was consequently an unlikely issue in this study.

However, since Harman's single-factor test is not considered sensitive enough for an accurate detection of common method bias (Podsakoff et al. 2003; Fuller et al. 2016), another test was used to check for mono-method bias. The partial correlation using a marker variable (Lindell & Whitney 2001) was used to check for mono-method bias. In this method, a marker variable is assigned (a measured variable), and a partial correlation analysis is performed. The variable used as the marker variable was industry hostility, which is theoretically linked to only one of the study's main variables. A marker variable should have no theoretical or conceptual relationship with at least one of the study's primary variables. Industry hostility reported a Cronbach's alpha score of 0.60 and was added to the questionnaire to serve as a marker variable. Using the partial correlation technique, mono-method bias is said to be present if the correlation coefficients

differ significantly when the marker variable is controlled (Lindell & Whitney 2001). Table 5.33 outlines the correlations between the study's variables and the marker variable.

Table 5.33: Common Method Bias Using Partial Correlation with Marker Variable

Correlations

Control Variables			SME firm performance	Time-based competitive advantage	Entrepreneurial orientation	Dynamic capabilities	Organisation structure (organicity)	Industry hostility
-none-[a]	SME Firm Performance	Correlation	1.000					
		Significance (2-tailed)	.					
		df	0					
	Time-based competitive advantage	Correlation	.375	1.000				
		Significance (2-tailed)	.000	.				
		df	480	0				
	Entrepreneurial Orientation	Correlation	.466	.535	1.000			
		Significance (2-tailed)	.000	.000	.			
		df	480	480	0			
	Dynamic Capabilities	Correlation	.566	.374	.513	1.000		
		Significance (2-tailed)	.000	.000	.000	.		
		df	480	480	480	0		
	Organisation Structure (Organicity)	Correlation	.149	-.223	-.085	.195	1.000	
		Significance (2-tailed)	.001	.000	.062	.000	.	
		df	480	480	480	480	0	
	Industry Hostility	Correlation	-.159	-.078	-.017	.123	-.218	1.000
		Significance (2-tailed)	.000	.089	.717	.007	.000	.
		df	480	480	480	480	480	0

As can be observed in Table 5.33, the marker variable is correlated with dynamic capabilities, organicity, and SME firm performance—though the correlations are low. In analysing the correlation coefficient, it can be inferred that common method bias was an unlikely issue in the present study (Podsakoff et al. 2003).

Table 5.34 outlines the correlations between the variables when the marker variable is controlled. As can be noted, no significant difference exists between the correlations in the presence and absence of the marker variable.

Table 5.34: Common Method Bias Using Partial Correlation with Marker Variable Controlled

			SME Firm Performance	Time-Based Competitive Advantage	Entrepreneurial Orientation	Dynamic Capabilities	Organisation Structure (Organicity)	Industry Hostility
Industry Hostility	SME Firm Performance	Correlation	1.000					
		Significance (2-tailed)	.					
		df	0					
	Time-based competitive advantage	Correlation	.368	1.000				
		Significance (2-tailed)	.000	.				
		df	479	0				
	Entrepreneurial Orientation	Correlation	.470	.535	1.000			
		Significance (2-tailed)	.000	.000	.			
		df	479	479	0			
	Dynamic Capabilities	Correlation	.597	.388	.519	1.000		
		Significance (2-tailed)	.000	.000	.000	.		
		df	479	479	479	0		
	Organisation Structure (Organicity)	Correlation	.119	-.247	-.091	.229	1.000	
		Significance (2-tailed)	.009	.000	.046	.000	.	
		df	479	479	479	479	0	

A similar analysis was performed for the subdimensions of each of the primary variables. The results indicated that common method bias was an unlikely issue in the present study (see Tables 5.35 and 5.36).

Table 5.35: Common Method Bias Using Partial Correlation with Marker Variable

Correlations

Control Variables			Customer Satisfaction SME Firm Performance	Market Effectiveness SME Firm Performance	Anticipated profitability SME Firm Performance	Time-Based Competitive Advantage	Innovativeness Entrepreneurial Orientation	Risk-taking Entrepreneurial Orientation	Proactiveness Entrepreneurial Orientation	Sensing Dynamic Capabilities	Seizing Dynamic Capabilities	Reconfiguring Dynamic Capabilities	Organisation Structure	Industry Hostility
-none	Customer Satisfaction SME Firm Performance	Correlation	1.000											
		Significance (2-tailed)	.											
		df	0											
	Market Effectiveness SME Firm Performance	Correlation	.719	1.000										
		Significance (2-tailed)	.000	.										
		df	480	0										
	Anticipated profitability SME Firm Performance	Correlation	.656	.794	1.000									
		Significance (2-tailed)	.000	.000	.									
		df	480	480	0									

	Time-Based Competitive Advantage	Correlation	.339	.329	.348	1.000								
		Significance (2-tailed)	.000	.000	.000	.								
		df	480	480	480	0								
	Innovativeness Entrepreneurial Orientation	Correlation	.053	.135	.236	.444	1.000							
		Significance (2-tailed)	.249	.003	.000	.000	.							
		df	480	480	480	480	0							
	Risk-taking Entrepreneurial Orientation	Correlation	.520	.534	.599	.546	.612	1.000						
		Significance (2-tailed)	.000	.000	.000	.000	.000	.						
		df	480	480	480	480	480	0						
	Proactiveness Entrepreneurial Orientation	Correlation	.412	.393	.447	.450	.609	.860	1.000					
		Significance (2-tailed)	.000	.000	.000	.000	.000	.000	.					
		df	480	480	480	480	480	480	0					
	Sensing Dynamic Capabilities	Correlation	.427	.397	.343	.322	.311	.500	.389	1.000				
		Significance (2-tailed)	.000	.000	.000	.000	.000	.000	.000	.				
		df	480	480	480	480	480	480	480	0				

	Seizing Dynamic Capabilities	Correlation	.532	.414	.450	.445	.217	.467	.373	.608	1.000			
		Significance (2-tailed)	.000	.000	.000	.000	.000	.000	.000	.000	.			
		df	480	480	480	480	480	480	480	480	0			
	Reconfiguring Dynamic Capabilities	Correlation	.497	.412	.461	.208	.342	.487	.416	.588	.573	1.000		
		Significance (2-tailed)	.000	.000	.000	.000	.000	.000	.000	.000	.000	.		
		df	480	480	480	480	480	480	480	480	480	0		
	Organisations Structure	Correlation	.110	.133	.158	-.223	-.078	-.093	-.060	.079	.143	.254	1.000	
		Significance (2-tailed)	.016	.004	.001	.000	.088	.041	.188	.082	.002	.000	.	
		df	480	480	480	480	480	480	480	480	480	480	0	
	Industry Hostility	Correlation	.044	-.181	-.257	-.078	-.134	.071	.011	.086	.124	.103	-.218	1.000
		Significance (2-tailed)	.335	.000	.000	.089	.003	.117	.803	.059	.006	.024	.000	.
		df	480	480	480	480	480	480	480	480	480	480	480	0

Table 5.36: Common Method Bias Using Partial Correlation with Marker Variable Controlled

			Customer Satisfaction SME Firm Performance	Market Effectiveness SME Firm Performance	Anticipated profitability SME Firm Performance	Time-Based Competitive Advantage	Innovativeness Entrepreneurial Orientation	Risk-taking Entrepreneurial Orientation	Proactiveness Entrepreneurial Orientation	Sensing Dynamic Capabilities	Seizing Dynamic Capabilities	Reconfiguring Dynamic Capabilities	Organisation Structure
Industry Hostility	Customer Satisfaction SME Firm Performance	Correlation	1.000										
		Significance (2-tailed)	.										
		df	0										
	Market Effectiveness SME Firm Performance	Correlation	.740	1.000									
		Significance (2-tailed)	.000	.									
		df	479	0									
	Anticipated profitability SME Firm Performance	Correlation	.691	.786	1.000								
		Significance (2-tailed)	.000	.000	.								
		df	479	479	0								
	Time-Based Competitive Advantage	Correlation	.344	.321	.341	1.000							
		Significance (2-tailed)	.000	.000	.000	.							
		df	479	479	479	0							

	Innovativeness Entrepreneurial Orientation	Correlation Significance (2-tailed) df	.059 .195 479	.114 .012 479	.210 .000 479	.439 .000 479	1.000 . 0						
	Risk-taking Entrepreneurial Orientation	Correlation Significance (2-tailed) df	.519 .000 479	.558 .000 479	.640 .000 479	.554 .000 479	.629 .000 479	1.000 . 0					
	Proactiveness Entrepreneurial Orientation	Correlation Significance (2-tailed) df	.412 .000 479	.401 .000 479	.466 .000 479	.452 .000 479	.616 .000 479	.862 .000 479	1.000 . 0				
	Sensing Dynamic Capabilities	Correlation Significance (2-tailed) df	.425 .000 479	.421 .000 479	.380 .000 479	.331 .000 479	.327 .000 479	.497 .000 479	.389 .000 479	1.000 . 0			
	Seizing Dynamic Capabilities	Correlation Significance (2-tailed) df	.531 .000 479	.447 .000 479	.503 .000 479	.460 .000 479	.237 .000 479	.463 .000 479	.375 .000 479	.604 .000 479	1.000 . 0		
	Reconfiguring Dynamic Capabilities	Correlation Significance (2-tailed) df	.495 .000 479	.440 .000 479	.507 .000 479	.218 .000 479	.361 .000 479	.484 .000 479	.417 .000 479	.584 .000 479	.568 .000 479	1.000 . 0	

	Organisations Structure	Correlation	.122	.097	.108	-.247	-.111	-.080	-.059	.101	.176	.285	1.000
		Significance (2-tailed)	.007	.034	.018	.000	.015	.081	.197	.027	.000	.000	.
		df	479	479	479	479	479	479	479	479	479	479	0

5.4.2 Non-Response Bias

Due to the low response rate, it is important to ensure the representativeness of the collected data by evaluating the non-response bias. Non-response bias occurs when a failure to obtain data from some members of the sample population leads to a distortion of the survey (Malhotra & Birks 2007). Although true non-respondents cannot be assessed, using the method outlined by Armstrong and Overton (1977) allows the researcher to treat the late respondents as being similar to non-respondents. Therefore, with this method, the early and late respondents are compared; if a significant difference exists between the two groups, then the data is regarded as affected by non-response bias.

In this study, as has been noted previously, approximately 16,260 respondents were emailed to participate in the survey. A total of three email reminders were sent every week, with the entire data collection process lasting for approximately 28 days. Due to the nominally low response rate after the third reminder, the third-wave respondents were grouped together with the second-wave respondents. Therefore, a total of 298 early respondents and 184 late respondents were calculated. A t-test was performed to evaluate any potential differences between the two groups of respondents. Firm-level characteristics such as industry, age and number of employees were selected for the analysis. As can be noted from Table 5.37, no significant differences were observed between the early and late respondents based on the characteristics of the firm.

Table 5.37: Non-Response Test

		t	Sig. (2-tailed)	N	Mean	Min	Max
Firm Industry	Early	1.237	.217	298	3.52	3	4
	Late			184	3.46	3	4
Age	Early	.925	.355	298	3.20	1	4
	Late			184	3.09	1	4
Number of Employees	Early	1.296	.912	298	2.0168	1	3
	Late			184	1.9892	1	3

Therefore, it can be concluded that despite the low rate of response, non-response bias was not likely to be a concern in this study.

5.5 Descriptive Statistics

The whole sample consisted of small business as measured by the number of employees (M = 24.82, SD = 25.29). Most of the sample included small businesses that comprised 10 to 49 employees (f = 93.8%, n = 452). Medium businesses were the next majority (f = 4.6%, n = 22), followed by micro-businesses (f = 1.7%, n = 8). In terms of the industry, the selected sample was evenly divided into manufacturing (f = 49.8%, n = 240) and services (f = 50%, n = 242).

The sample primarily included private companies (f = 57.9%, n = 279), family businesses (f = 28%, n = 135), publicly listed firms (f = 11.4%, n = 55) and foreign-owned firms (f = 2.7%, n = 13). Additionally, most of the firms were solely domestic (f = 55%, n = 265) and the rest were domestic firms with international operations (f = 45%, n = 217). A considerable number of firms had been in the business for more than 50 years (f = 65.8%, n = 317), while the others were approximately 31–40 years old (f = 18.5%, n = 89), 41–50 years old (f = 13.7%, n = 66) and less than 21 years old (f = 2.1%, n = 10).

Most of the sample had an annual turnover of less than £1 million (f =34.21%, n=165). Further, approximately 32 per cent (n = 154) of the firms had an annual turnover of £1–5 million, 18.7 per cent (n = 90) reported an annual turnover of £6–10 million and 15.1 per cent (n = 73) had an annual turnover of more than £10 million.

The respondents primarily held an undergraduate qualification (f = 54.5%, n = 264), with some having acquired postgraduate education (f = 27.3%, n = 132) and others a secondary school qualification (f = 18.2%, n = 88). Approximately 78.9 per cent (n = 382) of the respondents were MDs of their respective firms, while others were CEOs (f = 13%, n = 63), GMs (f = 6.2%, n = 30) and Chairman in their respective firms (f = 19%, n = 9).

5.6 Model Evaluation

The study adopted the two-step approach that was initially theorised by Anderson and Gerbing (1988), who argued that the first step in SEM is to test the measurement model and then to test the hypothesised conceptual framework. The primary purpose of using CFA is to test the a priori theoretical factors and evaluate the extent to which they are in accordance with the actual observation (Hair et al. 2019). PLS modelling was used in this study to test the measurement model and the hypothesised framework.

5.6.1 Outer (Measurement) Model

5.6.1.1 Multicollinearity, Convergent Validity, Discriminant Validity and Reliability

Multicollinearity should be analysed to avoid misleading results (Hair et al. 2017). For multivariate analysis, one core assumption that should be met is that of multicollinearity. Although there are several statistical techniques to evaluate multicollinearity, the most common is to evaluate the correlation matrix. If the correlations in the correlation matrix are below the threshold of 0.8, then multicollinearity is not considered an issue (Hair et al. 2010). In addition to evaluating the correlation matrix, the variance inflation factor (VIF) and the tolerance value are used to assess multicollinearity. Hair et al. (2010) have suggested that a VIF of above 10 and a tolerance value of below 0.1 indicate problems of collinearity. Conversely, Hair et al. (2017) have noted that for formative measures, a tolerance of above 0.2 and a VIF of below five is the preferred indicator of low levels of multicollinearity.

One indicator that is used in CFA to establish convergence is called the average variance extracted (Fornell & Larcker 1981; Hair et al. 2010). Hair et al. (2010) have noted that the values of average variance extracted (AVE) are acceptable if they are greater than the minimum threshold of 0.5. Discriminant validity measures the degree to which the dimensions of an independent construct are actually unrelated to the dimensions of another independent construct (Bagozzi & Phillips 1982). One common method of measuring AVE, as found in the literature, involves a pairing of the constructs and a comparison of the AVE to the square value of the correlations between two or more constructs (Fornell & Larcker 1982). With this method, AVE is said to be acceptable with good discriminant validity when its value is greater than the correlation (Fornell & Larcker 1981).

Hair et al. (2017) have noted that AVE can only be used for reflective factors. In addition to the AVE, the authors have suggested that researchers should also evaluate the path loadings of the outer model to ensure that all of a single construct's items are strongly correlated with its latent construct. The authors have noted that path loadings that are greater than or equal to 0.7 are considered acceptable. The achievement of higher path loadings indicates indicator reliability (Hair et al. 2017). The authors also noted that researchers obtain weaker loadings when the relatively new scales have been used. In reflective constructs, the decisions to retain the path despite a potentially weak loading are based on the researcher's discretion, the composite reliability, the AVE and the extent to which the content validity is affected by the removal of the item.

Further, Hair et al. (2017) have recommended an analysis of the cross-loadings to further establish discriminant validity in the model. Examining the cross-loadings, for cases when discriminant validity is established, should reveal that item's correlations to be higher with its corresponding constructs than its correlations with other constructs to which it is not related (Hair et al. 2017). If this condition is not met, then a discriminant validity problem is said to be present.

In addition to examining the cross-loadings, the Fornell-Larcker criterion is the second most common measure of discriminant validity. Fornell-Larcker is founded on the concept that 'a construct shares more variance with its associated indicators than with any other construct' (Hair et al., 2017, p. 116). However, Hair et al. (2017) have noted that discriminant validity evaluations that use cross-loadings and the Fornell-Larcker criterion are not effective due to several limitations. For example, the Fornell-Larcker criterion does not function as intended when the indicator loadings display only a small variance between them (Hair et al. 2017). In regard to the cross-loadings, they do not perform well when two constructs have strong correlations between them.

In an attempt to address the gap of discriminant validity, Henseler et al. (2015) have suggested that the heterotrait-monotrait ratio (HTMT) could be used (Hair et al. 2017). HTMT measures what is known as the disattenuated correlation—the measure of a true correlation between two constructs—with the assumption that the two constructs are perfectly reliable. The threshold for HTMT is a maximum value of 0.9 (0.85 is a more conservative value that is sometimes used); exceeding this value indicates poor discriminant validity (Hair et al. 2017; Henseler 2015). In PLS-SEM that has been applied with the aid of SmartPLS, HTMT measures can be obtained by the bootstrapping procedure (Hair et al. 2017). For good discriminant validity, the HTMT confidence interval should exclude the value one. Although Hair et al. (2017) have noted that using HTMT as a measure of discriminant validity will suffice independently, this study has reported the results of both the cross-loadings and Fornell-Larcker criterion.

During indicator reliability assessment, one item was eliminated (ED3) due to its indicator loading of –0.299. No other loadings were eliminated, as they were above 0.6 (Chin 1998). Further, the AVE and composite reliability scores were calculated (see Table 5.38).

Table 5.38: Parameter Estimates of Measurement Model

Constructs	Code	Measure	Loadings	AVE	Composite Reliability
Entrepreneurial Orientation	EO_I3	Reflective	0.778	0.606	0.902
	EO_P1		0.696		
	EO_P2		0.774		
	EO_P3		0.820		
	EO_RT2		0.742		

Constructs	Code	Measure	Loadings	AVE	Composite Reliability
	EO_RT3		0.853		
SME Firm Performance	FP_AP1	Reflective	0.79	0.59	0.909
	FP_AP2		0.784		
	FP_AP3		0.705		
	FP_AP4		0.839		
	FP_ME1		0.704		
	FP_ME2		0.85		
	FP_ME4		0.687		
Organisation Structure (Organicity)	OS2	Reflective	0.776	0.561	0.835

Constructs	Code	Measure	Loadings	AVE	Composite Reliability
	OS3		0.812		
	OS4		0.641		
	OS5		0.756		
Time-Based Competitive Advantage	TCA1	Reflective	0.834	0.565	0.837
	TCA2		0.811		
	TCA3		0.765		
	TCA4		0.584		

Constructs	Code	Measure	Loadings	AVE	Composite Reliability
Controls					
Technological Turbulence	TT1	Reflective	0.912	0.57	0.837
	TT3		0.813		
	TT4		0.689		
	TT5		0.556		
Environmental Dynamism	ED4	Reflective	0.759	0.651	0.788
	ED5		0.851		
Second-Order Construct	**First-order Construct**	**Measure**	**Weight**	**t-value**	**VIF**
Dynamic Capabilities	Sensing	Formative	0.362	13.642	1.458
	Seizing		0.38	21.99	1.959
	Reconfiguring		0.426	38.632	1.639

The AVE values exceeded the threshold of 0.5 for the reflective measures (Hair et al. 2015), thereby indicating convergent validity for all constructs. The composite reliability values also exceeded the minimum requirement of 0.7, with Cronbach's alpha values also exceeding the minimum of 0.6 (see Section 5.3), thereby indicating internal consistency and reliability (Hair et al. 2015). For the formative measures, collinearity assessment generated values that were lower than the established threshold of five for the three LOCs—with all indicator weights being high and significant, as evidenced by the bootstrapping results. It can be noted that although the composite reliability score is low for environmental dynamism, a score between 0.6 and 0.7 is considered acceptable (Henseler & Sarstedt 2013). Further, due to a good AVE score and Cronbach's alpha, the construct was retained for further analysis. Table 5.39 reveals how multicollinearity was not an issue in the current study.

Table 5.39: Multicollinearity of Reflective Measures

TCA1	1.942	FP_ME1	1.691
TCA2	1.929	FP_ME2	2.754
TCA3	1.555	FP_ME4	1.796
TCA4	1.203	OS2	1.494
EO_I3	1.84	OS3	1.507
EO_P1	1.665	OS4	1.389
EO_P2	2.172	OS5	1.43
EO_P3	2.356	TT1	1.822
EO_RT2	2.103	TT3	2.168
EO_RT3	2.422	TT4	1.655
FP_AP1	2.81	TT5	1.405
FP_AP2	1.926	ED4	1.103
FP_AP3	2.428	ED5	1.103
FP_AP4	2.742		

Further, Table 5.40 outlines the cross-loadings for the model that has been specified. Although several items have weak to strong loadings with latent constructs other than their own, the highest item loadings are with their respective constructs. Therefore, all the outer loadings of the items with their associated latent constructs are greater than any of the loadings on other latent constructs.

Table 5.40: Cross-Loadings

	Entrepreneurial Orientation	Environmental Dynamism	Organisation Structure (Organicity)	SME Firm Performance	Technological Turbulence	Time-Based Competitive Advantage
CA_TM1	0.191	-0.07	-0.064	0.244	-0.157	0.85
CA_TM2	0.314	-0.235	-0.12	0.251	0.017	0.783
CA_TM3	0.372	-0.4	-0.175	0.358	-0.296	0.716
CA_TM4	0.243	0.065	0.07	0.303	0.03	0.642
ED4	0.066	0.759	0.203	0.035	0.17	-0.024
ED5	0.082	0.852	0.409	0.138	0.04	-0.264
EO_I3	0.779	0.326	0.261	0.282	-0.13	0.163
EO_P1	0.695	-0.252	0.029	0.326	0.052	0.435
EO_P2	0.774	-0.102	-0.063	0.391	-0.116	0.364
EO_P3	0.821	0.223	0.014	0.416	-0.157	0.248
EO_RT2	0.742	0.1	-0.031	0.607	-0.22	0.333
EO_RT3	0.853	-0.003	0.022	0.499	-0.227	0.273
FP_AP1	0.465	-0.073	0.025	0.788	-0.011	0.289
FP_AP2	0.37	0.118	0.197	0.784	-0.23	0.33
FP_AP3	0.453	-0.018	0.105	0.703	0.044	0.207
FP_AP4	0.463	0.126	0.205	0.841	-0.17	0.284
FP_ME1	0.35	0.183	0.051	0.705	-0.191	0.398
FP_ME2	0.43	0.123	0.039	0.851	-0.192	0.412
FP_ME4	0.319	0.125	-0.047	0.688	-0.052	0.081
OS2	0.013	0.275	0.776	0.101	0.077	-0.171
OS3	0.016	0.172	0.812	0.114	0.176	0.066
OS4	0.043	0.214	0.641	0.022	0.075	-0.094
OS5	0.124	0.505	0.756	0.103	-0.007	-0.1

TT1	-0.227	0.115	0.158	-0.193	0.912	-0.147
TT3	-0.126	0.112	0.132	-0.062	0.814	-0.105
TT4	-0.019	0.124	-0.05	-0.093	0.689	-0.051
TT5	-0.034	-0.301	-0.057	-0.015	0.558	0.013

Further, the Fornell-Larcker criterion, as shown in Table 5.41, demonstrated that the AVE values for the constructs were higher than the correlations between the constructs, indicating discriminant validity.

Table 5.41: Fornell-Larcker Criterion

	Entrepreneurial Orientation	Environmental Dynamism	Organisation Structure (Organicity)	SME Firm Performance	Technological Turbulence	Time-Based Competitive Advantage
Entrepreneurial Orientation	**0.779**					
Environmental Dynamism	0.092	**0.807**				
Organisation Structure (Organicity)	0.065	0.391	**0.749**			
SME Firm Performance	0.531	0.114	0.124	**0.768**		
Technological Turbulence	-0.18	0.12	0.111	-0.167	**0.755**	
Time-Based Competitive Advantage	0.367	-0.193	-0.086	0.386	-0.132	**0.752**

In light of the recent criticisms of the Fornell-Larcker criterion (Hair et al. 2017), a further analysis of discriminant validity is presented by HTMT (see Table 5.42). The results indicate the establishment of good discriminant validity for the reflective-type measures, as all values are below the maximum threshold of 0.9 (Henseler et al. 2015).

Table 5.42: HTMT

	Entrepreneurial Orientation	Environmental Dynamism	Organisation Structure (Organicity)	SME Firm Performance	Technological Turbulence	Time-Based Competitive Advantage
Entrepreneurial Orientation						
Environmental Dynamism	0.362					
Organisation Structure (Organicity)	0.158	0.633				
SME Firm Performance	0.614	0.283	0.179			
Technological Turbulence	0.245	0.348	0.208	0.209		
Time-Based Competitive Advantage	0.493	0.489	0.216	0.466	0.25	

5.6.2 Inner (Structural) Model

5.6.2.1 R-Square and Q-Square

An examination of the predictive power of the endogenous constructs revealed that the primary dependent variable, SME firm performance, had an R^2 value of 0.281. However, the prediction of dynamic capabilities by entrepreneurial orientation and organisation structure (organicity) was higher in comparison, with an R^2 value of 0.367. Time-based competitive advantage had a lower value of R^2 (0.248), as predicted by dynamic capabilities, organisation structure (organicity) and entrepreneurial orientation. However, these values are satisfactory, considering the potential antecedents that this model does not consider. Falk and Miller (1992) also suggest that the variance explained (R^2) for endogenous variables should be greater than 0.10.

Additionally, blindfolding (Hair et al. 2017) was used to evaluate the model's predictive relevance for each of the endogenous constructs (dynamic capabilities, SME firm performance and time-based competitive advantage). Hair et al. (2017) have suggested that Q-square values above zero indicate that the model's predictive power is relevant. In this study, dynamic capabilities had a Q^2 value of 0.403, SME firm performance had a Q^2 value of 0.295 and time-based competitive advantage had a Q^2 value of 0.183—which are all well above zero. Therefore, this model has predictive relevance for all the endogenous constructs.

5.6.2.2 Structural Paths

Since this study's measurement model comprised a second-order factor (along with first-order factors), a two-step process to remodel the measurement model as suggested by Hair et al. (2017) was conducted. As has been previously discussed, dynamic capabilities are a formative–reflective type. The other latent constructs in the model are all first-order reflective constructs.

To perform hypothesis testing, Hair et al. (2017) have suggested remodelling the second-order framework using latent variable scores that are generated as part of the standard PLS-SEM analysis. Following this, the second-order constructs are transformed into first-order constructs that can then facilitate hypothesis testing and an accurate depiction of the hypothesised relationships.

Table 5.43 summarise the hypotheses that were tested in this study. It is important to note that the process of hypothesis testing is divided into three steps: direct relationships and mediation analysis, moderation testing and testing of hypotheses in the presence of control variables.

Table 5.43: Summary of Hypotheses and Structural Paths

Hypothesis Number	Hypothesis	Structural Paths
H1	Time-based competitive advantage mediates the positive relationship between dynamic capabilities and SME firm performance.	**Dynamic capabilities → time-based competitive advantage → SME firm performance**
H2	Dynamic capabilities mediate the positive relationship between an organisation structure (organicity) and time-based competitive advantage.	**Organisation structure → dynamic capabilities → time-based competitive advantage**
H3	An organisation structure (organicity) moderates the positive relationship between dynamic capabilities and time-based competitive advantage.	**Moderating effect 1 → time-based competitive advantage**
H4	Dynamic capabilities mediate the positive relationship between entrepreneurial orientation and time-based competitive advantage.	**Entrepreneurial orientation → dynamic capabilities → time-based competitive advantage**
H5	Entrepreneurial orientation moderates the positive relationship between dynamic capabilities and time-based competitive advantage.	**Moderating effect 2 → time-based competitive advantage**

5.6.2.3 Tests of Mediation Effects

The first hypothesis (H1) examines whether time-based competitive advantage mediates the positive relationship between dynamic capabilities and SME firm performance, such that when a firm possesses dynamic capabilities, it develops greater time-based competitive advantage—which then leads to superior SME firm performance. An evaluation of the parameter estimates displayed in Table 5.44 depicts that dynamic capabilities significantly influence SME firm performance ($\beta = 0.407$, $t = 10.800$) and time-based competitive advantage ($\beta = 0.408$, $t = 9.492$). The direction of these effects is positive, which was expected due to the a priori

theory. Further, the indirect effects of dynamic capabilities on SME firm performance through time-based competitive advantage is also significant (β = 0.091, t = 5.426), which indicates partial mediation. These results imply that time-based competitive advantage mediates the positive relationship between dynamic capabilities and SME firm performance, thus supporting H1.

The second hypothesis (H2) examines whether dynamic capabilities mediate the positive relationship between organisation structure (organicity) and time-based competitive advantage, such that at higher levels of organicity, the firm can develop processes that enhance time-based competitive advantage. The results in Table 5.44 indicate that the direct effects of organisation structure (organicity) on dynamic capabilities (β = 0.248, t = 6.165) and time-based competitive advantage (β = –0.212, t = 4.467) are significant. However, the direct relationship between organisation structure (organicity) and time-based competitive advantage is negative. These results suggest that an organic structure reduces time-based competitive advantage and increases dynamic capabilities. The negative, direct relationship between organicity and time-based competitive advantage was not expected, in light of the a priori theory. The results further indicate that the indirect effect of organisation structure (organicity) on time-based competitive advantage through dynamic capabilities is significant (β = 0.101, t = 5.408), such that partial mediation exists. Therefore, the results support H2. This can be taken as support for H2 considering the concept of competitive mediation where the effects of the direct and indirect effects run opposite to one another. This also represents a significant mediation model because based on the insights provided by Zhao et al. (2010), “both point to a theoretically interesting indirect effect” (p. 199).

The fourth hypothesis (H4) examines whether dynamic capabilities mediate the positive relationship between entrepreneurial orientation and time-based competitive, such that entrepreneurial orientation influences dynamic capabilities that, in turn, influence time-based competitive advantage. Parameter estimates demonstrate that the influence of entrepreneurial orientation on time-based competitive advantage (β = 0.155, t = 4.094) and dynamic capabilities (β = 0.539, t = 15.970) is positive and significant. Additionally, the direction of these relationships is in accordance with the expected direction of a priori theory. Finally, the indirect effect of entrepreneurial orientation on time-based competitive advantage through dynamic capabilities was also revealed to be significant (β = 0.220, t = 8.137), thereby indicating a partial mediating effect of dynamic capabilities on the positive relationship between entrepreneurial orientation and time-based competitive advantage. H4 is thus supported.

It can be noted here that the effect sizes of the mediation analysis are small and in some cases, smaller than the effect size of direct relationships between the latent constructs. In a conventional setting, this could appear to be problematic and lead to the questioning of the theoretical implications of the findings. However, critical analysis by Zhao et al. (2010) reveals a key insight that is most commonly missed by researchers: there is no precondition of a direct effect's presence and size for the validity of the mediation effect. In other words, Zhao et al. (2010) noted that "we argue that there need not be a significant r_{XY} in a proper mediation analysis. For similar reasons, it is a mistake to advise students to "first just establish an effect (to be mediated)" before starting to think about and test mediation" (p. 205).

5.6.2.4 Moderation Effects

It was hypothesised that organisation structure (organicity) moderates the positive relationship between dynamic capabilities and time-based competitive advantage (H3), such that the positive relationship between dynamic capabilities and time-based competitive advantage is stronger at higher levels of organicity. The results in Table 5.44 reveal that the interaction effect between organisation structure (organicity) and dynamic capabilities had a significant positive effect on time-based competitive advantage (β = 0.313, t = 10.597). This indicates that the effects of dynamic capabilities on time-based competitive advantage are stronger at high levels of organicity (see Figure 5.5), thus supporting H3.

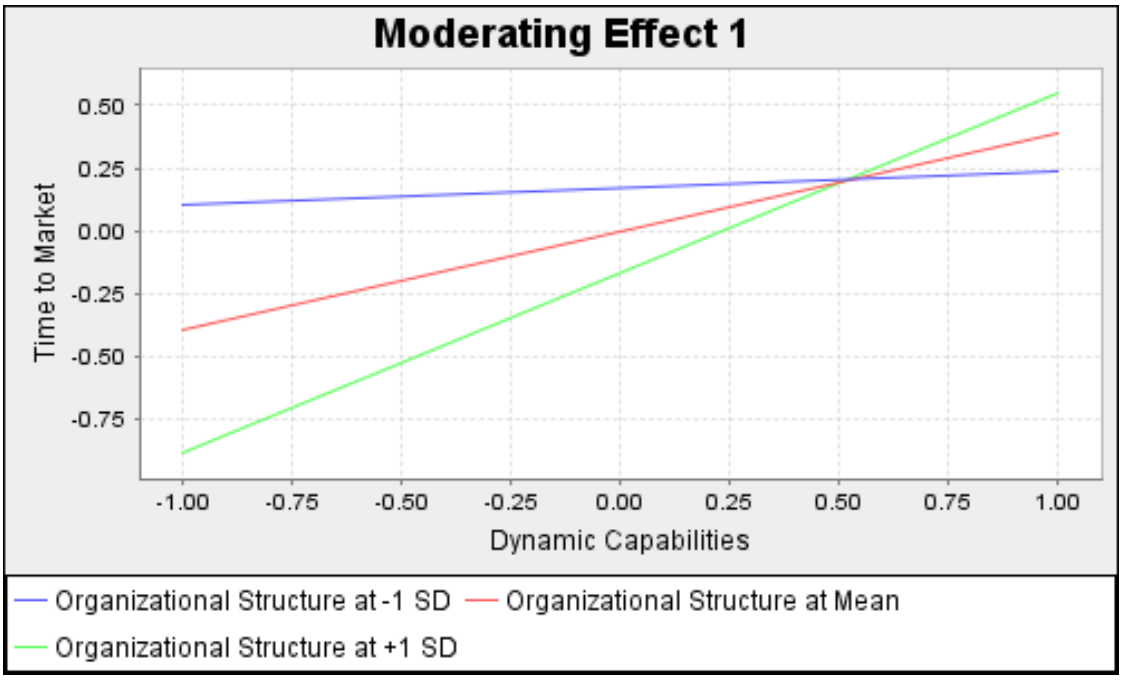

Figure 5.5: Moderating Effects of Organisation Structure

As can be observed in Figure 5.5, the relationship between dynamic capabilities and time-based competitive advantage is positive, suggesting that higher levels of dynamic capabilities are directly linked to higher levels of time-based competitive advantage. The upper line, which represents a low level of the moderator construct of organisation structure (mean value of organicity minus one standard deviation), has a flatter slope while the lower line, which represents a high level of organicity (mean value of organicity plus one standard deviation), has a steeper slope. This indicates that higher organicity levels entail a stronger relationship between dynamic capabilities and time-based competitive advantage, while lower levels of organicity lead to a weaker relationship between dynamic capabilities and time-based competitive advantage.

Additionally, the moderating effect of entrepreneurial orientation was tested on the positive relationship between dynamic capabilities and time-based competitive advantage. The results indicated that the interaction effect was significant, but negative ($\beta = -0.106$, $t = 4.315$). In brief, the positive effects of dynamic capabilities on time-based competitive advantage are weaker at higher levels of entrepreneurial orientation (see Figure 5.6). This suggests that the positive relationship between dynamic capabilities and time-based competitive advantage is weaker at higher levels of entrepreneurial orientation and stronger at lower levels of entrepreneurial orientation. Put simply, the transfer of dynamic capabilities to time-based competitive advantage is stronger when entrepreneurial orientation behaviour levels are lower. In conclusion, H5 is not supported.

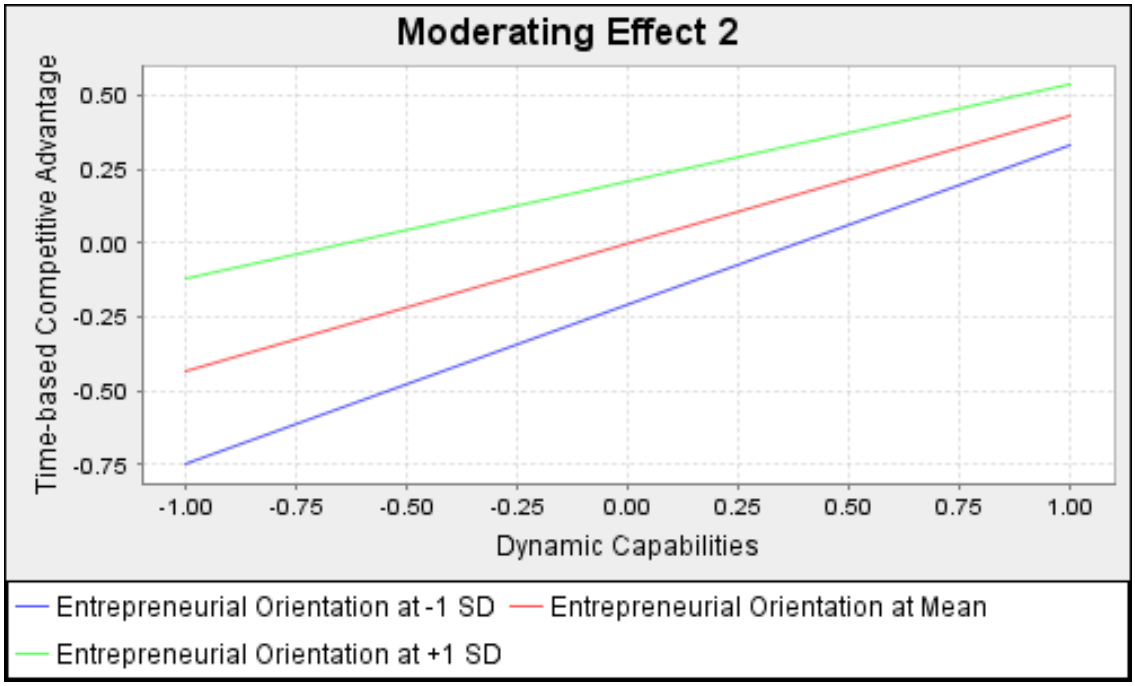

Figure 5.6: Moderating Effects of Entrepreneurial Orientation

In Figure 5.6, the middle line represents the relationship for an average level of the moderator variable of entrepreneurial orientation. The other two lines represent the relationship between dynamic capabilities and time-based competitive advantage for higher (mean value of entrepreneurial orientation plus one standard deviation) and lower (mean value of entrepreneurial orientation minus one standard deviation) levels of entrepreneurial orientation. The upper line, which represents a high level of the moderator of entrepreneurial orientation, has a flatter slope, while the lower line, which represents a low level of entrepreneurial orientation, has a steeper slope. As such, the relationship between dynamic capabilities and time-based competitive advantage is weaker at higher levels of entrepreneurial orientation, while lower levels of entrepreneurial orientation lead to a stronger relationship between dynamic capabilities and time-based competitive advantage. Entrepreneurial orientation thus does not strengthen the dynamic capabilities and time-based competitive advantage relationship; it weakens it.

The control variables did not affect the hypothesised relationships, but they displayed significant influences on some model constructs. Specifically, sales turnover significantly affected dynamic capabilities ($\beta = 0.224$, $t = 6.24$), and the firm's age ($\beta = 0.111$, $t = 2.555$), industry ($\beta = 0.278$, $t = 7.945$) and technological turbulence ($\beta = –0.192$, $t = 4.936$) affected SME firm performance. The number of employees ($\beta = –0.192$, $t = 4.936$) had no effect on SME firm performance and environmental dynamism ($\beta = –0.192$, $t = 4.936$) did not influence dynamic capabilities. The

direction and strength of the hypothesised relationships remained the same both with and without the control variables.

Table 5.44: Test of Research Model and Hypotheses

Hypothesised Relationships	**Standardised Coefficients**	**t-Value**	**Test Result**
H1: Time-based competitive advantage mediates the positive relationship between dynamic capabilities and SME firm performance			Supported
Dynamic capabilities → SME firm performance	0.407	10.335	
Dynamic capabilities → time-based competitive advantage	0.436	9.956	
Time-based competitive advantage → SME firm performance	0.210	5.759	
Dynamic capabilities → time-based competitive advantage → SME firm performance	0.091	5.426	
H2: Dynamic capabilities mediate the positive relationship between an organisation structure (organicity) and time-based competitive advantage			Supported
Dynamic capabilities → time-based competitive advantage	0.436	9.956	
Organisations structure → dynamic capabilities	0.248	6.069	
Organisation structure → time-based competitive advantage	-0.161	3.458	
Organisation structure → dynamic capabilities → time-based competitive advantage	0.101	5.408	

H4: Dynamic capabilities mediate the positive relationship between entrepreneurial orientation and time-based competitive advantage			Supported
Dynamic capabilities → time-based competitive advantage	0.436	9.956	
Entrepreneurial orientation → dynamic capabilities	0.539	14.543	
Entrepreneurial orientation → time-based competitive advantage	0.207	5.91	
Entrepreneurial orientation → dynamic capabilities → time-based competitive advantage	0.219	7.049	
H3: An organisation structure (organicity) moderates the positive relationship between dynamic capabilities and time-based competitive advantage			Supported
Organisation structure → time-based competitive advantage	-0.161	3.458	
Moderating effect 1 → time-based competitive advantage	0.313	10.597	
H5: Entrepreneurial orientation moderates the positive relationship between dynamic capabilities and time-based competitive advantage			Not Supported
Entrepreneurial orientation → time-based competitive advantage	0.207	5.91	
Moderating effect 2 → time-based competitive advantage	-0.106	4.315	

In the presence of the firm's size (employee number and sales turnover), age, industry (manufacturing and services), technological turbulence and environmental dynamism

Controls	**Standardised Coefficients**	**t-Value**	**Test Result**
Annual turnover → dynamic capabilities	0.224	6.244	Significant
Firm age → SME firm performance	0.111	2.555	Significant
Firm industry → SME firm performance	0.278	7.945	Significant
Number of employees → SME firm performance	0.053	1.168	Not Significant
Technological turbulence → SME firm performance	-0.192	4.936	Significant
Environmental dynamism → dynamic capabilities	0.019	0.504	Not Significant
Hypothesised Relationships	**Standardised Coefficients**	**t-Value**	**Test Result**
H1: Time-based competitive advantage mediates the relationship between dynamic capabilities and SME firm performance			Supported
Dynamic capabilities → SME firm performance	0.406	10.928	
Dynamic capabilities → time-based competitive advantage	0.436	10.203	
Time-based competitive advantage → SME firm performance	0.205	7.166	

Dynamic capabilities → time-based competitive advantage → SME firm performance	0.076	5.805	
H2: Dynamic capabilities mediate the positive relationship between an organisation structure (organicity) and time-based competitive advantage			Supported
Dynamic capabilities → time-based competitive advantage	0.436	10.203	
Organisation structure → dynamic capabilities	0.264	6.910	
Organisation structure → time-based competitive advantage	-0.161	3.396	
Organisation structure → dynamic capabilities → time-based competitive advantage	-0.030	2.952	
H4: Dynamic capabilities mediate the positive relationship between entrepreneurial orientation and time-based competitive advantage			Supported
Dynamic capabilities → time-based competitive advantage	0.436	10.203	
Entrepreneurial orientation → dynamic capabilities	0.531	14.307	
Entrepreneurial orientation → time-based competitive advantage	0.207	6.047	
Entrepreneurial orientation → dynamic capabilities → time-based competitive advantage	0.038	3.775	

H3: An organisation structure (organicity) moderates the positive relationship between dynamic capabilities and time-based competitive advantage			Supported
Organisation structure → time-based competitive advantage	-0.161	3.621	
Moderating effect 1 → time-based competitive advantage	0.313	10.281	
H5: Entrepreneurial orientation moderates the positive relationship between dynamic capabilities and time-based competitive advantage			Not Supported
Entrepreneurial orientation → time-based competitive advantage	0.207	6.047	
Moderating effect 2 → time-based competitive advantage	-0.106	4.377	

5.7 Chapter Conclusion

The objective of this data analysis was to determine the effects of organisation structure (organicity), dynamic capabilities and entrepreneurial orientation on time-based competitive advantage and SME firm performance. The preliminary analysis revealed that the data was free from missing values and outliers, that it was normally distributed and that it did not suffer from common method bias and non-response bias. With the use of PLS, the reduced factor model was specified and evaluated. The measurement model depicted no issues of multicollinearity and displayed strong convergent validity and reliability, having been tested using AVE, composite reliability and Cronbach's alpha for the reflective measures. For the formative measure in the study (dynamic capabilities), factor weights were evaluated along with a measure for multicollinearity and t-statistics to ensure validity and reliability. Using two-step hierarchical modelling, the structural model was developed, demonstrating good predictive relevance and moderate predictive power for the study's endogenous constructs. The structural paths were established and the hypothesis testing was performed.

Four of the hypothesised relationships were supported by the study's results in the presence and absence of controls (H1, H2, H3 and H4). However, H5 was not supported in either the presence or absence of controls. That is, the results indicated that time-based competitive advantage (partially) mediates the positive relationship between dynamic capabilities and SME firm performance (H1) in the presence or absence of controls; dynamic capabilities (partially) mediate the positive relationship between an organisation structure (organicity) and time-based competitive advantage (H2) in the presence or absence of controls; and dynamic capabilities (partially) mediate the positive relationship between entrepreneurial orientation and time-based competitive advantage (H4) in the presence or absence of controls. The moderating effect of an organisation structure (organicity) was also found to be significant (H3), such that at higher levels of organicity, the link between dynamic capabilities and time-based competitive advantage was stronger in the presence or absence of controls. Surprisingly, entrepreneurial orientation did not moderate the positive relationship between dynamic capabilities and time-based competitive advantage (H5) in the presence or absence of controls. However, an interesting finding was that the moderation effect of entrepreneurial orientation was significant, but in the opposite direction to what was hypothesised—that is, higher entrepreneurial orientation reduced the strength of the relationship between dynamic capabilities and time-based competitive advantage.

The following and final chapter provides a detailed discussion of the results that were obtained in accordance with prior research. It will also provide a theoretically grounded reasoning for the directional effects of the paths that have been explored above.

Chapter 6: Discussion

6.1 Introduction

The aim of this study was to critically investigate the mechanisms by which the dynamic capabilities of SMEs can be developed to improve SME firm performance. Specifically, the research sought to first examine how the dynamic capabilities of SMEs could be developed through the use of entrepreneurial orientation and organisation structure (organicity); it then sought to examine how dynamic capabilities affect SME firm performance through time-based competitive advantage. To achieve these objectives, the mediating influence of time-based competitive advantage on the relationship between dynamic capabilities and SME firm performance was evaluated. The study also investigated the mediating effect of dynamic capabilities on the relationship between organisation structure (organicity) and time-based competitive advantage. After these relationships were investigated, the study further examined the moderating influences of organisation structure (organicity) and entrepreneurial orientation on the relationship between dynamic capabilities and time-based competitive advantage.

In Chapter 5, the researcher presented a survey-based analysis of empirical data that had been collected from 482 CEOs and MDs of SMEs from the UK's manufacturing and service industries. Subsequent preliminary analyses allowed the researcher to reduce various dimensions and respecify the measurement model. Using SmartPLS, CFA was performed, and hypotheses were tested. This chapter will more specifically provide explanations, insights and reflections regarding the results of the statistical testing of the hypotheses.

6.2 The Mediating Role of Time-based Competitive Advantage in the Dynamic Capabilities and SME Firm Performance Relationship

It was hypothesised that time-based competitive advantage mediates the positive relationship between dynamic capabilities and SME firm performance (H1). In testing this hypothesis, the direct relationship between dynamic capabilities and SME firm performance was also explored, which is subsequently discussed in the ensuing sections.

6.2.1 The Direct Relationship between Dynamic Capabilities and SME Firm Performance

The direct, positive influence of dynamic capabilities on SME firm performance in this study ($\beta = 0.407$, $t = 10.335$) adds to the large body of research that explores the relationship between these two constructs. The positive influence of dynamic capabilities on SME firm performance

has already been established in prior research (Adner & Helfat 2003; Ambrosini & Bowman 2009; Cavusgil et al. 2007; Eisenhardt & Martin 2000; Fainshmidt, Nair & Mallon 2017; Lin & Wu 2012; Makkonen et al. 2014; Narasimhan et al. 2006; Teece & Pisano 1994; Teece et al. 1997; Yalcinkaya et al. 2007; Zahra et al. 2006).

However, many of these studies have been conducted in the context of large firms, with only a limited focus on the SME context (Ates et al. 2013; Inan & Bititci 2015). Therefore, this study makes a useful contribution that focuses on the context of SMEs, as SMEs have been largely ignored in dynamic capabilities research due to the assumption that SMEs are inherently disadvantaged in terms of developing dynamic capabilities due to their small size and limited resources (Tallon 2008). The results of the present study bridge this gap and outline that even in the context of SMEs, dynamic capabilities do promote superior SME firm performance.

As discussed above, the direct relationship between dynamic capabilities and SME firm performance has been well established in past research. However, this relationship is only true in the case in which the firms possess the relevant resources that enable them to act accordingly (Makadok 2001). Although some studies suggest that dynamic capabilities do not guarantee the generation of a successful outcome (Zahra et al. 2006) and that they influence SME firm performance through the modification and creation of resource bundles (Eisenhardt & Martin 2006; Zott 2003), other studies suggest that dynamic capabilities can negatively influence SME firm performance when they are misused and that the opportunity cost for cultivating dynamic capabilities plays a major role in this relationship (Winter 2003; Zahra et al. 2003). Research by Stadler, Helfat and Veron (2013) has found a statistically significant direct and indirect effect of dynamic capabilities on the success rate of resource acquisition and development for firms. Therefore, firms that have a higher level of dynamic capabilities are more likely to outperform those firms with a lower level of dynamic capabilities; this suggests that although there is a direct relationship between dynamic capabilities and SME firm performance, the relationship between the two is more complex (Wang & Ahmed 2007).

Additionally, Eisenhardt and Martin (2000) stated that dynamic capabilities can be used as tools for modifying and adjusting the current resource framework, as well as for generating new resources that enable the firms to enhance their performance. Further, dynamic capabilities allow the firm to enhance its performance by enabling it to develop a better sense of opportunity identification and response (Fang & Zou 2009; Makadok 2001, 2010), which consequently increases the firm's revenue. The direct influence of dynamic capabilities on SME firm performance can also be due to the firms that possess higher dynamic capabilities, who can

respond to changes in the external or internal environment with greater speed and efficiency (Hitt et al. 2001; Tallon 2008). Therefore, a speedier response to market changes and increased effectiveness in terms of managing such changes can positively affect the SME's firm performance by providing the advantage of reduced costs and greater revenue-making opportunities. Dynamic capabilities can also enhance the SME's firm performance by allowing the firm to access decision options that were previously unavailable, thereby leading to increased profits or returns (Zhu 2004). This also indicates the presence of an indirect mechanism.

6.2.2 The Mediating Role of Time-based Competitive Advantage

The present study identified a significant partial mediating influence of time-based competitive advantage on the positive relationship between dynamic capabilities and SME firm performance ($\beta = 0.091$, $t = 5.426$). This finding entails the understanding of how dynamic capabilities affect SME firm performance through time-based competitive advantage (H1). The results support a renewed interest in the research—one that evaluates the temporal implications of SME firm performance that are embedded in dynamic capabilities theory.

Time-based competitive advantage remains a dimension that has not received much scholarly attention in comparison to other dimensions, such as cost leadership and differentiation (Campbell-Hunt 2000). Understanding the mediating effects of time-based competitive advantage on the relationship between dynamic capabilities and SME firm performance is crucial for several reasons. First, firms may sense and seize new opportunities and accordingly reconfigure their resources to respond to market changes, but the reaction required may be halted or delayed due to decision-making delays (Luoma et al. 2016), which could result in a decreased time-based competitive advantage. Further, firms may be in the process of developing a new product and launching it to gain first-mover advantage, but internal coordination requirements could become a barrier to timely market entry (MacMillan et al. 1985). When firms face such barriers to timely and speedy action, dynamic capabilities may prove advantageous for the firms that possess them—they may equip firms with the ability to overcome these challenges (Hawk et al. 2013) and prevent any lags in market reaction or innovation. Additionally, the benefits of dynamic capabilities for time-based competitive advantage can be operationalised by dynamic capabilities reducing the uncertainties that are associated with new market entry (Eisenhardt 1989) and providing firms with a greater capacity for internal coordination, thereby reducing product development downtime (Becker 2004). When this occurs, firms adopt a shorter product life cycle and launch their products into the

market at an enhanced rate (Chen, Damanpour & Reilly 2010), which leads to superior firm performance (Cater & Pucko 2005). Firms also undergo time compression, which enables them to enhance their speed of production (Jenssen 2003; Vonderembse & Koufteros 2003); this in turn leads to an increase in profit generation capability and market survival (Schoonhoven et al. 1990). Further, using a time-based competitive model to ensure that the product is placed aggressively in the market ensures customer satisfaction and market dominance, which are both indicators of superior firm performance (Brown & Eisenhardt 1995; Ireland et al. 2003).

A key point that must be highlighted in the current analysis is that although the partial mediating effect of the time-based competitive advantage on the positive relationship between dynamic capabilities and SME firm performance was significant, the effect of the direct relationship between dynamic capabilities and SME firm performance was three times greater. That is, dynamic capabilities seem to directly affect SME firm performance rather than influence them through time-based competitive advantage. This suggests the need for further research that investigates the size of the indirect influence of time-based competitive advantage on the relationship between dynamic capabilities and SME firm performance; this research is required for fully evaluating just how different the mediation relationship and direct relationship are.

6.3 The Mediating Role of Dynamic Capabilities in the Organisation Structure and Time-based Competitive Advantage Relationship

The present study hypothesised that dynamic capabilities play a mediating role in the positive relationship between organisation structure (organicity) and time-based competitive advantage (H2). The direct influence of organisation structure (organicity) on time-based competitive advantage is also evaluated and discussed in these sections.

6.3.1 The Direct Relationship between Organisation Structure and Time-Based Competitive Advantage

The present study found that organisation structure (organicity) significantly, though negatively, influenced time-based competitive advantage ($\beta = –0.161$, $t = 3.458$). That is, highly organic structures in the present study were found to negatively influence time-based competitive advantage, whereas highly mechanistic structures were conversely found to positively influence time-based competitive advantage.

The results of this study contrast those found in prior research by Suarez and Lanzolla (2007), which outlined how important possessing organic structures was for organisations. A primary prerequisite for achieving time-based competitive advantage is outlined as the firm's ability to

develop and implement a strategy in response to the environment in which that firm operates (Suarez & Lanzolla 2017). However, the authors made no distinctions between SMEs and MNEs. In accordance with Pertusa-Ortega et al.'s (2008) insights, the development and implementation of such a competitive strategy depend on an organisation's level of organicity. Therefore, past research has noted that an organic structure allows firms to change quickly in response to their environment, gain greater competitive advantage and develop their adaptability to survive and enhance their performance in the business environment (Covin & Slevin 1988; Wilden et al. 2013). However, prior research has stated that the opposite is true for organisations that have highly mechanistic structures (Ndubisi 2013; Ylinen & Gullkvist 2014). In brief, mechanistic structures are always associated with high levels of rigidity and a lower rate of responsiveness, which reduces the firm's ability to adapt and launch competitive strategies that are based on the market's conditions (Ylinen & Gullkvist 2014).

Prior research considered higher levels of organicity a better strategy for improving time-based competitive advantage, as compared to organisation structures that are more mechanistic in nature (i.e., they have lower levels of organicity) (Prange & Verdier 2011; Singh et al. 2019; Wilden et al. 2013; Ylinen & Gullkvist 2014). However, the present study found that in the case of SMEs, the relationship between organicity and time-based competitive advantage was negative. This suggests that organisation structures that are more mechanistic in nature increase time-based competitive advantage.

Other research linking organisation structure (organicity) and operational efficiency might help explain this result. In terms of obtaining operational efficiency—which can lead to faster time-based competitive advantage—past research has noted that operational efficiency is commonly generated in highly mechanistic structures that are beneficial in stable environments (Covin et al. 2006; Parthasarthy & Sethi 1993; Slevin 1990). One reason why mechanistic organisational models achieve higher efficiency is that a formalised structure provides clear directions and established standards that employees are expected to follow. Further, the decision-making techniques are also clearly communicated to all levels of management, which reduces role ambiguity and enhances operational efficiency (Hao et al. 2012). In turn, this could potentially lead to shortening the time between a product's conceptualisation and its final release to the market. Additionally, mechanistic structures are highly beneficial in manufacturing industries in which adherence to standard practices is encouraged and accepted. In such organisations, well laid-out procedures promote efficiency in the processing of non-complex, routine and repetitive tasks (Sisaye & Birnberg 2010). This could explain the results of the present study, which found that SMEs achieve higher time-based competitive advantage with mechanistic structures than

with organic structures. Due to the small size of SMEs, their relatively flatter structure and their low levels of bureaucracy, it has been suggested that internal communication and integration between different departments can be facilitated with mechanistic structures, regardless of the industry of the operation (Luoma et al. 2016; MacMillan et al. 1985; Palmié et al. 2015). The implications of this for time-based competitive advantage are that SMEs that operate with mechanistic structure can achieve greater time-based competitive advantage by mobilising internal processes quickly, and with greater integration, to achieve first-mover advantage.

As has been demonstrated above, prior research has not found a common ground regarding the role that mechanistic structures and organic structures play in allowing the firms to gain time-based competitive advantage. Although past research has revealed that mechanistic structures play a role in enhancing operational efficiency (Sisaye & Birnberg 2010), organic structures are noted as enhancing the rate of innovation (Escrig et al. 2019). Conversely, in the context of highly bureaucratic organisations, a mechanistic structure leads to decision-making delays that can negatively affect time-based competitive advantage, as revealed in prior studies (Palmié et al. 2015). Therefore, due to their bureaucratic nature, MNEs are prone to experiencing delays in decision-making, which ultimately reduces the first-mover advantage that the firms could achieve. However, for SMEs—who do not possess a high level of bureaucracy—an organic structure can lead to limited internal integration, loss of information and a lack of cohesion among the different departments. This may lead to a lower rate of time-based competitive advantage. Therefore, this study presents novel results that suggest that highly mechanistic structures are preferable for SMEs and for developing greater time-based competitive advantage.

6.3.2 The Mediating Role of Dynamic Capabilities in the Organisation Structure and Time-Based Competitive Advantage Relationship

The present study hypothesised that dynamic capabilities mediate the positive relationship between organisation structure (organicity) and time-based competitive advantage (H2). The study's results support this hypothesis, such that an organisation structure (organicity) significantly influences time-based competitive advantage through dynamic capabilities ($\beta = 0.101$, $t = 5.408$). Independently higher levels of organicity influence time-based competitive advantage negatively, while higher levels of organicity influence time-based competitive advantage positively through dynamic capabilities. In brief, higher levels of organicity encourage dynamic capabilities in the form of sensing, seizing and reconfiguration; these capabilities positively affect time-based competitive advantage by reducing the time from

product conceptualisation to product launch. This indirect, partial effect demonstrates how dynamic capabilities are a key mechanism in the relationship between organisation structure (organicity) and time-based competitive advantage.

Another reason for the ongoing debate regarding the choice between organic and mechanistic structures (apart from firm size and level of bureaucracy) is the presence or absence of dynamic capabilities. There is presently a lack of research that has considered the mediating role of dynamic capabilities on the relationship between organisation structure (organicity) and time-based competitive advantage. The thesis addresses this research gap and highlights the important (partial) mediating role that dynamic capabilities play in the relationship between organisation structure and time-based competitive advantage.

A relatively recent study by Wohlgemuth and Wenzel (2015) found that when SME firms possess dynamic capabilities, they tend to develop a highly routine structure at the strategic level, but not at the operational level. Put differently, the authors noted that firms that possess dynamic capabilities have organic structures at the operational level and highly mechanistic structures at the strategic level. The present study contributes to the research by identifying that the role of organisation structure (organicity) shifts when dynamic capabilities are introduced. More specifically, in the context of SMEs, higher degrees of organicity only benefit time-based competitive advantage when dynamic capabilities are present, as indicated by the current study. However, in the absence of dynamic capabilities, an SME's time-based competitive advantage benefits from mechanistic structures. In light of the above insight, the current study's results align with the research conducted by Wohlgemuth and Wenzel (2015) regarding the role that dynamic capabilities play in directing the firm's level of organicity. The novel finding in this study is that dynamic capabilities help reduce the level of uncertainty in the literature regarding the organisation structure (organicity) that SMEs should establish to gain time-based competitive advantage. Therefore, this study has outlined that if the firm possesses dynamic capabilities, then it will benefit from higher levels of organicity; conversely, in the absence of dynamic capabilities, greater time-based competitive advantage can be achieved through an organisation structure that is more mechanistic in nature.

6.4 The Moderating Influence of an Organisation Structure

It was hypothesised that organisation structure (organicity) moderates the positive relationship between dynamic capabilities and time-based competitive advantage (H3), such that higher levels of organicity lead to a stronger link between dynamic capabilities and time-based competitive advantage.

The interaction effects between organisation structure (organicity) and dynamic capabilities have a significant positive impact on time-based competitive advantage (β = 0.313, t = 10.597). That is, the higher a firm's organicity, the stronger the relationship between dynamic capabilities and time-based competitive advantage. This finding aligns with the common understanding of organic structure and how it facilitates innovation.

The hypothesis stated above was derived from the presumption that an organisation structure may influence the relationship between dynamic capabilities and time-based competitive advantage due to how organisation structure (organicity) influences innovation. Additionally, research by Miller (1983) contended that firms that are usually characterised by non-bureaucratic structures often promote organisational members' commitment to innovation. Specifically, the business leaders—who are also the decision-makers—become increasingly aware of the need for change and thus encourage entrepreneurial efforts to improve the firm's performance and competitive advantage. Such recognition for change constitutes a dynamic capability, such as the reconfiguration of resources to exploit identified opportunities (Jantunen et al. 2005; Zahra 2006).

Prior research by Covin and Slevin (1988) has sought to explore the moderating influence of organisation structure (organicity) on the relationship between the top management's entrepreneurial orientation and the organisation's performance. In their earlier work, Burns and Stalker (1961) argued that higher organicity supports entrepreneurial orientation, while mechanistic structure hinders its success. Geller (1980), Burgelman and Sayles (1986), Drucker (1985) and Pinchot (1985) reported similar results. However, these studies were conducted with larger firms and MNEs, whereas the present study was conducted with SMEs. Based on this study's results, it can be noted that the higher a firm's organic nature (for both SMEs and MNEs), the stronger the relationship between dynamic capabilities and time-based competitive advantage. Organic structures are favourable when firms exist in dynamic markets, as they are better suited to responding to market changes and developing new products or changing existing ones.

The present study's results regarding the role of organisation structure (organicity) lead to several novel findings. First, SMEs that develop and deploy higher levels of organicity (i.e., no emphasis on uniform managerial style, nor on following of strict rules and formal regulations, and a relatively loose control of operations) are more likely to capitalise on the positive effects that dynamic capabilities exert on time-based competitive advantage.

Second, organic structures allow the firm to work without the presence of a high level of bureaucracy, and they facilitate the working process by removing hierarchical levels. This enhances internal communication and provides a wider platform for horizontal integration (Davenport & Nohria 1994; Mallen et al. 2016; Ramezan 2011). The possible interplay of integration between different units and departments in an SME—which enhances internal coordination and creates an open dialogue in the organisation—could provide a possible explanation for H3.

6.5 The Mediating Role of Dynamic Capabilities in the Relationship between Entrepreneurial Orientation and Time-Based Competitive Advantage

The present study hypothesised that dynamic capabilities mediate the positive relationship between entrepreneurial orientation and time-based competitive advantage (H4). The direct influence of entrepreneurial orientation on time-based competitive advantage is also further evaluated and discussed.

6.5.1 The Direct Relationship between Entrepreneurial Orientation and Time-Based Competitive Advantage

Although research that links entrepreneurial orientation and time-based competitive advantage is limited, this study nevertheless contributes to this body of work. The direct link found in this study that indicates that entrepreneurial orientation is an antecedent of time-based competitive advantage ($\beta = 0.207$, $t = 5.91$) supports the research conducted by Clausen and Korneliussen (2012) and Shan et al. (2015). These two studies did not focus on the SME context; the result of the present study thus represents a novel finding in the context of UK-based SMEs.

In establishing a positive relationship between entrepreneurial orientation and time-based competitive advantage, this study leads to several novel findings. First, it identifies that when SMEs have greater entrepreneurial orientation, they adopt more explorative and exploitative strategies, as compared to firms that are not entrepreneurially oriented (Lisboa, Skarmeas & Lages 2011; Kollmann & Stöckmann 2014). This, in turn, leads to an enhanced time-based competitive advantage (Mehrabi et al. 2018). Voss and Voss (2013) noted that firms displaying an efficient rate of new product development are regarded as possessing explorative and exploitative dimensions that affect how firms operationalise their resources. Further, this study supports the argument that the risk-taking approach that entrepreneurial orientation provides enables firms to achieve an enhanced rate of experiential learning, exploration and exploitation

of new and old avenues, which have been generated in the process of experiential learning (Dess et al. 2003; Kollmann & Stöckmann 2014). The process of exploration offers a greater advantage to the firm, as it helps the firm learn about the customer's preferences and needs much earlier than the competition (Mahrabi et al. 2018; Matsuno et al. 2002), thereby providing the firm with a time-based competitive advantage. Additionally, firms that possess higher entrepreneurial orientation are said to explore the market so that they can obtain technological leadership that allows them to learn the customers' needs and adjust how quickly the product is released into the market (Zahra et al. 2006; Zhou et al. 2005). Further, firms that possess higher entrepreneurial orientation are shown to be more receptive to the market changes that occur and can thus quickly adjust their offerings (Pérez-Luño, Wiklund & Cabrera 2011).

Moreover, the novelty of the present study lies in the fact that much of the research on entrepreneurial orientation has been focused on establishing its influence on firm performance (Arunachalam et al. 2018; Mu et al. 2017; Rauch et al. 2009). Although the link between entrepreneurial orientation and firm performance is well established (Alegre & Chiva 2013; Davis et al. 2010; Jantunen et al. 2015; Jiao et al. 2010; Kreiser & Davis 2010; van Doorn et al. 2013), the present study outlines that entrepreneurial orientation influences time-based competitive advantage—which has been shown to have a greater performance effect. Because firms with higher entrepreneurial orientation exhibit a higher efficiency in terms of moving earlier than their competition and releasing products before their competitors, this can positively affect the firm's performance. Therefore, given that entrepreneurial orientation and firm performance research has been well established, this study adds to this body of work by drawing attention to the mediating role of dynamic capabilities.

However, although SMEs generally benefit from possessing higher entrepreneurial orientation, the benefits are reversed when the firm possesses too much entrepreneurial orientation. This indicates that the correct amount of entrepreneurial orientation is necessary. Research by Shan et al. (2015) structured entrepreneurial orientation as a composite measure the comprised three constructs: risk-taking, proactiveness and innovativeness. In doing so, Shan et al. (2015) noted that risk-taking and innovativeness negatively influenced time-based competitive advantage, while proactiveness displayed a direct relationship in an inverted U-shape. In brief, too much proactiveness reduces time-based competitive advantage. Although the present study considered entrepreneurial orientation a unidimensional measure rather than a composite measure, the results indicated that entrepreneurial orientation positively influences time-based competitive advantage.

Further, it has been noted that risk-taking can influence customer learning and enhance the product's performance if the customers perceive it to be a product of risk-taking (Gatignon & Xuereb 1997). However, when firms possess too much proactiveness, their customer perception can be negatively influenced and thereby lead to low rates of product acceptance. Therefore, it can be stated, based on the discussion above, that firms possessing higher entrepreneurial orientation usually generate a higher time-based competitive advantage. However, the use of entrepreneurial orientation through the processes of exploration and exploitation must follow a balanced approach. Therefore, with their limited resources, SMEs must ensure that they apply a balanced strategy of entrepreneurial orientation to extract the benefits for time-based competitive advantage. Failure to do so can result in the loss of first-mover advantage and the subsequently reduced rate of SME firm performance.

6.5.2 The Mediating Role of Dynamic Capabilities in the Entrepreneurial Orientation and Time-Based Competitive Advantage Relationship

The preceding section has outlined the effects that entrepreneurial orientation has on time-based competitive advantage. SMEs with higher dynamic capabilities may understand which market and customers require a response due to their sensing capabilities. Therefore, it was hypothesised that dynamic capabilities play a mediating role in the positive relationship between entrepreneurial orientation and time-based competitive advantage (H4). The results of the present study support this novel hypothesis and outline a partial mediation, such that the indirect effects of dynamic capabilities partially influence the positive relationship between entrepreneurial orientation and time-based competitive advantage ($\beta = 0.219$, $t = 7.049$).

Entrepreneurial orientation allows the firm to implement certain changes that are required for a time-based competitive advantage because the firm can pursue risky ventures and reconfigure its asset base. In brief, entrepreneurial orientation allows the firm to recognise arising opportunities at an early phase and take advantage of them. Therefore, entrepreneurial orientation influences the rate at which new products are launched into the market. Further, based on the present study, it can be suggested that firms with higher dynamic capabilities can balance between the levels of exploration and exploitation that are associated with entrepreneurial orientation, thereby leading to greater time-based competitive advantage.

Moreover, dynamic capabilities can lead to greater codified knowledge (Schoonhovern et al. 1990), which in turn can enhance the relationship between entrepreneurial orientation and time-based competitive advantage (Shan et al. 2016). The presence of dynamic capabilities can also allow the firm to reduce the errors that arise due to the product's innovativeness (Harter

et al. 2000; Shan et al. 2016). The results of the present study, in relation to the (partial) mediating effects of dynamic capabilities in the relationship between entrepreneurial orientation and time-based competitive advantage are novel findings that contribute to an emerging body of research.

6.6 The Moderating Influence of Entrepreneurial Orientation

It was hypothesised that entrepreneurial orientation moderates the positive relationship between dynamic capabilities and time-based competitive advantage, such that higher levels of entrepreneurial orientation positively increased the strength of the relationship between dynamic capabilities and time-based competitive advantage (H5). The results indicated no support for this hypothesis, as the effect of dynamic capabilities on time-based competitive advantage was weaker in the presence of entrepreneurial orientation ($\beta = –0.106$, $t = 4.315$). This suggests that the positive relationship between dynamic capabilities and time-based competitive advantage is weaker at higher levels of entrepreneurial orientation and stronger at lower levels of entrepreneurial orientation. This result was not expected and indicates that the hypothesis is not supported.

It was noted earlier that entrepreneurial orientation influences the speed of innovation (Clausen & Korneliussen 2012; Shan et al. 2016). Shan et al. (2016) found a negative relationship between entrepreneurial orientation and innovation speed (time-based competitive advantage in this study) that could be due to a greater codification of knowledge required or the presence of errors in the design (Harter et al. 2000; Schoonhoven et al. 1990). As firms adopt entrepreneurial orientation to gain benefits from a risk-taking approach (Miller & Friesen 1982) and evidence suggests that entrepreneurial orientation negatively influences innovation speed (Clausen & Korneliussen 2012; Shan et al. 2016), the present study has demonstrated that entrepreneurial orientation negatively moderates the positive relationship between dynamic capabilities and time-based competitive advantage. Although the result was significant, the direction was reversed, indicating that entrepreneurial orientation weakened the relationship between dynamic capabilities and time-based competitive advantage.

6.7 The Influence of Control Variables

The present study adopted several control variables to evaluate the relationships in its conceptual model. These controls included a firm's size (employee number and sales turnover), age, industry (manufacturing and services), technological turbulence and environmental dynamism. No hypothesised relationship was affected by the presence of these controls. This

study's findings align with the insights provided by Makadok (2001), who noted that the external environment does not affect the relationship between dynamic capabilities and SME firm performance. Therefore, this study contributes to this growing debate regarding whether the external environment is linked to the relationship between dynamic capabilities and SME firm performance. Further, this study has concluded that the investigated relationships hold true independently of external influences. The present study's results do not support the assumption that an organisation's performance is likely to depend on the strategy–environment fit (Mintzberg 1979).

Additionally, Schilke (2013) noted that the effects of dynamic capabilities on SME firm performance depend on market dynamism. This is especially applicable for sectors in which high performance and firm viability are transitory in nature for firms with low dynamic capabilities (Zollo & Winter 2002). Finally, the results indicated that firm characteristics such as size (employee number and sales turnover), age and industry (manufacturing and services) do not exert any controlling influence over the relationships identified in this study. This study's results do not support the findings of Arend (2014), who found that firm characteristics control the relationship between dynamic capabilities and SME firm performance.

In conclusion, Table 6.1 depicts the outcomes of the present study.

Table 6.1: Outcomes of the Study's Hypotheses

Hypothesis number	Hypothesis	Outcomes of this study
H1	Time-based competitive advantage mediates the positive relationship between dynamic capabilities and SME firm performance.	Supported
H2	Dynamic capabilities mediate the positive relationship between an organisation structure (organicity) and time-based competitive advantage.	Supported
H3	An organisation structure (organicity) moderates the positive relationship between dynamic capabilities and time-based competitive advantage.	Supported
H4	Dynamic capabilities mediate the positive relationship between entrepreneurial orientation and time-based competitive advantage.	Supported
H5	Entrepreneurial orientation moderates the positive relationship between dynamic capabilities and time-based competitive advantage.	Not supported

6.8 Contributions of the Research

6.8.1 Theoretical Contributions

The present study has outlined that SMEs can develop dynamic capabilities and use them to generate greater time-based competitive advantage and SME firm performance. This study has revealed that regardless of the resources that are available to a firm, SMEs do use dynamic capabilities to enhance their performance, both directly and through time-based competitive advantage—which was previously considered too difficult for SMEs (Sawers et al. 2008). Dynamic capabilities are thought to develop over time (Sawers et al. 2008) and require an extensive amount of resources (Tallon 2008) that are not readily available to small firms. However, a relatively recent longitudinal study by Fernandes et al. (2017) found that SMEs can develop dynamic capabilities using organisational learning. Therefore, the present study makes an empirical contribution to the emerging body of research that focuses on dynamic capabilities in the SME context.

Further, the study also makes three variance-based theoretical contributions. First, the research has identified that for firms to generate time-based competitive advantage and achieve a higher performance, SMEs must possess dynamic capabilities, entrepreneurial orientation and an

organic structure. Therefore, the current conceptual model that was tested empirically outlines that when SMEs meet these conditions, they will invariably generate time-based competitive advantage and achieve higher SME firm performance.

Second, it is important to highlight that this research tested novel hypotheses that have not been tested in prior research. For example, H1, H2, H3, H4 and H5 make novel contributions and provide insights into the roles that organisation structure (organicity), entrepreneurial orientation, dynamic capabilities and time-based competitive advantage play in stimulating higher SME firm performance. One of this study's most important findings is that dynamic capabilities (partially) mediate the positive relationship between organisation structure (organicity) and time-based competitive advantage (H2). When considering the direct influence of organisation structure (organicity) on time-based competitive advantage, the results reveal that a mechanistic structure is preferable in the context of SMEs. However, when a firm possesses dynamic capabilities, the results indicate that higher levels of organicity encourage a higher level of time-based competitive advantage.

Additionally, with the hypothesis that organisation structure (organicity) moderates the positive relationship between dynamic capabilities and time-based competitive advantage (H3), the moderation effect was found to be significant. Put simply, the interaction between dynamic capabilities and organisation structure (organicity) positively influence time-based competitive advantage. Therefore, it was noted that the relationship between dynamic capabilities and time-based competitive advantage was stronger when the firm possessed an organic structure and weaker when it possessed a mechanistic structure. The implications of this have been discussed in the earlier sections of this chapter. The study found that the direct influence of organisation structure (organicity) on time-based competitive advantage was negative, such that highly mechanistic structures are preferred to encourage greater time-based competitive advantage. Conversely, when dynamic capabilities are introduced, organic structures are preferred to gain greater time-based competitive advantage. The behavioural change of the effect of an organisation structure (organicity) on time-based competitive advantage in the presence and absence of dynamic capabilities suggests that the dichotomous dialogue in prior research with regard to the choice between organic and mechanistic structures should be reconsidered. This is one of this study's most important theoretical contributions; it may lead to reconsideration regarding the choice between organic and mechanistic structures for SMEs. The role of an organisation structure (organicity) in SMEs has always been a topic of debate, with many scholars stating that one structure is better than the other for SME firm performance. In the

case of SMEs, the role that dynamic capabilities play in shifting the preferred organisation structure (organicity) has not been previously reported.

Third, the study's results indicate that dynamic capabilities mediated the positive relationship between entrepreneurial orientation and time-based competitive advantage (H4). This finding makes a novel contribution to the growing body of research in the context of SMEs. Although it was noted that entrepreneurial orientation positively influences time-based competitive advantage, this relationship is mediated through dynamic capabilities. That is, another contribution of the present study is the understanding that the effect of entrepreneurial orientation can be mediated through dynamic capabilities. This indicates that when firms possess an entrepreneurial orientation, they can develop time-based competitive advantage through dynamic capabilities.

The present study has thus furthered knowledge by evaluating indirect and direct relationships that have not been reported before. For example, although it was commonly understood that dynamic capabilities influence SME firm performance, the mechanism by which they do so was not clearly established, especially in the context of SMEs. The present study has identified that when SMEs possess dynamic capabilities, they can develop a greater time-based competitive advantage that leads to an enhanced SME firm performance. Time-based competitive advantage is extremely important for SMEs, as the faster that they launch their products or services from conceptualisation, the more likely they are to achieve first-mover advantage and thereby positively influence SME firm performance.

It is important to note here that while the study has made substantial theoretical implications to furthering dynamic capabilities research in the context of SMEs, the findings of the research are only applicable to those SMEs that have been functioning for more than three years and those that have developed dynamic capabilities. This is due to the sample population of the present research which only included SMEs that were 3 years or older to allow for the development of dynamic capabilities. Thus, there is limited generalisability in the present research.

6.8.2 Managerial Implications

The study has several practical and managerial implications. First, it has demonstrated that not only can SMEs develop dynamic capabilities, but they can also benefit from them regardless of their size. This provides SME managers and founders with the opportunity to build dynamics capabilities and generate greater time-based competitive advantage and SME firm performance.

Second, the research has also shown that time-based competitive advantage is an antecedent of SME firm performance that allows firms to focus on innovation speed and on generating first-mover advantage in the market. As dynamic capabilities are embedded in RBV theory, the process of building them can start with the development of resources that allow the firm to sense, seize and transform (reconfigure) their internal processes and capabilities. For example, an SME can invest in paying close attention to certain changes in the market and in customer needs, which can then be leveraged to release an early product or service that generates first-mover and time-based competitive advantage. Additionally, firms can develop internal capabilities that are strategic and potentially flexible in nature, so they can be reconfigured without changing the firm's operational capability too much. The firm should also invest in the generation, management and ownership of intangible assets that allow it to develop dynamic capabilities. One important intangible asset that firms can invest in developing is technical know-how. This would offer firms enough knowledge to both seize the opportunities that have been sensed and reconfigure their internal processes to respond effectively to the changes. These depend on managerial action, and since this study has shown that dynamics capabilities lead to positive performance enhancements, there is ample motivation for managers to take action in this regard.

Third, managers—especially those in service SMEs—should consider the business model as business-model innovations that can lead to uncovering new potential markets. SMEs can accomplish this by ensuring that they develop entrepreneurial orientation and take risks that are associated with their business. Being entrepreneurially oriented will not only lead to the development of dynamic capabilities but also to the generation of time-based competitive advantage, as entrepreneurial firms will be able to take proactive risks to obtain first-mover advantage. This, coupled with technical know-how, can lead to an improved innovation speed and an enhanced rate of SME firm performance.

Fourth, in terms of organisation structure (organicity), as firms endeavour to develop dynamic capabilities, they can slowly transform into an organic structure. Managers can do this by ensuring that their firms remain cognisant of market changes and that they possess the internal capabilities to react positively to those changes (in terms of structure).

Fifth, time-based competitive advantage is a critical predictor of SME firm performance; it is also influenced by dynamic capabilities. The implication of these findings for firms is that they encourage managers to reduce decision-making delays and make adjustments that account for

market lags so that they can fully capitalise on the positive effects of innovation speed and first-mover advantage in the market.

6.9 Limitations and Future Research

The first limitation of the present study was the use of self-report measures, which could lead to bias and skewed responses due to social desirability bias. A primary drawback of using self-report measures in research is that the respondents might provide responses based on what they perceive to be true rather than on what is actual. The implications of this are that the firms may not have truly developed sufficient dynamics capabilities, though the respondents perceived that they had. The limited time and resources available to the researcher were a reason for using self-report measures, as they are generally used to collect large amounts of data. Alternatively, future research can conduct observational studies that employ objective data to ensure that social desirability bias does not potentially affect the study's results.

The second limitation is that this research did not conduct a temporal study. It is well understood that dynamics capabilities and time-based competitive advantage develop over time. However, the present study was cross-sectional in nature, so the long-term effects of developing dynamic capabilities could not be assessed in the time available. Future research can include longitudinal studies that efficiently reflect how dynamic capabilities affect sustained time-based competitive advantage and SME firm performance over time, as well as the influences of entrepreneurial orientation and organisation structure (organicity). Additionally, by using a longitudinal study design coupled with qualitative data, future studies can further outline the mechanisms by which SMEs use dynamic capabilities; this could further enhance time-based competitive advantage and SME firm performance.

Third, the study's geographical location was limited to the UK, which is an extensively studied area compared to the developing world, in which theory requires further development. Therefore, future researchers could conduct studies in regions such as the Middle East, which also has a high concentration of SMEs. Further, researchers can endeavour to capture the specific differences between two different regions, which could reveal how dynamic capabilities, time-based competitive advantage, entrepreneurial orientation and organisation structure (organicity) work to enhance SME firm performance in different geographical contexts.

Fourth, the results of the present study that pertain to the moderating role of organisation structure (organicity) in the relationship between dynamic capabilities and time-based competitive advantage suggest the need for further research. This was a novel relationship that

was studied in the present research; it suggests that in the context of SMEs, the role of organisation structure (organicity) must be further clarified. An understanding must be developed of how higher levels of mechanistic structures positively moderate the relationship between dynamic capabilities and time-based competitive advantage.

Finally, the present research has only focused on time-based competitive advantage as a mediator where other probable mediators could exist. While the choice of time-based competitive advantage is valid, justified, and emerging from past research, the effect of not including other probable mediators could be that the mediating effect is overstated in the present research. Future researchers are thus recommended to develop a multiple mediation approach to be able to account for all of the probable variables.

References

Acs, ZJ, Desai, S & Hessels, J 2008, 'Entrepreneurship, economic development and institutions', *Small Business Economics*, vol. 31, no. 3, pp. 219–234.

Adcock, R & Collier, D 2001, 'Measurement validity: a shared standard for qualitative and quantitative research', *American Political Science Review*, pp. 529–546.

Adler, PS & Borys, B 1996, 'Two types of bureaucracy: enabling and coercive', *Administrative Science Quarterly*, pp. 61–89.

Adner, R & Helfat, CE 2003, 'Corporate effects and dynamic managerial capabilities', *Strategic Management Journal*, vol. 24, no. 10, pp. 1011–1025.

Ahrens, T & Chapman, CS 2004, Accounting for flexibility and efficiency: a field study of management control systems in a restaurant chain', *Contemporary Accounting Research*, vol. 21, no. 2, pp. 271–301.

Alegre, J & Chiva, R 2013, Linking entrepreneurial orientation and firm performance: the role of organisational learning capability and innovation performance', *Journal of Small Business Management*, vol. 51, no. 4, pp. 491–507.

Altinay, L, Madanoglu, M, de Vita, G, Arasli, H & Ekinci, Y 2016, 'The interface between organizational learning capability, entrepreneurial orientation, and SME growth', *Journal of Small Business Management*, vol. 54, no.3, pp. 871–891.

Ambrosini, V & Bowman, C 2009, 'What are dynamic capabilities and are they a useful construct in strategic management?' *International Journal of Management Reviews*, vol. 11, no. 1, pp. 29–49.

Ambrosini, V, Bowman, C & Collier, N 2009, 'Dynamic Capabilities: An Exploration of How Firms Renew their Resource Base', *British Journal of Management*, vol. 20, pp. S9–S24.

Amit, R & and Schoemaker, PJ 1993, 'Strategic assets and organisational rent', *Strategic Management Journal*, vol. 14, no.1, pp. 33–46.

Analoui, F & Karami, A 2003, *Strategic management in small and medium enterprises*, Cengage Learning, Stamford, CT.

Anderson, BS, Covin, JG & Slevin, DP 2009, 'Understanding the relationship between entrepreneurial orientation and strategic learning capability: an empirical investigation', *Strategic Entrepreneurship Journal*, vol. 3, no. 3, pp. 218–240.

Anderson, BS, Kreiser, PM, Kuratko, DF, Hornsby, JS & Eshima, Y 2015, 'Reconceptualizing entrepreneurial orientation', *Strategic Management Journal*, vol. 36, no. 10, pp. 1579–1596.

Anderson, JC & Gerbing, DW 1988, 'Structural equation modeling in practice: a review and recommended two-step approach', *Psychological Bulletin*, vol. 103, no. 3, p. 411.

Ansoff, H 2016, *Strategic management*, Springer Publishers, London, UK.

Aragón-Sánchez, A & Sánchez-Marín, G 2005, 'Strategic orientation, management characteristics, and performance: a study of Spanish SMEs', *Journal of Small Business Management*, vol. 43, no. 3, pp. 287–308.

Arend, RJ & Bromiley, P 2009, 'Assessing the dynamic capabilities view: spare change, everyone?' *Strategic Organisation*, vol. 7, no. 1, pp. 75–90.

Arend, RJ 2013, 'Ethics-focused dynamic capabilities: a small business perspective', *Small Business Economics*, vol. 41, no. 1, pp. 1–24.

Arend, RJ 2014, 'Entrepreneurship and dynamic capabilities: how firm age and size affect the "capability enhancement–SME performance relationship"', *Small Business Economics*, vol. 42, no. 1, pp. 33–57.

Armstrong, JS & Overton, TS 1977, 'Estimating nonresponse bias in mail surveys', *Journal of Marketing Research*, vol. 14, no. 3, pp. 396–402.

Artto, K, Kulvik, I, Poskela, J and Turkulainen, V 2011, 'The integrative role of the project management office in the front end of innovation', *International Journal of Project Management*, vol. 29, no. 4, pp. 408–421.

Ashill, NJ & Jobber, D 2010, 'Measuring state, effect, and response uncertainty: theoretical construct development and empirical validation', *Journal of Management*, vol. 36, no. 5, pp. 1278–1308.

Ashrafi, R & Mueller, J 2015, 'Delineating IT resources and capabilities to obtain competitive advantage and improve firm performance', *Information Systems Management*, vol. 32, no. 1, pp. 15–38.

Ashrafi, R, Sharma, SK, Al-Badi, AH & Al-Gharbi, K 2014, 'Achieving business success through information and communication technologies adoption by small and medium enterprises in Oman', *Middle-East Journal of Scientific Research*, vol. 22, no. 1, pp. 138–146.

Asree, S, Zain, M & Rizal Razalli, M 2010, 'Influence of leadership competency and organisational culture on responsiveness and performance of firms', *International Journal of Contemporary Hospitality Management*, vol. 22, no. 4, pp. 500–516.

Ates, A, Garengo, P, Cocca, P & Bititci, U 2013, 'The development of SME managerial practice for effective performance management', *Journal of Small Business and Enterprise Development*, vol. 20, no. 1, pp. 28–54.

Audretsch, DB 2007, *The entrepreneurial society*, Oxford University Press, Oxford, UK.

Audretsch, DB, Santarelli, E & and Vivarelli, M 1999, 'Start-up size and industrial dynamics: some evidence from Italian manufacturing', *International Journal of Industrial Organisation*, vol. 17, no. 7, pp. 965–983.

Augier, M & Teece, DJ 2007, 'Dynamic capabilities and multinational enterprise: Penrosean insights and omissions', *Management International Review*, vol. 47, no. 2, pp. 175–192.

Avlonitis, GJ & Salavou, HE 2007, 'Entrepreneurial orientation of SMEs, product innovativeness, and performance', *Journal of Business Research*, vol. 60, no. 5, pp. 566–575.

Bagozzi, RP & Phillips, LW 1982, 'Representing and testing organisational theories: a holistic construal', *Administrative Science Quarterly*, vol. 27, no. 3, pp. 459–489.

Bamiatzi, VC & Kirchmaier, T 2014, 'Strategies for superior performance under adverse conditions: a focus on small and medium-sized high-growth firms', *International Small Business Journal*, vol. 32, no. 3, pp. 259–284.

Banker, RD, Mashruwala, R & Tripathy, A 2014, 'Does a differentiation strategy lead to more sustainable financial performance than a cost leadership strategy?', *Management Decision*, vol. 52, no. 5, pp. 872-896.

Barney, J 1991, 'Firm resources and sustained competitive advantage', *Journal of Management*, vol. 17, no. 1, pp. 99–120.

Barney, JB 2001, 'Resource-based theories of competitive advantage: a ten-year retrospective on the resource-based view', *Journal of Management*, vol. 27, no. 6, pp. 643–650.

Barreto, I 2010, 'Dynamic capabilities: a review of past research and an agenda for the future', *Journal of Management*, vol. 36, no. 1, pp. 256–280.

Basul, A 2020, *New report shows UK SMEs 'treated unfairly' by banks*, UKTN (UK Tech News), viewed 8 August 2020, <https://www.uktech.news/featured/new-report-shows-uk-smes-treated-unfairly-by-banks-20200305#:~:text=92%25%20of%20small%20and%20medium>.

Beal, RM 2000, 'Competing effectively: environmental scanning, competitive strategy, and organisational performance in small manufacturing firms', *Journal of Small Business Management*, vol. 38, no. 1, p. 27.

Becker, MC 2004, 'Organisational routines: a review of the literature', *Industrial and Corporate Change*, vol. 13, no. 4, pp. 643–678.

Bethlehem, J & Biffignandi, S 2011, *Handbook of web surveys*, John Wiley & Sons, Inc., Hoboken, NJ.

BHATT, GD & GROVER, V 2005, 'Types of Information Technology Capabilities and Their Role in Competitive Advantage: An Empirical Study', *Journal of Management Information Systems*, vol. 22, no. 2, pp. 253–277.

Bhatt, GD & Grover, V 2005, 'Types of information technology capabilities and their role in competitive advantage: an empirical study', *Journal of Management Information Systems*, vol. 22, no. 2, pp. 253–277.

Birkinshaw, J, Zimmermann, A & Raisch, S 2016, 'How do firms adapt to discontinuous change? Bridging the dynamic capabilities and ambidexterity perspectives', *California Management Review*, vol. 58, no. 4, pp. 36–58.

Björkman, I, Barner-Rasmussen, W & Li, L 2004, 'Managing knowledge transfer in MNCs: the impact of headquarters control mechanisms', *Journal of International Business Studies*, vol. 35, no. 5, pp. 443–455.

Blackburn, JD 1991, *Time-based competition: the next battleground in American manufacturing*, Irwin Professional Publishing, City, State.

Bollen, K & Lennox, R 1991, 'Conventional wisdom on measurement: a structural equation perspective', *Psychological Bulletin*, vol. 110, no. 2, p. 305.

Bonett, DG & Wright, TA 2015, 'Cronbach's alpha reliability: interval estimation, hypothesis testing, and sample size planning', *Journal of Organizational Behavior*, vol. 36, no. 1, pp. 3–15.

Bontis, N, Bart, C, Wakefield, P, Booker, LD & Serenko, A 2007, 'The mediating effect of organisational reputation on customer loyalty and service recommendation in the banking industry', *Management Decision*, vol. 45, no. 9, pp. 1426-1445.

Borch, OJ & Madsen, EL 2007, 'Dynamic capabilities facilitating innovative strategies in SMEs', *International Journal of Technoentrepreneurship*, vol. 1, no. 1, pp. 109–125.

Borsboom, D, Mellenbergh, GJ & van Heerden, J 2004, 'The concept of validity', *Psychological Review*, vol. 111, no. 4, p. 1061.

Bouma, D & Atkinson, B 1995, *A handbook of social science research*, Oxford Univerisity Press, Oxford, UK.

Bourgeois, L 1984, 'Strategic management and determinism', *Academy of Management Review*, vol. 9, no. 4, pp. 586–596.

Bowman, C & Ambrosini, V 2003, 'How the resource-based and the dynamic capability views of the firm inform corporate-level strategy', *British Journal of Management*, vol. 14, no. 4, pp. 289–303.

Bowonder, B, Dambal, A, Kumar, S & Shirodkar, A 2010, 'Innovation strategies for creating competitive advantage', *Research-Technology Management*, vol. 53, no. 3, pp. 19–32.

Boyd, JL & Bresser, RK 2008, 'Performance implications of delayed competitive responses: evidence from the US retail industry', *Strategic Management Journal*, vol. 29, no. 10, pp. 1077–1096.

Brady, T & Davies, A 2004, 'Building project capabilities: from exploratory to exploitative learning', *Organisation Studies*, vol. 25, no. 9, pp. 1601–1621.

Brand, V 2009, 'Empirical business ethics research and paradigm analysis', *Journal of Business Ethics*, vol. 86, no. 4, pp. 429–449.

Branzei, O & Vertinsky, I 2006, 'Strategic pathways to product innovation capabilities in SMEs', *Journal of Business Venturing*, vol. 21, no. 1, 75–105.

Brem, A, Maier, M & Wimschneider, C 2016, 'Competitive advantage through innovation: the case of Nespresso', *European Journal of Innovation Management*, vol. 19, no. 1, pp. 133-148.

Breznik, L & Lahovnik, M 2016, 'Dynamic capabilities and competitive advantage: findings from case studies', *Management: Journal of Contemporary Management Issues*, vol. 21 (special issue), pp. 167–185.

Bridoux, F, Smith, KG & Grimm, CM 2013, 'The management of resources: temporal effects of different types of actions on performance', *Journal of Management*, vol. 39, no. 4, pp. 928–957.

Brislin, RW 1986, 'Research instruments', in E Editor (ed.), *Field methods in cross-cultural research*, City, State, pp. 159–162.

Brown, A 2014, 'Organisational paradigms and sustainability in excellence', *International Journal of Quality and Service Sciences*, vol. 6, no. 2/3. pp. 181-190.

Brown, A 2015, *Confirmatory factor analysis for applied research*, 2nd edn, Guilford Publications, London, UK.

Brown, SL & Eisenhardt, KM 1995, 'Product development: past research, present findings, and future directions', *Academy of Management Review*, vol. 20, no. 2, pp. 343–378.

Bryman, A 2004, 'Qualitative research on leadership: a critical but appreciative review', *The Leadership Quarterly*, vol. 15, no. 6, pp. 729–769.

Burgelman, RA & Sayles, LR 1986, *Inside corporate innovation strategy, structure and munagerial skills***,** The Free Press, New York, NY.

Burns, T & Stalker, G 1961, *The management of innovation.* Quandrangle Books, Chicago, IL.

Burton, M & Obel, B 2013, *Strategic organisational diagnosis and design: the dynamics of fit*, Springer Science & Business Media, Berlin, Germany.

Butner, K & Wilterding, M 2006, 'The perfect product launch: innovation drives growth in the consumer products industry', *IBM Institute for Business Value Study*.

Cai, L, Liu, Q, Deng, S & Cao, D 2014, 'Entrepreneurial orientation and external technology acquisition: an empirical test on performance of technology based new ventures', *Journal of Business Economics and Management*, vol. 15, no. 3, pp. 544–561.

Camisón, C & Villar-López, A 2014, 'Organisational innovation as an enabler of technological innovation capabilities and firm performance', *Journal of Business Research*, vol. 67, no. 1, pp. 2891–2902.

Carbonell, P & Escudero, AIR 2015, 'The negative effect of team's prior experience and technological turbulence on new service development projects with customer involvement', *European Journal of Marketing*, vol. 49, no. 3/4, pp. 278-301.

Cargan, L 2007, *Doing social research,* Rowman & Littlefield, Lanham, MD.

Carton, RB & Hofer, CW 2006, *Measuring organizational performance : metrics for entrepreneurship and strategic management research*, Edward Elgar, Cheltenham.

Cater, T & Pucko, D 2005, 'How competitive advantage influences firm performance: the case of Slovenian firms', *Economic and Business Review for Central and South-Eastern Europe*, vol. 7, no. 2, p. 119.

Cattell, RB & Vogelmann, S 1977, 'A comprehensive trial of the scree and KG criteria for determining the number of factors', *Multivariate Behavioral Research*, vol. 12, no. 3, pp. 289–325.

Cattell, RB 1966, 'The scree test for the number of factors', *Multivariate Behavioral Research*, vol. 1, no. 2, pp. 245–276.

Cavusgil, E, Seggie, SH & Talay, MB 2007, 'Dynamic capabilities view: foundations and research agenda', *Journal of Marketing Theory and Practice*, vol. 15, no. 2, pp. 159–166.

Cepeda, G & Vera, D 2007, 'Dynamic capabilities and operational capabilities: a knowledge management perspective', *Journal of Business Research*, vol. 60, no. 5, pp. 426–437.

Chae, HC, Koh, CE & Prybutok, VR 2014, 'Information technology capability and firm performance: contradictory findings and their possible causes', *Mis Quarterly*, vol. 38, no. 1, pp. 305–326.

Chan, YE, Huff, SL, Barclay, DW & Copeland, DG 1997, 'Business strategic orientation, information systems strategic orientation, and strategic alignment', *Information Systems Research*, vol. 8, no. 2, pp. 125–150.

Chandler, AD 1962/1977, *Strategy and structure*, MIT Press, Cambridge, MA.

Chandler, AD 2003, *Strategy and structure: chapters in the history of the American industrial enterprise*, Beard Books, Frederick, MD.

Chaston, I 2015, *Entrepreneurial marketing: sustaining growth in all organisations*, Palgrave Macmillan, London, UK.

Chen, CJ, Huang, JW & Hsiao, YC 2010, 'Knowledge management and innovativeness: the role of organisational climate and structure', *International Journal of Manpower*, vol. 31, no. 8, pp. 848–870.

Chen, J, Damanpour, F & Reilly, RR 2009, 'Understanding antecedents of new product development speed: A meta-analysis', *Journal of Operations Management*, vol. 28, no. 1, pp. 17–33.

Chen, J, Damanpour, F & Reilly, RR 2010, 'Understanding antecedents of new product development speed: a meta-analysis', *Journal of Operations Management*, vol. 28, no. 1, pp. 17–33.

Chesbrough, HW & Teece, DJ 2002, 'Organizing for innovation: when is virtual virtuous?', *Harvard Business Review*, vol. 80, no. 8, pp. 127–134.

Chin, WW 1998, 'The partial least squares approach to structural equation modeling', *Modern Methods for Business Research*, vol. 295, no. 2, pp. 295–336.

Chin, WW, Marcolin, BL & Newsted, PR 2003, 'A partial least squares latent variable modeling approach for measuring interaction effects: results from a Monte Carlo simulation study and an electronic-mail emotion/adoption study', *Information Systems Research*, vol. 14, no. 2, pp. 189–217.

Chirico, F & Nordqvist, M 2010, 'Dynamic capabilities and trans-generational value creation in family firms: the role of organisational culture', *International Small Business Journal*, vol. 28, no. 5, pp. 487–504.

Chittithaworn, C, Islam, MA, Keawchana, T & Yusuf, DHM 2011, 'Factors affecting business success of small & medium enterprises (SMEs) in Thailand', *Asian Social Science*, vol. 7, no. 5, p. 180.

Chmielewski, DA & Paladino, A 2007, 'Driving a resource orientation: reviewing the role of resource and capability characteristics', *Management Decision*, vol. 45, no. 3, pp. 462-483.

Christensen, JF, Olesen, MH & Kjær, JS 2005, 'The industrial dynamics of Open Innovation—Evidence from the transformation of consumer electronics', *Research Policy*, vol. 34, no. 10, pp. 1533–1549.

Civelek, E, Cemberci, M, Artar, K & Uca, N 2015, *Key factors of sustainable firm performance*, Lulu Publishers, New York, NY.

Clark, CE, Cavanaugh, NC, Brown, CV & Sambamurthy, V 1997, 'Building change-readiness capabilities in the IS organisation: insights from the Bell Atlantic experience', *MIS Quarterly*, vol. 21, no. 4, pp. 425–455.

Clausen, T & Korneliussen, T 2012, 'The relationship between entrepreneurial orientation and speed to the market: the case of incubator firms in Norway', *Technovation*, vol. 32, nos 9–10, pp. 560–567.

Claver-Cortés, E, Pertusa-Ortega, EM & Molina-Azorín, JF 2012, 'Characteristics of organisational structure relating to hybrid competitive strategy: implications for performance', *Journal of Business Research*, vol. 65, no. 7, pp. 993–1002.

Coff, RW 1999, 'When competitive advantage doesn't lead to performance: the resource-based view and stakeholder bargaining power', *Organisation Science*, vol. 10, no. 2, pp. 119–132.

Cohen, WM & Levinthal, DA 1990, 'Absorptive capacity: a new perspective on learning and innovation', *Administrative Science Quarterly, vol.* 35, no. 1, pp. 128–152.

Cohendet, P, Creplet, F, Diani, M, Dupouët, O & Schenk, E 2004, 'Matching communities and hierarchies within the firm', *Journal of Management and Governance*, vol. 8, no. 1, pp. 27–48.

Collis, DJ 1994, 'Research note: how valuable are organisational capabilities?', *Strategic Management Journal*, vol. 15, no. S1, pp. 143–152.

Collis, J & Hussey, R 2013, *Business research: a practical guide for undergraduate and postgraduate students*, Palgrave Macmillan, City, State.

Combs, JG, Crook, TR & Shook, CL 2005, 'The Dimensionality of Organizational Performance and its Implications for Strategic Management Research', *Research Methodology in Strategy and Management*, vol. 2, no. 5, pp. 259–286.

Conner, KR 1991, 'A historical comparison of resource-based theory and five schools of thought within industrial organisation economics: do we have a new theory of the firm?', *Journal of Management*, vol. 17, no. 1, pp. 121–154.

Connolly, T, Conlon, EJ & Deutsch, SJ 1980, 'Organizational Effectiveness: A Multiple-Constituency Approach', *Academy of Management Review*, vol. 5, no. 2, pp. 211–218.

Cordon-Pozo, E, Garcia-Morales, VJ & Aragon-Correa, JA 2006, 'Inter-departmental collaboration and new product development success: a study on the collaboration between marketing and R&D in Spanish high-technology firms', *International Journal of Technology Management*, vol. 35, no. 1–4, pp. 52–79.

Cosh, A, Fu, X & Hughes, A 2010, 'Organisation structure and innovation performance in different environments', *Small Business Economics*, vol. 39, no. 2, pp. 301–317.

Cosh, A, Fu, X & Hughes, A 2012, 'Organisation structure and innovation performance in different environments', *Small Business Economics*, vol. 39, no. 2, pp. 301–317.

Coviello, NE, Brodie, RJ & Munro, HJ 2000, 'An investigation of marketing practice by firm size', *Journal of Business Venturing*, vol. 15, nos 5–6, pp. 523–545.

Covin, JG & Miles, M 2006, 'Corporate entrepreneurship and the pursuit of competitive advantage', in Z Shaker (ed.), *Corporate entrepreneurship and growth*, Edward Elgar, Indianapolis, IN, pp. 47–63.

Covin, JG & Slevin, DP 1988, 'The influence of organisation structure on the utility of an entrepreneurial top management style', *Journal of Management Studies*, vol. 25, no. 3, pp. 217–234.

Covin, JG & Slevin, DP 1989, 'Strategic management of small firms in hostile and benign environments', *Strategic Management Journal*, vol. 10, no. 1, pp. 75–87.

Covin, JG & Slevin, DP 1990, 'New venture strategic posture, structure, and performance: an industry life cycle analysis', *Journal of Business Venturing*, vol. 5, no. 2, pp. 123–135.

Covin, JG & Slevin, DP 1998, 'Adherence to plans, risk taking, and environment as predictors of firm growth', *The Journal of High Technology Management Research*, vol. 9, no. 2, pp. 207–237.

Covin, JG & Wales, WJ 2011, 'The Measurement of Entrepreneurial Orientation', *Entrepreneurship Theory and Practice*, vol. 36, no. 4, pp. 677–702.

Covin, JG & Wales, WJ 2012, 'The measurement of entrepreneurial orientation', *Entrepreneurship Theory and Practice*, vol. 36, no. 4, pp. 677–702.

Covin, JG & Wales, WJ 2018, *Crafting high-impact entrepreneurial orientation research: some suggested guidelines*, Publisher, City, State.

Covin, JG, Green, KM & Slevin, DP 2006, 'Strategic process effects on the entrepreneurial orientation–sales growth rate relationship', *Entrepreneurship Theory and Practice*, vol. 30, no. 1, pp. 57–81.

Covin, JG, Prescott, JE & Slevin, DP 1990, 'The effects of technological sophistication on strategic profiles, structure and firm performance', *Journal of Management Studies*, vol. 27, no. 5, pp. 485–510.

Creswell, JW 2013, *Research design: qualitative, quantitative, and mixed methods approaches*, Sage Publications, City, State.

Creswell, JW, Plano Clark, VL, Gutmann, ML & Hanson, WE 2003, 'Advanced mixed methods research designs', in A Tashakkori & C. Teddlie (eds), *Handbook of mixed methods in social and behavioral research*, Sage Publications, Thousand Oaks, CA, pp. 209–240.

Cui, Y & Jiao, H 2011, 'Dynamic capabilities, strategic stakeholder alliances and sustainable competitive advantage: evidence from China', *Corporate Governance*, vol. 11, no. 4, pp. 386–397.

D'Aveni, RA, Dagnino, GB & Smith, KG 2010, 'The age of temporary advantage', *Strategic Management Journal*, vol. 31, no. 13, pp. 1371–1385.

Daft, RL 2007, *Understanding the theory and design of organisations*. Thomson South-Western, Mason, OH.

Damanpour, F & Schneider, M 2006, 'Phases of the adoption of innovation in organisations: effects of environment, organisation and top managers', *British Journal of Management*, vol. 17, no. 3, pp. 215–236.

Dangol, R & Kos, A 2014, 'Knightian uncertainty and risk: a basis for untangling dynamic capabilities from operational capabilities', *Journal of Strategy and Management*, vol. 7, no. 4, pp. 337–353.

Danneels, E 2002, 'The dynamics of product innovation and firm competences', *Strategic Management Journal*, vol. 23, no. 12, pp. 1095–1121.

Daugherty, PJ, Chen, H & Ferrin, BG 2011, 'Organisational structure and logistics service innovation', *The International Journal of Logistics Management*, vol. 22, no. 1, pp. 26-51.

Davenport, TH & Nohria, N 1994, 'Case management and the integration of labor', *Sloan Management Review*, vol. 35, no. 2, p. 11.

Davila, A, Foster, G & Oyon, D 2009, 'Accounting and control, entrepreneurship and innovation: venturing into new research opportunities', *European Accounting Review*, vol. 18, no. 2, pp. 281–311.

Davis, JL, Bell, RG, Payne, GT & Kreiser, PM 2010, 'Entrepreneurial orientation and firm performance: the moderating role of managerial power', *American Journal of Business*, vol. 25, no. 2, pp. 41–54.

Dawes, F & Haydock, W 1999, 'Leadership, personality and managerial style of small business managers' in *Small Business and Enterprise Development Conference 1999 Proceedings*, 1999, pp. 1-5.

de Toni, A & Nassimbeni, G 2003, 'Small and medium district enterprises and the new product development challenge: evidence from Italian eyewear district', *International Journal of Operations & Production Management*, vol. 23, no. 6, pp. 678–697.

Debruyne, M, Moenaertb, R, Griffinc, A, Hartd, S, Hultinke, EJ & Robben, H 2002, 'The impact of new product launch strategies on competitive reaction in industrial markets', *Journal of Product Innovation Management*, vol. 19, no. 2, pp. 159–170.

Deng, Z, Lev, B & Narin, F 2003, 'Science and technology as predictors of stock performance', In J Hand & B Lev (eds), *Intangible assets: measures, values and risks*, Oxford University Press, New York, NY, pp. 20-32.

Denrell, J, Fang, C & Winter, SG 2003, 'The economics of strategic opportunity', *Strategic Management Journal*, vol. 24, no. 10, pp. 977–990.

Dess, GG & Davis, PS 1984, 'Porter's (1980) generic strategies as determinants of strategic group membership and organisational performance', *Academy of Management Journal*, vol. 27, no. 3, pp. 467–488.

di Stefano, G, Peteraf, M & Verona, G 2010, 'Dynamic capabilities deconstructed: a bibliographic investigation into the origins, development, and future directions of the research domain', *Industrial and Corporate Change*, vol. 19, no. 4, pp. 1187–1204.

di Stefano, G, Peteraf, M & Verona, G 2014, 'The organisational drivetrain: a road to integration of dynamic capabilities research', *The Academy of Management Perspectives*, vol. 28, no. 4, pp. 307–327.

Diamantopoulos, A & Winklhofer, HM 2001, 'Index construction with formative indicators: an alternative to scale development', *Journal of Marketing Research*, vol. 38, no. 2, pp. 269–277.

Diamantopoulos, A 2006, 'The error term in formative measurement models: interpretation and modeling implications', *Journal of Modelling in Management*, vol. 1, no. 1, pp. 7-17.

Diamantopoulos, A, Riefler, P & Roth, KP 2008, 'Advancing formative measurement models', *Journal of Business Research*, vol. 61, no. 12, pp. 1203–1218.

Dibrell, C, Davis, PS & Craig, J 2008, 'Fueling innovation through information technology in SMEs', *Journal of Small Business Management*, vol. 46, no. 2, pp. 203–218.

Dickens, AK, Cummings, S & Daellenbach, US 2018, 'Which strategic practices enable or inhibit dynamic capabilities from emerging in similar firms?', in *Academy of Management 2018 Proceedings*, Briarcliff Manor, New York, NY, p. 12226.

Dixon, S, Meyer, K & Day, M 2014, 'Building dynamic capabilities of adaptation and innovation: a study of micro-foundations in a transition economy', *Long Range Planning*, vol. 47, no. 4, pp. 186–205.

Dowlatshahi, S & Taham, F 2009, 'The development of a conceptual framework for just-in-time implementation in SMEs', *Production Planning and Control*, vol. 20, no. 7, pp. 611–621.

Doyle, P & Wong, V 1998, 'Marketing and competitive performance: an empirical study', *European Journal of Marketing*, vol. 32, no. 5/6, pp. 514–535.

Drengner, J, Gaus, H & Jahn, S 2008, 'Does flow influence the brand image in event marketing?', *Journal of Advertising Research*, vol. 48, no. 1, pp. 138–147.

Drnevich, PL & Kriauciunas, AP 2011, 'Clarifying the conditions and limits of the contributions of ordinary and dynamic capabilities to relative firm performance', *Strategic Management Journal*, vol. 32, no. 3, pp. 254–279.

Drost, EA 2011, 'Validity and reliability in social science research', *Education Research and Perspectives*, vol. 38, no. 1, p. 105.

Drucker, P 1985, *Innovations and entrepreneurship*, Harper & Row, New York, NY.

Dunning, JH & Lundan, SM 2010, 'The institutional origins of dynamic capabilities in multinational enterprises', *Industrial and Corporate Change*, vol. 19, no. 4, pp. 1225-1246.

Dwyer, L & Edwards, D 2009, 'Tourism product and service innovation to avoid "strategic drift"', *International Journal of Tourism Research*, vol. 11, no. 4, pp. 321–335.

Easterby-Smith, M & Prieto, IM 2008, 'Dynamic capabilities and knowledge management: an integrative role for learning?', *British Journal of Management*, vol. 19, no. 3, pp. 235–249.

Easterby-Smith, M, Thorpe, R & Jackson, PR 2012, *Management research*, Sage, City, State.

Ebben, JJ & Johnson, AC 2005, 'Efficiency, flexibility, or both? Evidence linking strategy to performance in small firms', *Strategic Management Journal*, vol. 26, no. 13, pp. 1249–1259.

Edwards, JR & Bagozzi, RP 2000, 'On the nature and direction of relationships between constructs and measures', *Psychological Methods*, vol. 5, no. 2, p. 155.

Efrat, K, Hughes, P, Nemkova, E, Souchon, AL & Sy-Changco, J 2018, 'Leveraging of dynamic export capabilities for competitive advantage and performance consequences: evidence from China', *Journal of Business Research*, vol. 84, pp. 114–124.

Eisenhardt, KM & Martin, JA 2000, 'Dynamic capabilities: what are they?', *Strategic Management Journal*, vol. 21, nos 10–11, pp. 1105–1121.

Eisenhardt, KM & Tabrizi, BN 1995, 'Accelerating adaptive processes: product innovation in the global computer industry', *Administrative Science Quarterly*, vol. 40, no. 1, pp. 84–110.

Eisenhardt, KM 1989, 'Making fast strategic decisions in high-velocity environments', *Academy of Management Journal*, vol. 32, no. 3, pp. 543–576.

Elenkov, DS, Judge, W & Wright, P 2005, 'Strategic leadership and executive innovation influence: an international multi-cluster comparative study', *Strategic Management Journal*, vol. 26, no. 7, pp. 665–682.

Engdahl, RA, Keating, RJ & Aupperle, KE 2000, 'Strategy and structure: chicken or egg? Reconsideration of Chandler's paradigm for economic success', *Organisation Development Journal*, vol. 18, no. 4, p. 21.

Ernst, A 2003, *Comparison of qualitative and quantitative research*, GRIN Verlag, Munich, Germany.

Ernst, H & Teichert, T 1998, 'The R and D/marketing interface and single informant bias in NPD research: an illustration of a benchmarking case study', *Technovation*, vol. 18, no. 12, pp. 721–739.

European Commission 2005, *The new SME definition: user guide and model declaration*, European Commission Publication Office, City, State.

Fabrigar, LR & Wegener, DT 2012, *Exploratory factor analysis*, Oxford University Press, City, State.

Fainshmidt, S, Nair, A & Mallon, MR 2017, 'MNE performance during a crisis: an evolutionary perspective on the role of dynamic managerial capabilities and industry context', *International Business Review*, vol. 26, no. 6, pp. 1089-1099.

Fainshmidt, S, Wenger, L, Pezeshkan, A & Mallon, MR 2019, 'When do dynamic capabilities lead to competitive advantage? The importance of strategic fit', *Journal of Management Studies*, vol. 56, no. 4, pp. 758–787.

Falk, RF & Miller, NB 1992, *A primer for soft modeling*, University of Akron Press, City, State.

Fan, W & Yan, Z 2010, 'Factors affecting response rates of the web survey: a systematic review', *Computers in Human Behavior*, vol. 26, no. 2, pp. 132–139.

Fang, E & Zou, S 2009, 'Antecedents and consequences of marketing dynamic capabilities in international joint ventures', *Journal of International Business Studies*, vol. 40, pp. 742–761.

Fang, S-C, Tsai, F-S & Lin, JL 2007, 'Leveraging tenant-incubator social capital for organizational learning and performance in incubation programme', *International Small Business Journal: Researching Entrepreneurship*, vol. 28, no. 1, pp. 90–113.

Farjoun, M 2002, 'Towards an organic perspective on strategy', *Strategic Management Journal*, vol. 23, no. 7, pp. 561–594.

Faulker, O & Campbell, A 2006, *The Oxford handbook of strategy: a strategy overview and competitive strategy*, vol. 1, OUP, Oxford, UK.

Feinberg, SE & Gupta, AK 2004, 'Knowledge spillovers and the assignment of R&D responsibilities to foreign subsidiaries', *Strategic Management Journal*, vol. 25, nos 8–9, pp. 823–845.

Felin, T & Powell, TC 2016, 'Designing organisations for dynamic capabilities', *California Management Review*, vol. 58, no. 4, pp. 78–96.

Feltham, TS, Feltham, G & Barnett, JJ 2005, 'The Dependence of Family Businesses on a Single Decision-Maker*', *Journal of Small Business Management*, vol. 43, no. 1, pp. 1–15.

Feltham, TS, Feltham, G & Barnett, JJ 2005, 'The dependence of family businesses on a single decision-maker', *Journal of Small Business Management*, vol. 43, no. 1, pp. 1–15.

Ferdows, K & de Meyer, A 1990, 'Lasting improvements in manufacturing performance: in search of a new theory', *Journal of Operations Management*, vol. 9, no. 2, pp. 168–184.

Fernandes, C, Ferreira, JJ, Raposo, ML, Estevão, C, Peris-Ortiz, M & Rueda-Armengot, C 2017, 'The dynamic capabilities perspective of strategic management: a co-citation analysis', *Scientometrics*, vol. 112, no. 1, pp. 529–555.

Ferrier, WJ 2001, 'Navigating the competitive landscape: the drivers and consequences of competitive aggressiveness', *Academy of Management Journal*, vol. 44, no. 4, pp. 858–877.

Fink, A 2012, *How to conduct surveys: a step-by-step guide*, Sage Publications, City, State.

Fornell, C & Bookstein, FL 1982, 'Two structural equation models: LISREL and PLS applied to consumer exit-voice theory', *Journal of Marketing Research*, vol. 19, no. 4, pp. 440–452.

Fornell, C & Larcker, DF 1981, 'Evaluating structural equation models with unobservable variables and measurement error', *Journal of Marketing Research*, vol. 18, no. 1, pp. 39–50.

Foss, NJ & Mahoney, JT 2010, 'Exploring knowledge governance', *International Journal of Strategic Change Management*, vol. 2, nos 2–3, pp. 93–101.

Foss, NJ, Lyngsie, J & Zahra, SA 2013, 'The role of external knowledge sources and organisational design in the process of opportunity exploitation', *Strategic Management Journal*, vol. 34, no. 12, pp. 1453–1471.

Freshwater, D, Garcilazo, E, Latto, J, Pace, J, Simms, A, Ward, J & Wojan, T 2019, *Business development and the growth of rural SMEs*, OECD Regional Development Working Paper No. 2019/07, Publisher, City, State.

Fuentes, MMF, Montes, FJL & Fernández, LMM 2006, 'Total quality management, strategic orientation and organisational performance: the case of Spanish companies', *Total Quality Management & Business Excellence*, vol. 17, no. 3, pp. 303–323.

Fuller, CM, Simmering, MJ, Atinc, G, Atinc, Y & Babin, BJ 2016, 'Common methods variance detection in business research', *Journal of Business Research*, vol. 69, no. 8, pp. 3192–3198.

Galbraith, JR 2007, Designing complex organisations, Addison-Wesley.

Gassmann, O & Keupp, MM 2007, 'The competitive advantage of early and rapidly internationalising SMEs in the biotechnology industry: A knowledge-based view', *Journal of World Business*, vol. 42, no. 3, pp. 350–366.

Geiger, SW, Ritchie, WJ & Marlin, D 2006, 'Strategy/structure fit and firm performance', *Organisation Development Journal*, vol. 24, no. 2, p. 10.

Geller, A 1980, 'Matching people to business strategies', *Financial Executive*, vol. 48, no. 10, pp. 18–21.

Gërguri-Rashiti, S, Ramadani, V, Abazi-Alili, H, Dana, LP & Ratten, V 2017, 'ICT, innovation and firm performance: the transition economies context', *Thunderbird International Business Review*, vol. 59, no. 1, pp. 93–102.

Ghofar, A & Islam, M 2014, *Corporate governance and contingency theory: a structural equation modeling approach and accounting risk implications*, Springer, Berlin, Germany.

Gibcus, P & Kemp, RGM 2003, *Strategy and small firm performance*, report, EIM, Zoetemeer, Netherlands.

Golembiewski, T 2000, *Handbook of organisational behaviour*, 2nd edn, CRC Press, Boca Raton, FL.

Grando, A & Belvedere, V 2006, 'District's manufacturing performances: a comparison among large, small-to-medium-sized and district enterprises', *International Journal of Production Economics*, vol. 104, no. 1, pp. 85–99.

Grant, P & Perren, L 2002, 'Small business and entrepreneurial research: meta-theories, paradigms and prejudices', *International Small Business Journal*, vol. 20, no. 2, pp. 185–211.

Green, KM, Covin, JG & Slevin, DP 2008, 'Exploring the relationship between strategic reactiveness and entrepreneurial orientation: the role of structure–style fit', *Journal of Business Venturing*, vol. 23, no. 3, pp. 356–383.

Green, W & Cluley, R 2014, 'The field of radical innovation: making sense of organisational cultures and radical innovation', *Industrial Marketing Management*, vol. 43, no. 8, pp. 1343–1350.

Greenberg, J 2011, *Behavior in organisations*, 10th edn, Prentice Hall, Upper Saddle River, NJ.

Gregsov, C 1989, 'Exploring misfit with multiple contingencies', *Administrative Science Quarterly*, vol. 34, no. 3, pp. 431–454.

Griffith, DA & Harvey, MG 2001, 'A resource perspective of global dynamic capabilities', *Journal of International Business Studies*, vol. 32, no. 3, pp. 597–606.

Gruber, M, Heinemann, F, Brettel, M & Hungeling, S 2010, 'Configurations of resources and capabilities and their performance implications: an exploratory study on technology ventures', *Strategic Management Journal*, vol. 31, no. 12, pp. 1337–1356.

Gudergan, SP, Ringle, CM, Wende, S & Will, A 2008, 'Confirmatory tetrad analysis in PLS path modeling', *Journal of Business Research*, vol. 61, no. 12, pp. 1238–1249.

Gumusluoglu, L & Acur, N 2016, 'Fit among business strategy, strategy formality, and dynamic capability development in new product development', *European Management Review*, vol. 13, no. 2, pp. 107-123.

Gupta, AK & Govindarajan, V 2000, 'Knowledge flows within multinational corporations', *Strategic Management Journal*, vol. 21, no. 4, pp. 473–496.

Gupta, VK & Wales, WJ 2017, 'Assessing organisational performance within entrepreneurial orientation research: where have we been and where can we go from here?', *The Journal of Entrepreneurship*, vol. 26, no. 1, pp. 51–76.

Gürlek, M & Tuna, M 2018, 'Reinforcing competitive advantage through green organisational culture and green innovation', *The Service Industries Journal*, vol. 38, nos 7–8, pp. 467–491.

Hacklin, F & Wallnöfer, M 2012, 'The business model in the practice of strategic decision making: insights from a case study', *Management Decision*, vol. 50, no. 2, pp. 166–188.

Hair Jr, JF, Hult, GTM, Ringle, C & Sarstedt, M 2017, *A primer on partial least squares structural equation modeling (PLS–SEM)*, Sage Publications, City, State.

Hair Jr, JF, Sarstedt, M, Hopkins, L & Kuppelwieser, VG 2014, 'Partial least squares structural equation modeling (PLS–SEM): An emerging tool in business research', *European Business Review*, vol. 26, no. 2, pp. 106-121.

Hair, JF, Anderson, RE, Tatham, RL & Black WC 2010, *Multivariate data analysis*, Pearson, City, State.

Hair, JF, Risher, JJ, Sarstedt, M & Ringle, CM 2019, 'When to use and how to report the results of PLS–SEM', *European Business Review*, vol. 31, no. 1, pp. 2-24.

Hakikur, R 2007, *Developing successful ICT strategies: competitive advantages in a global knowledge-driven society*, IGI Global, London, UK.

Hamel, G & Prahalad, CK 1990, 'Corporate imagination and expeditionary marketing', *Harvard Business Review*, vol. 69, no. 4, pp. 81–92.

Hamel, G & Prasad, C 1994, 'Competing for the future.', *Harvard business review*, vol. 72, no. 4, pp. 122–128.

Hand, JRM 2003, 'The increasing returns-to-scale of intangibles', In J Hand & B Lev (eds), *Intangible assets: measures, values and risks*, Oxford University Press, New York, NY.

Hansson, J & Eriksson, H 2002, 'The impact of TQM on financial performance', *Measuring Business Excellence*, vol. 6, no. 4, pp. 44–54.

Hao, Q, Kasper, H & Muehlbacher, J 2012, 'How does organisational structure influence performance through learning and innovation in Austria and China', *Chinese Management Studies*, vol. 6, no. 1, pp. 36–52.

Harman, HH 1976, *Modern factor analysis*, University of Chicago Press, City, State.

Harter, DE, Krishnan, MS & Slaughter, SA 2000, 'Effects of process maturity on quality, cycle time, and effort in software product development', *Management Science*, vol. 46, no. 4, pp. 451–466.

Hashim, N, Raza, AB & Minai, M 2018, 'Relationship between entrepreneurial competencies and small firm performance: are dynamic capabilities the missing link?', *Academy of Strategic Management Journal*, vol. 17, no. 2, pp. 1–10.

Hayton, JC, Allen, DG & Scarpello, V 2004, 'Factor retention decisions in exploratory factor analysis: a tutorial on parallel analysis', *Organisational Research Methods*, vol. 7, no. 2, pp. 191–205.

Heck, RH 1998, 'Factor analysis: exploratory and confirmatory approaches', in E Editor (ed.), *Modern methods for business research*, Publisher, City, State, pp. 177–215.

Hedlund, G 1994, 'A model of knowledge management and the N-form corporation', *Strategic Management Journal*, vol. 15, no. S2, pp. 73–90.

Heimeriks, KH, Schijven, M & Gates, S 2012, 'Manifestations of higher-order routines: the underlying mechanisms of deliberate learning in the context of postacquisition integration', *Academy of Management Journal*, vol. 55, no. 3, pp. 703–726.

Hekkert, MP, Suurs, RA, Negro, SO, Kuhlmann, S & Smits, RE 2007, 'Functions of innovation systems: a new approach for analysing technological change', *Technological Forecasting and Social Change*, vol. 74, no. 4, pp. 413–432.

Helfat, CE & Peteraf, MA 2003, 'The Dynamic Resource-Based View: Capability Lifecycles', *SSRN Electronic Journal*.

Helfat, CE & Peteraf, MA 2009, 'Understanding dynamic capabilities: progress along a developmental path',

Helfat, CE & Winter, SG 2011, 'Untangling dynamic and operational capabilities: strategy for the (N) ever-changing world', *Strategic Management Journal*, vol. 32, no. 11, pp. 1243–1250.

Helfat, CE 1997, 'Know-how and asset complementarity and dynamic capability accumulation: the case of R&D', *Strategic Management Journal*, vol. 18, no. 5, pp. 339–360.

Helfat, CE 2007, 'Stylized facts, empirical research and theory development in management',

Helfat, CE, Finkelstein, S, Mitchell, W, Peteraf, M, Singh, H, Teece, D & Winter, S 2007, *Dynamic capabilities: understanding strategic change in organisations*, Blackwell, London, UK.

Henderson, R & Mitchell, W 1997, 'The interactions of organisational and competitive influences on strategy and performance', *Strategic Management Journal*, vol. 18, no. S1, pp. 5–13.

Hendricks, KB & Singhal, VR 1997, 'Does implementing an effective TQM program actually improve operating performance? Empirical evidence from firms that have won quality awards', *Management Science*, vol. 43, no. 9, pp. 1258–1274.

Henseler, J & Sarstedt, M 2013, 'Goodness-of-fit indices for partial least squares path modeling', *Computational Statistics*, vol. 28, no. 2, pp. 565–580.

Henseler, J, Hubona, G & Ray, PA 2015, 'Using PLS path modeling in new technology research: updated guidelines', *Industrial management & data systems*.

Henseler, J, Ringle, CM & Sarstedt, M 2012, 'Using partial least squares path modeling in advertising research: basic concepts and recent issues', in E Editor (ed.), *Handbook of research on international advertising*, Edward Elgar Publishing, City, State, pp. 252-276.

Henseler, J, Ringle, CM & Sinkovics, RR 2009, 'The use of partial least squares path modeling in international marketing', in E Editor (ed.), *New challenges to international marketing*, Emerald Group Publishing Limited, City, State, pp. 277--.320

Hernández-Linares, R, Kellermanns, FW & López-Fernández, MC 2020, 'Dynamic capabilities and SME performance: the moderating effect of market orientation', *Journal of Small Business Management*, vol. 59, no. 1, pp. 162-195.

Hernández-Linares, R, Sarkar, S & Cobo, MJ 2018, 'Inspecting the Achilles heel: a quantitative analysis of 50 years of family business definitions', *Scientometrics*, vol. 115, no. 2, pp. 929–951.

Hill, CWL & Jones, SL 2001, *Strategic management: an integrated pproach*, 5th edn, Houghton Mifflin, Boston, MA.

Hisrich, RD 1992, 'The need for marketing in entrepreneurship', *Journal of Business & Industrial Marketing*, vol. 7, no. 3, pp. 53-57.

Hitt, MA, Bierman, L, Shimizu, K & Kochhar, R 2001, 'Direct and moderating effects of human capital on strategy and performance in professional service firms: a resource-based perspective', *Academy of Management Journal*, vol. 44, no. 1, pp. 13–28.

Hodgkinson, GP & Healey, MP 2011, 'Psychological foundations of dynamic capabilities: reflexion and reflection in strategic management', *Strategic Management Journal*, vol. 32, no. 13, pp. 1500–1516.

Hoopes, DG & Madsen, TL 2008, 'A capability-based view of competitive heterogeneity', *Industrial and Corporate Change*, vol. 17, no. 3, pp. 393–426.

Horsky, D 1990, 'A diffusion model incorporating product benefits, price, income and information', *Marketing Science*, vol. 9, no. 4, pp. 342–365.

Hoskisson, RE, Hitt, MA, Wan, WP & Yiu, D 1999, 'Theory and research in strategic management: swings of a pendulum', *Journal of Management*, vol. 25, no. 3, pp. 417–456.

Hsu, LM & Field, R 2003, 'Interrater agreement measures: comments on Kappan, Cohen's Kappa, Scott's π, and Aickin's α', *Understanding Statistics*, vol. 2, no. 3, pp. 205–219.

Hu, LT, Bentler, PM & Kano, Y 1992, 'Can test statistics in covariance structure analysis be trusted?', *Psychological Bulletin*, vol. 112, no. 2, p. 351.

Hu, Q, Mason, R, Williams, SJ & Found, P 2015, 'Lean implementation within SMEs: a literature review', *Journal of Manufacturing Technology Management*, vol. 26, no. 7, pp. 980–1012.

Huarng, KH 2010, 'Essential research in technology management', *Journal of Business Research*, vol. 63, no. 5, pp. 451–453.

Hull, CE & Rothenberg, S 2008, 'Firm performance: the interactions of corporate social performance with innovation and industry differentiation', *Strategic Management Journal*, vol. 29, no. 7, pp. 781–789.

Hult, GTM & Ketchen, DJ 2001, 'Does market orientation matter? A test of the relationship between positional advantage and performance', *Strategic Management Journal*, vol. 22, no. 9, pp. 899–906.

Hult, GTM & Ketchen, DJ 2001, 'Does market orientation matter?: a test of the relationship between positional advantage and performance', *Strategic Management Journal*, vol. 22, no. 9, pp. 899–906.

Hunt, SD & Madhavaram, S 2019, 'Adaptive marketing capabilities, dynamic capabilities, and renewal competences: the "outside vs. inside" and "static vs. dynamic" controversies in strategy', *Industrial Marketing Management*, vol. 89, pp. 129-139.

Hunt, SD 2011, 'Developing successful theories in marketing: insights from resource advantage theory', *Academy of Marketing Science Review*, vol. 1, pp. 72–84.

Inan, GG & Bititci, US 2015, 'Understanding organisational capabilities and dynamic capabilities in the context of micro enterprises: a research agenda', *Procedia-Social and Behavioral Sciences*, vol. 210, pp. 310–319.

Ireland, RD, Hitt, MA & Sirmon, DG 2003, 'A model of strategic entrepreneurship: the construct and its dimensions', *Journal of Management*, vol. 29, no. 6, pp. 963–989.

Jansen, J, van den Bosch, FAJ, Volberda, HW 2006, 'Exploratory innovation, exploitative innovation, and performance: effects of organisational antecedents and environmental moderators', *Management Science*, vol. 52, no. 11, pp. 1661–1674.

Jantunen, A, Ellonen, HK & Johansson, A 2012, 'Beyond appearances–do dynamic capabilities of innovative firms actually differ?', *European Management Journal*, vol. 30, no. 2, pp. 141–155.

Jantunen, A, Puumalainen, K, Saarenketo, S & Kyläheiko, K 2005, 'Entrepreneurial orientation, dynamic capabilities and international performance', *Journal of International Entrepreneurship*, vol. 3, no. 3, pp. 223–243.

Jarvis, CB, MacKenzie, SB & Podsakoff, PM 2003, 'A critical review of construct indicators and measurement model misspecification in marketing and consumer research', *Journal of Consumer Research*, vol. 30, no. 2, pp. 199–218.

Jaworski, BJ & Kohli, AK 1993, 'Market orientation: antecedents and consequences', *Journal of Marketing*, vol. 57, no. 3, pp. 53–70.

Jensen, MC & Meckling, WH 1976, 'Theory of the Firm: Managerial Behavior, Agency Costs and Ownership Structure', *SSRN Electronic Journal*.

Jenssen, JI 2003, 'Innovation, capabilities and competitive advantage in Norwegian shipping', *Maritime Policy & Management*, vol. 30, no. 2, pp. 93–106.

Jha, NK 2008, *Research methodology*, Global Media, Chandigarh, India.

Jiao, H, Wei, J & Cui, Y 2010, 'An empirical study on paths to develop dynamic capabilities: from the perspectives of entrepreneurial orientation and organisational learning', *Frontiers of Literary Studies in China*, vol. 4, no. 1, pp. 47–72.

Jogaratnam, G & Ching-Yick Tse, E 2006, 'Entrepreneurial orientation and the structuring of organisations: performance evidence from the Asian hotel industry', *International Journal of Contemporary Hospitality Management*, vol. 18, no. 6, pp. 454–468.

Johnson, G 1992, 'Managing strategic change—strategy, culture and action', *Long Range Planning*, vol. 25, no. 1, pp. 28–36.

Johnson, G, Whittington, R, Scholes, K, Angwin, D & Regnér, P 2013, *Exploring strategy text & cases,* vol. 10, Pearson, City, State.

Jones, GR & Jones, GR 2010, Organisational theory, design, and change.

Jorgensen, B & Messner, M 2009, 'Management control in new product development: the dynamics of managing flexibility and efficiency', *Journal of Management Accounting Research*, vol. 21, no. 1, pp. 99–124.

Kaiser, HF 1958, 'The varimax criterion for analytic rotation in factor analysis', *Psychometrika*, vol. 23, no. 3, pp. 187–200.

Kale, P, Singh, H & Bell, J 2009, 'Relating well: building capabilities for sustaining alliance networks', in P Kleindorfer & Y Wind (eds), *The network challenge: strategies for managing the new interlinked enterprise*, Pearson Press, London, UK, pp. 343-356.

Kaplan, RS & Norton, DP 2001, 'Transforming the balanced scorecard from performance measurement to strategic management: part I', *Accounting Horizons*, vol. 15, no. 1, pp. 87–104.

Karim, S & Mitchell, W 2000, 'Path-dependent and path-breaking change: reconfiguring business resources following acquisitions in the US medical sector, 1978–1995', *Strategic Management Journal*, vol. 21, no. 10/11, pp. 1061–1081.

Karim, S 2006, 'Modularity in organisational structure: the reconfiguration of internally developed and acquired business units', *Strategic Management Journal*, vol. 27, no. 9, pp. 799–823.

Katzy, BR & Crowston, K 2008, 'Competency rallying for technical innovation—the case of the Virtuelle Fabrik', *Technovation*, vol. 28, no. 10, pp. 679–692.

Kawakami, T, MacLachlan, DL & Stringfellow, A 2012, 'New venture performance in China, Japan, and the United States: the impact of formalized market information processes', *Journal of Product Innovation Management*, vol. 29, no. 2, pp. 275–287.

Kemp, RGM & Verhoeven, WHJ 2002, Growth patterns of medium-sized, fast-growing firms.

Kessler, EH & Bierly, PE 2002, 'Is faster really better? An empirical test of the implications of innovation speed', *IEEE Transactions on Engineering Management*, vol. 49, no. 1, pp. 2–12.

Kessler, EH & Chakrabarti, AK 1996, 'Innovation speed: a conceptual model of context, antecedents, and outcomes', *Academy of Management Review*, vol. 21, no. 4, pp. 1143–1191.

Kessler, SR, Nixon, AE & Nord, WR 2017, 'Examining organic and mechanistic structures: do we know as much as we thought?', *International Journal of Management Reviews*, vol. 19, no. 4, pp. 531–555.

Keupp, MM, Palmié, M & Gassmann, O 2012, 'The strategic management of innovation: a systematic review and paths for future research', *International Journal of Management Reviews*, vol. 14, no. 4, pp. 367–390.

Khandawalla, P 1977, 'The design of organizations'.

Khandwalla, PN 1977, *The design of organisations*, Publisher, City, State.

Kim, KK & Umanath, NS 1992, 'Structure and perceived effectiveness of software development subunits: a task contingency analysis', *Journal of Management Information Systems*, vol. 9, no. 3, pp. 157–181.

Kiril, T 2014, *Handbook of research on strategic management in small and medium enterprises*, IGI Global, London, UK.

Kirzner, IM 1997, 'Entrepreneurial discovery and the competitive market process: an Austrian approach', *Journal of Economic Literature*, vol. 35, no. 1, pp. 60–85.

Kleinschmidt, EJ, de Brentani, U & Salomo, S 2007, 'Performance of global new product development programs: a resource-based view', *Journal of Product Innovation Management*, vol. 24, no, 5, pp. 419–441.

Kline, RB 2005, *Principles and practice of structural equation modeling*, Guilford Publications, City, State.

Knights, D & Willmott, H 2007, *Introducing organisational behaviour and management*, Cengage Learning, Stamford, CT.

Kogut, B & Zander, U 1993, 'Knowledge of the firm and the evolutionary theory of the multinational corporation', *Journal of International Business Studies*, vol. 24, no. 4, pp. 625–645.

Kor, YY & Mahoney, JT 2004, 'Edith Penrose's (1959) contributions to the resource-based view of strategic management', *Journal of Management Studies*, vol. 41, no. 1, pp. 183–191.

Kor, YY & Mesko, A 2013, 'Dynamic managerial capabilities: configuration and orchestration of top executives' capabilities and the firm's dominant logic', *Strategic Management Journal*, vol. 34, no. 2, pp. 233–244.

Koufteros & Vonderembse 2003, 'The impact of organizational structure on time-based manufacturing and plant performance', *Journal of Operations Management*, vol. 21, no. 3, pp. 281–306.

Kozlenkova, IV, Samaha, SA & Palmatier, RW 2014, 'Resource-based theory in marketing', *Journal of the Academy of Marketing Science*, vol. 42, no. 1, pp. 1–21.

Kraft, PS & Bausch, A 2016, 'How do transformational leaders promote exploratory and exploitative innovation? Examining the black box through MASEM', *Journal of Product Innovation Management*, vol. 33, no. 6, pp. 687–707.

Kreiser, PM & Davis, J 2010, 'Entrepreneurial orientation and firm performance: the unique impact of innovativeness, proactiveness, and risk-taking', *Journal of Small Business & Entrepreneurship*, vol. 23, no. 1, pp. 39–51.

Kreiser, PM & Davis, J 2010, 'Entrepreneurial orientation and firm performance: the unique impact of innovativeness, proactiveness, and risk-taking', *Journal of Small Business & Entrepreneurship*, vol. 23, no. 1, pp. 39–51.

Kreiser, PM, Marino, LD, Dickson, P & Weaver, KM 2010, 'Cultural influences on entrepreneurial orientation: the impact of national culture on risk taking and proactiveness in SMEs', *Entrepreneurship Theory and Practice*, vol. 34, no. 5, pp. 959–983.

Kumar, V & Pansari, A 2016, 'Competitive advantage through engagement', *Journal of Marketing Research*, vol. 53, no. 4, pp. 497–514.

Kuuluvainen, A 2012, 'How to concretize dynamic capabilities? Theory and examples', *Journal of Strategy and Management*, vol. 5, no. 4, pp. 381–392.

Laamanen, T & Keil, T 2008, 'Performance of serial acquirers: toward an acquisition program perspective', *Strategic Management Journal*, vol. 29, no. 6, pp. 663–672.

Lakhal, L 2009, 'Impact of quality on competitive advantage and organisational performance', *Journal of the Operational Research Society*, vol. 60, no. 5, pp. 637–645.

Lampel, J, Shamsie, J & Shapira, Z 2009, 'Experiencing the improbable: rare events and organisational learning', *Organisation Science*, vol. 20, no. 5, pp. 835–845.

Lavrakas, J 2008, *Encyclopedia of survey research methods*, Sage Publications, London, UK.

Lawson, B & Samson, D 2001, 'Developing innovation capability in organisations: a dynamic capabilities approach', *International Journal of Innovation Management*, vol. 5, no. 3, pp. 377–400.

Lazonick, W 1993, 'Learning and the dynamics of international competitive advantage', in E Editor (ed.), *Learning and technological change*, Palgrave Macmillan, London, UK.

Lee, DY 1997, 'The impact of poor performance on risk-taking attitudes: a longitudinal study with a PLS causal modeling approach', *Decision Sciences*, vol. 28, no. 1, pp. 59–80.

Lee, H & Kelley, D 2008, 'Building dynamic capabilities for innovation: an exploratory study of key management practices', *R&D Management*, vol. 38, no. 2, pp. 155–168.

Leitner, S 2001, *Handbook of public quality management*, CRC Press, Boca Raton, FL.

Levy, PS & Lemeshow, S 2013, *Sampling of populations: methods and applications*, John Wiley & Sons, New York, NY.

Lew, YK & Sinkovics, RR 2013, 'Crossing borders and industry sectors: behavioral governance in strategic alliances and product innovation for competitive advantage', *Long Range Planning*, vol. 46, no. 1, pp. 13–38.

Li, F 1997, 'From compromise to harmony: organisational redesign through information and communication technologies', *International Journal of Information Management*, vol. 17, no. 6, pp. 451–64.

Li, J & Kozhikode, RK 2009, 'Developing new innovation models: shifts in the innovation landscapes in emerging economies and implications for global R&D management', *Journal of International Management*, vol. 15, no. 3, pp. 328–339.

Li, S., Ragu-Nathan, B., Ragu-Nathan, T.S. and Rao, S.S 2006, 'The impact of supply chain management practices on competitive advantage and organizational performance', *Omega*, vol. 34, no. 2, pp.107-124.

Li, Y, Zhao, Y, Tan, J & Liu, Y 2008, 'Moderating effects of entrepreneurial orientation on market orientation-performance linkage: evidence from Chinese small firms', *Journal of Small Business Management*, vol. 46, no. 1, pp. 113–133.

Liao, J, Welsch, H & Stoica, M 2003, 'Organisational absorptive capacity and responsiveness: an empirical investigation of growth–oriented SMEs', *Entrepreneurship Theory and Practice*, vol. 28, no. 1, pp. 63–86.

Lichtenthaler, U & Muethel, M 2012, 'Retracted: the impact of family involvement on dynamic innovation capabilities: evidence from German manufacturing firms', *Entrepreneurship Theory and Practice*, vol. 36, no. 6, pp. 1235–1253.

Lin, C & Tsai, H-L 2016, 'Achieving a firm's competitive advantage through dynamic capability', in D Teece and Asta Pundziene (ed.), *Baltic Journal of Management*, vol. 11, no. 3, pp. 260–285.

Lin, C & Tsai, HL 2016, 'Achieving a firm's competitive advantage through dynamic capability', *Baltic Journal of Management*, vol. 11, no. 3, pp. 260-285.

Lin, HF, Su, JQ & Higgins, A 2016, 'How dynamic capabilities affect adoption of management innovations', *Journal of Business Research*, vol. 69, no. 2, pp. 862876.

Lin, Y & Wu, LY 2012, 'Exploring the role of dynamic capabilities in firm performance under the resource-based view framework', *Journal of Business Research*, vol. 67, no. 3, pp. 407–413.

Lindell, MK & Whitney, DJ 2001, 'Accounting for common method variance in cross-sectional research designs', *Journal of Applied Psychology*, vol. 86, no. 1, p. 114.

Liu, H, Ke, W, Wei, KK & Hua, Z 2013, 'The impact of IT capabilities on firm performance: the mediating roles of absorptive capacity and supply chain agility', *Decision Support Systems*, vol. 54, no. 3, pp. 1452–1462.

Lockett, A & Thompson, S 2004, 'Edith Penrose's contributions to the resource-based view: an alternative perspective', *Journal of Management Studies*, vol. 41, no. 1, pp. 193–203.

Lockett, A & Wright, M 2005, 'Resources, capabilities, risk capital and the creation of university spin-out companies', *Research Policy*, vol. 34, no. 7, pp. 1043–1057.

Lopez-Valeiras, E, Gonzalez-Sanchez, MB & Gomez-Conde, J 2016, 'The effects of the interactive use of management control systems on process and organisational innovation', *Review of Managerial Science*, vol. 10, no. 3, pp. 487–510.

Lowry, PB & Gaskin, J 2014, 'Partial least squares (PLS) structural equation modeling (SEM) for building and testing behavioral causal theory: when to choose it and how to use it', *IEEE Transactions on Professional Communication*, vol. 57, no. 2, pp. 123–146.

Lumpkin, GT & Dess, GG 1996, 'Clarifying the entrepreneurial orientation construct and linking it to performance', *Academy of Management Review*, vol. 21, no. 1, pp. 135–172.

Lumpkin, GT & Dess, GG 2001, 'Linking two dimensions of entrepreneurial orientation to firm performance: the moderating role of environment and industry life cycle', *Journal of Business Venturing*, vol. 16, no. 5, pp. 429–451.

Luoma, J, Ruutu, S, King, AW & Tikkanen, H 2016, 'Time delays, competitive interdependence, and firm performance', *Strategic Management Journal*, vol. 38, no. 3, pp. 506–525.

Luton, LS 2010, *Qualitative research approaches for public administration*, M. E. Sharpe, Armonk, NY.

MacKenzie, SB, Podsakoff, PM & Jarvis, CB 2005, 'The problem of measurement model misspecification in behavioral and organisational research and some recommended solutions', *Journal of Applied Psychology*, vol. 90, no. 4, p. 710.

MacMillan, I, McCaffery, ML & van Wijk, G 1985, 'Competitors' responses to easily imitated new products—exploring commercial banking product introductions', *Strategic Management Journal*, vol. 6, no. 1, pp. 75–86.

Mahringer, CA & Renzl, B 2018, 'Entrepreneurial initiatives as a microfoundation of dynamic capabilities', *Journal of Accounting & Organisational Change*, vol. 14, no. 1, pp. 61-79.

Makadok, R 2001, 'Toward a synthesis of the resource-based and dynamic-capability views of rent creation', *Strategic Management Journal*, vol. 22, no. 5, pp. 387–401.

Makkonen, H, Pohjola, M, Olkkonen, R & Koponen, A 2014, 'Dynamic capabilities and firm performance in a financial crisis', *Journal of Business Research*, vol. 67, no. 1, pp. 2707–2719.

Malhotra, N & Birks, D 2007, *Marketing research: an applied approach,* 3rd edn, Pearson Education, City, State.

Mallen, F, Chiva, R, Alegre, J & Guinot, J 2016, 'Organicity and performance in excellent HRM organisations: the importance of organisational learning capability', *Review of Managerial Science*, vol. 10, no. 3, pp. 463–485.

Markin, E, Gupta, VK, Pierce, CA & Covin, J 2018, 'Entrepreneurial orientation, firm-performance, and the role of national culture', in *Academy of Management 2018 Proceedings*, Briarcliff Manor, New York, NY, p. 11247.

Martínez-Jurado, PJ & Moyano-Fuentes, J 2014, 'Lean management, supply chain management and sustainability: a literature review', *Journal of Cleaner Production*, vol. 85, pp. 134–150.

Martínez-León, IM & Martínez-García, JA 2011, 'The influence of organisational structure on organisational learning', *International Journal of Manpower*, vol. 32, nos 5–6, pp. 537–566.

Matthyssens, P, Pauwels, P & Vandenbempt, K 2005, 'Strategic flexibility, rigidity and barriers to the development of absorptive capacity in business markets: themes and research perspectives', *Industrial Marketing Management*, vol. 34, no. 6, pp. 547–554.

Maury, B 2018, 'Sustainable competitive advantage and profitability persistence: sources versus outcomes for assessing advantage', *Journal of Business Research*, vol. 84, pp. 100–113.

McKelvie, A & Davidsson, P 2009, 'From resource base to dynamic capabilities: an investigation of new firms', *British Journal of Management*, vol. 20, pp. S63–S80.

McNamara, G, Aime, F & Vaaler, PM 2005, 'Is performance driven by industry-or firm-specific factors? A response to Hawawini, Subramanian, and Verdin', *Strategic Management Journal*, vol. 26, no. 11, pp. 1075–1081.

Meek, H & Meek, R 2003, *Strategic marketing management: planning and control, 2003–2004*, Routledge, London, UK.

Mehrabi, H, Coviello, N & Ranaweera, C 2019, 'Ambidextrous marketing capabilities and performance: how and when entrepreneurial orientation makes a difference', *Industrial Marketing Management*, vol. 77, pp. 129–142.

Meijaard, J, Brand, MJ & Mosselman, M 2005, 'Organisational structure and performance in Dutch small firms', *Small Business Economics*, vol. 25, no. 1, pp. 83–96.

Memili, E, Fang, H, Chrisman, JJ & de Massis, A 2015, 'The impact of small-and medium-sized family firms on economic growth', *Small Business Economics*, vol. 45, no. 4, pp. 771–785.

Menguc, B & Auh, S 2010, 'Development and return on execution of product innovation capabilities: the role of organisational structure', *Industrial Marketing Management*, vol. 39, no. 5, pp. 820–831.

Miles, MP & Arnold, DR 1991, 'The relationship between marketing orientation and entrepreneurial orientation', *Entrepreneurship Theory and Practice*, vol. 15, no. 4, pp. 49–65.

Miles, MP, Covin, JG & Heeley, MB 2000, 'The relationship between environmental dynamism and small firm structure, strategy, and performance', *Journal of Marketing Theory and Practice*, vol. 8, no. 2, pp. 63–78.

Miller, CC, Washburn, NT & Glick, WH 2005, 'The myth of firm performance', in *Annual Meeting of the Academy of Management*.

Miller, CC, Washburn, NT & Glick, WH 2013, 'PERSPECTIVE—The Myth of Firm Performance', *Organization Science*, vol. 24, no. 3, pp. 948–964.

Miller, D & Chen, MJ 1994, 'Sources and consequences of competitive inertia: a study of the US airline industry', *Administrative Science Quarterly*, vol. 39, no. 1, pp. 1–23.

Miller, D & Friesen, PH 1982, 'Innovation in conservative and entrepreneurial firms: two models of strategic momentum', *Strategic Management Journal*, vol. 3, no. 1, pp. 1–25.

Miller, D 1983, 'The correlates of entrepreneurship in three types of firms', *Management Science*, vol. 29, no. 7, pp. 770–791.

Miller, D 1986, 'Configurations of strategy and structure: towards a synthesis', *Strategic Management Journal*, vol. 7, no. 3, pp. 233–249.

Miller, KD & Tsang, EW 2011, 'Testing management theories: critical realist philosophy and research methods', *Strategic Management Journal*, vol. 32, no. 2, pp. 139–158.

Minoja, M, Zollo, M & Coda, V 2010, 'Stakeholder cohesion, innovation, and competitive advantage', *Corporate Governance*, vol. 10, no. 4, pp. 395–405.

Mintzberg, H 1979, *The structuring of organisations*, Prentice Hall, Englewood Cliffs, NJ.

Mintzberg, H 1992, *Structure in fives: designing effective organisations*, Prentice Hall, Upper Saddle River, NJ.

Moliterno, TP & Wiersema, MF 2007, 'Firm performance, rent appropriation, and the strategic resource divestment capability', *Strategic Management Journal*, vol. 28, no. 11, pp. 1065–1087.

Morin, E 1990, 'From the concept of system to the paradigm of complexity', *Journal of Social and Evolutionary Systems*, vol. 15, no. 4, pp. 371–385.

Mullins, JL 1999, *Management and organisational behaviour*, Pearson Education, London, UK.

Mundy, J 2010, 'Creating dynamic tensions through a balanced use of management control systems', *Accounting, Organisations and Society*, vol. 35, no. 5, pp. 499–523.

Murphy, GB, Trailer, JW & Hill, RC 1996, 'Measuring performance in entrepreneurship research', *Journal of Business Research*, vol. 36, no. 1, pp. 15–23.

Nahm, A, Vonderembse, M & Koufteros, X 2003, 'The impact of organisational structure on time-based manufacturing and plant performance', *Journal of Operations Management*, vol. 21, no. 3, pp. 281–306.

Nair, A & Sminia, H 2019, 'Confronting digital disruption: how organisational dynamics shape response strategies in incumbent firms', paper presented at the 35th European Group of Organisation Studies Colloquium, Edinburgh, United Kingdom, 06 July, pp 1-16.

Najmaei, A 2010, 'Researching organisational (dynamic) capabilities: an introduction to epistemology and ontology', paper presented at the ACSPRI Conference.

Nakku, VB, Agbola, FW, Miles, MP & Mahmood, A 2020, 'The interrelationship between SME government support programs, entrepreneurial orientation, and performance: a developing economy perspective', *Journal of Small Business Management*, vol. 58, no. 1, pp. 2–31.

Nandakumar, MK, Ghobadian, A & O'Regan, N 2010, 'Business-level strategy and performance: the moderating effects of environment and structure', *Management Decision*, vol. 48, no. 6, pp. 907–939.

Narasimhan, O, Rajiv, S & Dutta, S 2006, 'Absorptive capacity in high-technology markets: the competitive advantage of the haves', *Marketing Science*, vol. 25, no. 5, pp. 510–524.

Narayanan, VK, Colwell, K & Douglas, FL 2009, 'Building organisational and scientific platforms in the pharmaceutical industry: a process perspective on the development of dynamic capabilities', *British Journal of Management*, vol. 20, no. S1, pp. S25–S40.

Ndubisi, N 2013, *Enterprise development in SMEs and entrepreneurial firms: dynamic processes*, IGI Global, London, UK.

Nelson, R & Winter, S 1982, *An evolutionary theory of economic change*, Harvard University Press, Cambridge, MA.

Noda, T & Collis, DJ 2001, 'The evolution of intraindustry firm heterogeneity: insights from a process study', *Academy of Management Journal*, vol. 44, no. 4, pp. 897–925.

Noorderhaven, N & Harzing, AW 2009, 'Knowledge-sharing and social interaction within MNEs', *Journal of International Business Studies*, vol. 40, no. 5, pp. 719–741.

Nyadzayo, MW, Casidy, R & Thaichon, P 2020, 'B2B purchase engagement: examining the key drivers and outcomes in professional services', *Industrial Marketing Management*, vol. 85, pp. 197–208.

O'Connor, BP 2000, 'SPSS and SAS programs for determining the number of components using parallel analysis and Velicer's MAP test', *Behavior Research Methods, Instruments, & Computers*, vol. 32, no. 3, pp. 396–402.

O'Reilly, CA & Tushman, ML 2008, 'Ambidexterity as a dynamic capability: resolving the innovator's dilemma', *Research in Organisational Behavior*, vol. 28, pp. 185–206.

OECD 2005, *Glossary of Statistical Terms: Small and Medium-Sized Enterprises (SMEs)*, OECD, viewed 13 December 2017, <https://stats.oecd.org/glossary/detail.asp?ID=3123>.

Okhuysen, GA & Eisenhardt, KM 2002, 'Integrating knowledge in groups: how formal interventions enable flexibility', *Organisation Science*, vol. 13, no. 4, pp. 370–386.

Olson, EM, Walker Jr, OC & Ruekert, RW 1995, 'Organizing for effective new product development: the moderating role of product innovativeness', *The Journal of Marketing*, vol. 59, pp. 48–62.

Ouchi, WG 1979, 'A conceptual framework for the design of organisational control mechanisms', in E Editor (ed.), *Readings in accounting for management control*, Springer US, City, State, pp. 63–82.

Pallant, J 2012, *SPSS survival manual*, McGraw-Hill Education, City, UK.

Palmié, M, Keupp, MM & Gassmann, O 2015, 'Pull the right levers: creating internationally "useful" subsidiary competence by organisational architecture', *Long Range Planning*, vol. 47 nos 1–2, pp. 32–48.

Palmié, M, Lingens, B & Gassmann, O 2016, 'Towards an attention-based view of technology decisions', *R&D Management*, vol. 46, no. 4, pp. 781–796.

Pandza, K & Thorpe, R 2009, 'Creative search and strategic sense-making: missing dimensions in the concept of dynamic capabilities', *British Journal of Management*, vol. 20, no. S1, pp. S118–S131.

Parida, V, Oghazi, P & Cedergren, S 2016, 'A study of how ICT capabilities can influence dynamic capabilities', *Journal of Enterprise Information Management*, vol. 29, no. 2, pp. 179–201.

Parida, V, Westerberg, M & Frishammar, J 2012, 'Inbound open innovation activities in high-tech SMEs: the impact on innovation performance', *Journal of Small Business Management*, vol. 50, no. 2, pp. 283–309.

Parnell, JA 2013, 'Uncertainty, generic strategy, strategic clarity, and performance of retail SMEs in Peru, Argentina, and the United States', *Journal of Small Business Management*, vol. 51, no. 2, pp. 215–234.

Parthasarthy, R & Sethi, SP 1993, 'Relating strategy and structure to flexible automation: a test of fit and performance implications', *Strategic Management Journal*, vol. 14, no. 7, pp. 529–549.

Pearce, JA, Fritz, DA & Davis, PS 2010, 'Entrepreneurial orientation and the performance of religious congregations as predicted by rational choice theory', *Entrepreneurship Theory and Practice*, vol. 34, no.1, pp. 219–248.

Pearson, S & Benameur, A 2010, 'Privacy, security and trust issues arising from cloud computing', in *Cloud Computing Technology and Science (CloudCom), 2010 IEEE Second International Conference on*, City, State, DD Month, pp. 693–702.

Pelham, AM 2000, 'Market orientation and other potential influences on performance in small and medium-sized manufacturing firms', *Journal of Small Business Management*, vol. 38, no. 1, pp. 48–67.

Penrose, E 1959, *The theory of the growth of the firm*, Wiley, New York, NY.

Pentland, BT & Rueter, HH 1994, 'Organisational routines as grammars of action', *Administrative Science Quarterly*, vol. 39, pp. 484–510.

Pertusa-Ortega, EM, Claver-Cortés, E & Molina-Azorín, JF 2008, 'Strategy, structure, environment and performance in Spanish firms', *EuroMed Journal of Business*, vol. 3, no. 2, pp. 223–239.

Pertusa-Ortega, EM, Zaragoza-Sáez, P & Claver-Cortés, E 2008, 'Can formalization, complexity, and centralization influence knowledge performance?', *Journal of Business Research*, vol. 63, no. 3, pp. 310–320.

Peteraf, M, di Stefano, G & Verona, G 2013, 'The elephant in the room of dynamic capabilities: bringing two diverging conversations together', *Strategic Management Journal*, vol. 34, no. 12, pp. 1389–1410.

Peteraf, MA 1993, 'The cornerstones of competitive advantage: a resource-based view', *Strategic Management Journal*, vol. 14, no. 3, pp. 179–191.

Piening, P & Salge, O 2014, 'Understanding the antecedents, contingencies, and performance implications of process innovation: a dynamic capabilities perspective', *Journal of Product Innovation and Management*, vol. 32, no. 1, pp. 80–97.

Piercy, N & Evans, M 2014, *Managing marketing information (RLE marketing)*, Routledge, London, UK.

Pitelis, CN 2007, 'A behavioral resource-based view of the firm: the synergy of Cyert and March (1963) and Penrose (1959)', *Organisation Science*, vol. 18, no. 3, pp. 478–490.

Podsakoff, PM, MacKenzie, SB, Lee, JY & Podsakoff, NP 2003, 'Common method biases in behavioral research: a critical review of the literature and recommended remedies', *Journal of Applied Psychology*, vol. 88, no. 5, p. 879.

Porter, ME 1980, *Competitive strategy—techniques for analysing industries and competitors*, Free Press, New York, NY.

Porter, ME 1985, *Competitive advantage: creating and sustaining superior performance*, Free Press, New York, NY.

Porter, ME 1990, *The competitive advantage of nations*, Publisher, City, State.

Powell, TC 2001, 'Competitive advantage: logical and philosophical considerations', *Strategic Management Journal*, vol. 22, no. 9, pp. 875–888.

Prahalad, CK & Bettis, RA 1986, 'The dominant logic: a new linkage between diversity and performance', *Strategic Management Journal*, vol. 7, no. 6, pp. 485–501.

Prahalad, CK & Hamel, G 1990, 'The core competence of the corporation', *Harvard Business Review*, vol. 68, no. 3, pp. 79–91.

Prange, C & Verdier, S 2011, 'Dynamic capabilities, internationalization processes and performance', *Journal of World Business*, vol. 46, no. 4, pp. 126–133.

Pratono, AH 2016, 'Strategic orientation and information technological turbulence: contingency perspective in SMEs', *Business Process Management Journal*, vol. 22, no. 6, pp. 1–15.

Priem, RL & Butler, JE 2001, 'Is the resource-based "view" a useful perspective for strategic management research?', *Academy of Management Review*, vol. 26, no. 1, pp. 22–40.

Ramezan, M 2011, 'Intellectual capital and organisational organic structure in knowledge society: how are these concepts related?', *International Journal of Information Management*, vol. 31, no. 1, pp. 88–95.

Randhawa, K, Wilden, R & Gudergan, S 2020, 'How to innovate toward an ambidextrous business model? The role of dynamic capabilities and market orientation', *Journal of Business Research*, vol. 130, pp. 618-634.

Reichheld, FF & Earl Sasser, JW 1990, 'Zero defections. Quality comes to services', *Harvard Business Review*, vol. 68, no. 5, pp. 105–111.

Reijonen, H, Hirvonen, S, Nagy, G, Laukkanen, T & Gabrielsson, M 2015, 'The impact of entrepreneurial orientation on B2B branding and business growth in emerging markets', *Industrial Marketing Management*, vol. 51, pp. 35–46.

Reitsperger, WD, Daniel, SJ, Tallman, SB & Chismar, WG 1993, 'Product quality and cost leadership: compatible strategies?', *Management International Review*, vol. 33, pp. 7–21.

Reuter, C, Foerstl, KAI, Hartmann, EVI & Blome, C 2010, 'Sustainable global supplier management: the role of dynamic capabilities in achieving competitive advantage', *Journal of Supply Chain Management*, vol. 46, no. 2, pp. 45–63.

Rhodes, C 2019, *Business statistics*, briefing paper no. 06512, House of Commons Library, UK Parliament, viewed DD Month YYYY, <https://researchbriefings.files.parliament.uk/documents/SN06152/SN06152.pdf>.

Richard, OC, Barnett, T, Dwyer, S & Chadwick, K 2004, 'Cultural diversity in management, firm performance, and the moderating role of entrepreneurial orientation dimensions', *Academy of Management Journal*, vol. 47, no. 2, pp. 255–266.

Richard, OC, Wu, P & Chadwick, K 2009, 'The impact of entrepreneurial orientation on firm performance: the role of CEO position tenure and industry tenure', *The International Journal of Human Resource Management*, vol. 20, no. 5, pp. 1078–1095.

Rindfleisch, A & Moorman, C 2001, 'The acquisition and utilization of information in new product alliances: a strength-of-ties perspective', *Journal of Marketing*, vol. 65, no. 2, pp. 1–18.

Ringle, CM, Wende, S & Becker, JM 2015, 'SmartPLS 3', software, SmartPLS GmbH, Boenningstedt, Germany, http://www.smartpls.com.

Ringov, D 2017, 'Dynamic capabilities and firm performance', *Long Range Planning*, vol. 50, no. 5, pp. 653-664.

Rivard, S, Raymond, L & Verreault, D 2006, 'Resource-based view and competitive strategy: an integrated model of the contribution of information technology to firm performance', *The Journal of Strategic Information Systems*, vol. 15, no. 1, pp. 29–50.

Robins, JA, Tallman, S & Fladmoe-Lindquist, K 2002, 'Autonomy and dependence of international cooperative ventures: an exploration of the strategic performance of US ventures in Mexico', *Strategic Management Journal*, vol. 23, no. 10, pp. 881–901.

Rodríguez-Pinto, J, Carbonell, P & Rodríguez-Escudero, AI 2011, 'Speed or quality? How the order of market entry influences the relationship between market orientation and new product performance', *International Journal of Research in Marketing*, vol. 28, no. 2, pp. 145–154.

Romelaer, P & Beddi, H 2015, 'Strategy and structure in international multi-business groups: looking beyond global integration—local responsiveness', *International Studies of Management & Organisation*, vol. 45, no. 4, pp. 359–378.

Romme, AGL, Zollo, M & Berends, P 2010, 'Dynamic capabilities, deliberate learning and environmental dynamism: a simulation model', *Industrial and Corporate Change*, vol. 19, no. 4, pp. 1271–1299.

Roper, S & Hart, M 2013, *Supporting sustained growth among SMEs—policy models and guidelines*, ERC white paper no. 7, pp. 1–68.

Roper, S 1999, 'Modelling small business growth and profitability', *Small Business Economics*, vol. 13, no. 3, pp. 235–252.

Rosenbusch, N, Rauch, A & Bausch, A 2013, 'The mediating role of entrepreneurial orientation in the task environment–performance relationship: a meta-analysis', *Journal of Management*, vol. 39, no. 3, pp. 633–659.

Rossiter, JR 2002, 'The C-OAR-SE procedure for scale development in marketing', *International Journal of Research in Marketing*, vol. 19, no. 4, pp. 305–335.

Rothaermel, FT & Hill, CW 2005, 'Technological discontinuities and complementary assets: a longitudinal study of industry and firm performance', *Organization Science*, vol. 16, no. 1, pp. 52–70.

Rumelt, RP 1991, 'How much does industry matter?', *Strategic Management Journal*, vol. 12, no. 3, pp. 167–185.

Russell, RD & Russell, CJ 1992, 'An examination of the effects of organisational norms, organisational structure, and environmental uncertainty on entrepreneurial strategy', *Journal of Management*, vol. 18, no. 4, pp. 639–656.

Sachdeva, JK 2009, *Business research methodology*, Global Media, Mumbai, India.

Sahid, S & Hamid, SA 2019, 'How to strategize SMEs capabilities via entrepreneurial marketing approaches', *Academy of Marketing Studies Journal*, vol. 23, no. 1, pp. 1–5.

Salvato, C & Vassolo, R 2018, 'The sources of dynamism in dynamic capabilities', *Strategic Management Journal*, vol. 39, no. 6, pp. 1728–1752.

Sambamurthy, V & Chin, WW 1994, 'The effects of group attitudes toward alternative GDSS designs on the decision-making performance of computer-supported groups', *Decision Sciences*, vol. 25, no. 2, pp. 215–241.

Santhanam, R & Hartono, E 2003, 'Issues in linking information technology capability to firm performance', *MIS Quarterly*, vol. 27, no. 1, pp. 125–153.

Sattler, H, Völckner, F, Riediger, C & Ringle, CM 2010, 'The impact of brand extension success drivers on brand extension price'

Saunders, M, Lewis, P, Thornhill, A 2012, *Research methods for business students*, Pearson Education Limited, Essex, UK.

Sawers, JL, Pretorius, MW & Oerlemans, LA 2008, 'Safeguarding SMEs dynamic capabilities in technology innovative SME-large company partnerships in South Africa', *Technovation*, vol. 28, no. 4, pp. 171–182.

Schendel, D 1994, 'Introduction to competitive organisational behaviour: toward an organisationally-based theory of competitive advantage', *Strategic Management Journal*, vol. 15, pp. 1–4.

Schilke, O 2013, 'On the contingent value of dynamic capabilities for competitive advantage: the nonlinear moderating effect of environmental dynamism', *Strategic Management Journal*, vol. 35, no. 2, pp. 179–203.

Schilke, O 2014, 'Second-order dynamic capabilities: how do they matter?', *The Academy of Management Perspectives*, vol. 28, no. 4, pp. 368–380.

Schoonhoven, CB, Eisenhardt, KM & Lyman, K 1990, 'Speeding products to market: waiting time to first product introduction in new firms', *Administrative Science Quarterly*, vol. 35, no. 1, pp. 177–207.

Schumacher, RE & Lomax, RG 1996, *A beginner's guide to SEM*, Publisher, Mahwah, NJ.

Schumpeter, JA 2013, *Capitalism, socialism and democracy*, Routledge, City, State.

Selove, M 2014, 'How do firms become different? A dynamic model', *Management Science*, vol. 60, no. 4, pp. 980–989.

Setchi, RJ, Naim, M & Seinz, H 2014, *Sustainable design and manufacturing 2014, part 2*, Lulu, New York, NY.

Shamsie, J, Martin, X & Miller, D 2009, 'In with the old, in with the new: capabilities, strategies, and performance among the Hollywood studios', *Strategic Management Journal*, vol. 30, no. 13, pp. 1440–1452.

Shan, P, Song, M & Ju, X 2016, 'Entrepreneurial orientation and performance: is innovation speed a missing link?', *Journal of Business Research*, vol. 69, no. 2, pp. 683–690.

Shapiro, C 1989, 'The theory of business strategy', *The Rand Journal of Economics*, vol. 20, no. 1, pp. 125–137.

Sharma, A & Iyer, GR 2011, 'Are pricing policies an impediment to the success of customer solutions?', *Industrial Marketing Management*, vol. 40, no. 5, pp. 723–729.

Sharpe, NR & Schroeder, CM 2016, 'Entrepreneurship and innovation in the Middle East: current challenges and recommended policies', in E Editor (ed.), *Innovation in emerging markets*, Palgrave Macmillan UK, City, State, pp. 87–101.

Sidik, IG 2012, 'Conceptual framework of factors affecting SME development: mediating factors on the relationship of entrepreneur traits and SME performance', *Procedia Economics and Finance*, vol. 4, pp. 373–383.

Silverman, D (ed.) 2016, *Qualitative research*, Sage, London, UK.

Simon, HA 1997, *Administrative behavior*, 4th edn, Free Press, New York, NY.

Simon, HA 2002, 'Organizing and coordinating talk and silence in organisations', *Industrial and Corporate Change*, vol. 11, no. 3, pp. 611–618.

Simons, R 2000, *Performance measurement and control systems for implementing strategy*, Prentice-Hall, London, UK.

Singh, R, Charan, P & Chattopadhyay, M 2019, 'Dynamic capabilities and responsiveness: moderating effect of organisation structures and environmental dynamism', *Decision*, vol. 46, no. 4, pp. 301–319.

Sirmon, DG, Hitt, MA, Arregle, JL & Campbell, JT 2010, 'The dynamic interplay of capability strengths and weaknesses: investigating the bases of temporary competitive advantage', *Strategic Management Journal*, vol. 31, no. 13, pp. 1386–1409.

Sisaye, S & Birnberg, J 2010, 'Extent and scope of diffusion and adoption of process innovations in management accounting systems', *International Journal of Accounting & Information Management*, vol. 18, no. 2, pp. 118–139.

Slade, P 2005, 'Formal Human Resource Management Practices in Small Growing Firms*', *Journal of Small Business Management*, vol. 43, no. 1, pp. 16–40.

Slevin, DP & Covin, JG 1990, 'Juggling entrepreneurial style and organisational structure', *MIT Sloan Management Review*, vol. 31, no. 2, p. 43.

Small Business & Entrepreneurship Council 2017, *Sbecouncil.org*, viewed 8 August 2020, <https://sbecouncil.org/resources/publications/small-business-tax-index-2017/>.

Sminia, H 2014, *The strategic manager*, Routledge, London, UK.

Song, LJ, Huang, GH, Peng, KZ, Law, KS, Wong, CS & Chen, Z 2010, 'The differential effects of general mental ability and emotional intelligence on academic performance and social interactions', *Intelligence*, vol. 38, no. 1, pp. 137–143.

Spanos, YE & Lioukas, S 2001, 'An examination into the causal logic of rent generation: contrasting Porter's competitive strategy framework and the resource-based perspective', *Strategic Management Journal*, vol. 22, no. 10, pp. 907–934.

Spencer, JW 2003, 'Firms' knowledge-sharing strategies in the global innovation system: empirical evidence from the flat panel display industry', *Strategic Management Journal*, vol. 24, no. 3, pp. 217–233.

Stake, E 2010, *Qualitative research: studying how things work*, Guildford Press, London, UK.

Stalk Jr, G & Hout, TM 1990, 'Competing against time', *Research-Technology Management*, vol. 33, no. 2, pp. 19–24.

Stalk, G 1988, 'Time—the next source of competitive advantage', *Harvard Business Review*, vol. 66, no. 4, pp. 41–51.

Stam, W & Elfring, T 2008, 'Entrepreneurial Orientation and New Venture Performance: The Moderating Role of Intra- And Extraindustry Social Capital', *Academy of Management Journal*, vol. 51, no. 1, pp. 97–111.

Stellefeson, ML, Hanik, BW, Chaney, BH & Chaney, JD 2009, 'Factor retention in EFA: strategies for health behavior researchers', *American Journal of Health Behavior*, vol. 33, no. 5, pp. 587–599.

Sternad, D, Jaeger, S & Staubmann, C 2013, 'Dynamic capabilities of resource-poor exporters: a study of SMEs in New Zealand', *Small Enterprise Research*, vol. 20, pp. 2–20.

Storey, D 2016, *The small firm: an international survey*, Routledge.

Strangleman, T & Warren, T 2008, *Work and society: sociological approaches, themes and methods*, Routledge, London, UK.

Stratopoulos, T & Dehning, B 2000, 'Does successful investment in information technology solve the productivity paradox?', *Information & Management*, vol. 38, no. 2, pp. 103–117.

Stump, B & Badurdeen, F 2012, 'Integrating lean and other strategies for mass customization manufacturing: a case study', *Journal of Intelligent Manufacturing*, vol. 23, no. 1, pp. 109–124.

Subramaniam, M & Youndt, MA 2005, 'The influence of intellectual capital on the types of innovative capabilities', *Academy of Management Journal*, vol. 48, no. 3, pp. 450–463.

Sun, H & Cheng, TK 2002, 'Comparing reasons, practices and effects of ISO 9000 certification and TQM implementation in Norwegian SMEs and large firms', *International Small Business Journal*, vol. 20, no. 4, pp. 421–442.

Swoboda, B & Olejnik, E 2016, 'Linking processes and dynamic capabilities of international SMEs: the mediating effect of international entrepreneurial orientation', *Journal of Small Business Management*, vol. 54, no. 1, pp. 139–161.

Tabachnick, BG & Fidell, LS 2012, *Using multivariate statistics*, 6th edn, Publisher, Old Tappan, NJ.

Tabachnick, BG, Fidell, LS & Ullman, JB 2007, *Using multivariate statistics*, vol. 5, Pearson, Boston, MA.

Tajeddini, K 2014, 'The effect of organisational structure and hoteliers' risk proclivity on innovativeness', *Asia-Pacific Journal of Management Research and Innovation*, vol. 10, no. 1, pp. 1–12.

Talaja, A 2012, 'Testing VRIN framework: resource value and rareness as sources of competitive advantage and above average performance', *Management: Journal of Contemporary Management Issues*, vol. 17, no. 2, pp. 51–64.

Tallman, S, Jenkins, M, Henry, N & Pinch, S 2004, 'Knowledge, clusters, and competitive advantage', *Academy of Management Review*, vol. 29, no. 2, pp. 258–271.

Tallon, PP 2008, 'Inside the adaptive enterprise: an information technology capabilities perspective on business process agility', *Information Technology and Management*, vol. 9, no. 1, pp. 21–36.

Tashakkori, A & Teddlie, C (eds) 2010, *Sage handbook of mixed methods in social & behavioral research*, Sage, City, State.

Tavitiyaman, P, Qiu Zhang, H & Qu, H 2012, 'The effect of competitive strategies and organisational structure on hotel performance', *International Journal of Contemporary Hospitality Management*, vol. 24, no. 1, pp. 140–159.

Teece, D & Pisano, G 1994, 'The dynamic capabilities of firms: an introduction', *Industrial and Corporate Change*, vol. 3, no. 3, pp. 537–556.

Teece, DJ 1984, 'Economic analysis and strategic management', *California Management Review*, vol. 26, no. 3, p. 87.

Teece, DJ 2000, *Managing intellectual capital: organisational, strategic, and policy dimensions*, OUP, Oxford, UK.

Teece, DJ 2007, 'Explicating dynamic capabilities: the nature and microfoundations of (sustainable) enterprise performance', *Strategic Management Journal*, vol. 28, no. 13, pp. 1319–1350.

Teece, DJ 2014, 'The foundations of enterprise performance: dynamic and ordinary capabilities in an (economic) theory of firms', *The Academy of Management Perspectives*, vol. 28, no. 4, pp. 328–352.

Teece, DJ 2018, 'Business models and dynamic capabilities', *Long Range Planning*, vol. 51, no. 1, pp. 40–49.

Teece, DJ, Pisano, G & Shuen, A 1997, 'Dynamic capabilities and strategic management', *Strategic Management Journal*, vol. 18, no. 7, pp. 509–533.

Tseng, SM & Lee, PS 2014, 'The effect of knowledge management capability and dynamic capability on organisational performance', *Journal of Enterprise Information Management*, vol. 27, no. 2. pp. 158-179.

Tsoukas, H & Mylonopoulos, N 2004, *Organisations as knowledge systems*, Palgrave Macmillan, City, State.

Türel, YK 2011, 'An interactive whiteboard student survey: development, validity and reliability', *Computers & Education*, vol. 57, no. 4, pp. 2441–2450.

Tushman, ML & Nadler, DA 1978, 'Information processing as an integrating concept in organisational design', *Academy of Management Review*, vol. 3, no. 3, pp. 613–624.

Tushman, ML & O'Reilly, CA 1996, 'Ambidextrous organisations: managing evolutionary and revolutionary change', *California Management Review*, vol. 38, no. 4, pp. 8–29.

van de Ven, AH 1976, 'A framework for organisational assessment', *Academy of Management Review*, vol. 1, no. 4, pp. 64–78.

van Doorn, S, Jansen, JJ, van den Bosch, FA & Volberda, HW 2013, 'Entrepreneurial orientation and firm performance: drawing attention to the senior team', *Journal of Product Innovation Management*, vol. 30, no. 5, pp. 821–836.

Venkatraman, N & Ramanujam, V 1986, 'Measurement of Business Performance in Strategy Research: A Comparison of Approaches', *Academy of Management Review*, vol. 11, no. 4, pp. 801–814.

Verona, G 1999, 'A resource-based view of product development', *Academy of Management Review*, vol. 24, no. 1, pp. 132–142.

Vesey, JT 1991, 'The new competitors: they think in terms of "speed-to-market"', *Academy of Management Perspectives*, vol. 5, no. 2, pp. 23–33.

Villar, C, Alegre, J & Pla-Barber, J 2014, 'Exploring the role of knowledge management practices on exports: a dynamic capabilities view', *International Business Review*, vol. 23, no. 1, pp. 38–44.

Volberda, HW, Foss, NJ & Lyles, MA 2010, 'Perspective—absorbing the concept of absorptive capacity: how to realize its potential in the organisation field', *Organisation Science*, vol. 21, no. 4, pp. 931–951.

Vonderembse, MA & Koufteros, XA 2003, 'The impact of organisational structure on time-based manufacturing and plant performance', *Journal of Operations Management*, vol. 21, no. 3, pp. 281–306.

Vorhies, DW & Morgan, NA 2005, 'Benchmarking marketing capabilities for sustainable competitive advantage', *Journal of Marketing*, vol. 69, no. 1, pp. 80–94.

Vorhies, DW, Orr, LM & Bush, VD 2011, 'Improving customer-focused marketing capabilities and firm financial performance via marketing exploration and exploitation', *Journal of the Academy of Marketing Science*, vol. 39, no. 5, pp. 736–756.

Voss, ZG, Voss, GB & Moorman, C 2005, 'An empirical examination of the complex relationships between entrepreneurial orientation and stakeholder support', *European Journal of Marketing*, vol. 39, no. 9/10, pp. 1132-1150.

Waked, B 2016, 'Access to finance by Saudi SMEs: constraints and the impact on their performance', PhD thesis, Victoria University, Australia.

Waldersee, R, Griffiths, A & Lai, J 2003, 'Predicting organisational change success: matching organisation type, change type and capabilities', *Journal of Applied Management and Entrepreneurship*, vol. 8, no. 1, p. 66.

Wales, WJ 2016, 'Entrepreneurial orientation: a review and synthesis of promising research directions', *International Small Business Journal*, vol. 34, no. 1, pp. 3–15.

Walter, A, Auer, M & Ritter, T 2006, 'The impact of network capabilities and entrepreneurial orientation on university spin-off performance', *Journal of Business Venturing*, vol. 21, no. 4, pp. 541–567.

Wang, CK & Ang, BL 2004, 'Determinants of venture performance in Singapore', *Journal of Small Business Management*, vol. 42, no. 4, pp. 347–363.

Wang, CL & Ahmed, PK 2004, 'The development and validation of the organisational innovativeness construct using confirmatory factor analysis', *European Journal of Innovation Management*, vol. 7, no. 4, pp. 303–313.

Wang, CL & Ahmed, PK 2007, 'Dynamic capabilities: a review and research agenda', *International Journal of Management Reviews*, vol. 9, no. 1, pp. 31–51.

Wang, HL 2014, *Theories for competitive advantage*, University of Wollongong, City, State.

Wang, Y & Shi, X 2011, 'Thrive, not just survive: enhance dynamic capabilities of SMEs through IS competence', *Journal of Systems and Information Technology*, vol. 13, no. 2, pp. 200-222.

Wang, Z & Kim, HG 2017, 'Can social media marketing improve customer relationship capabilities and firm performance? Dynamic capability perspective', *Journal of Interactive Marketing*, vol. 39, pp. 15–26.

Webb, B & Schlemmer, F 2008*, Information technology and competitive advantage in small firms*, Routledge, London, UK.

Weerawardena, J & Mavondo, FT 2011, 'Capabilities, innovation and competitive advantage', *Industrial Marketing Management*, vol. 40, no. 4, pp. 1220–1223.

Wei, Z, Yi, Y & Guo, H 2014, 'Organisational learning ambidexterity, strategic flexibility, and new product development', *Journal of Product Innovation Management*, vol. 31, no. 4, pp. 832–847.

Weinstein, A 1994, *Handbook of market segmentation: strategic targeting for business and technology firms*, Psychology Press, City, State.

Weiss, AM & Heide, JB 1993, 'The nature of organisational search in high technology markets', *Journal of Marketing Research*, vol. 30, no. 2, pp. 220–233.

Welsh, JA & White, JF 1981, 'Small business ratio analysis: a cautionary note to consultants', *Journal of Small Business Management*, vol. 19, no. 4, p. 20.

Wernerfelt, B 1984, 'A resource-based view of the firm', *Strategic Management Journal*, vol. 5, no. 2, pp. 171–180.

Widaman, KF 2007, 'Common factors versus components: principals and principles, errors and misconceptions', in R Cudeck & RC MacCallum (eds), *Factor analysis at 100: historical developments and future directions,* Lawrence Erlbaum Associates, Mahway, NJ, pp. 177–203.

Widener, SK 2007, 'An empirical analysis of the levers of control framework', *Accounting, Organisations and Society*, vol. 32, no. 7, pp. 757–788.

Wiklund, J 1999, 'The sustainability of the entrepreneurial orientation–performance relationship', *Entrepreneurship Theory and Practice*, vol. 24, no. 1, pp. 37–48.

Wilcox, JB, Howell, RD & Breivik, E 2008, 'Questions about formative measurement', *Journal of Business Research*, vol. 61, no. 12, pp. 1219–1228.

Wilden, R & Gudergan, S 2017, 'Service-dominant orientation, dynamic capabilities and firm performance', *Journal of Service Theory and Practice*, vol. 27, no. 4, pp. 808-832.

Wilden, R & Gudergan, SP 2015, 'The impact of dynamic capabilities on operational marketing and technological capabilities: investigating the role of environmental turbulence', *Journal of the Academy of Marketing Science*, vol. 43, no. 2, pp. 181–199.

Wilden, R, Gudergan, S, Akaka, MA, Averdung, A & Teichert, T 2019, 'The role of cocreation and dynamic capabilities in service provision and performance: a configurational study', *Industrial Marketing Management*, vol. 78, pp. 43–57.

Wilden, R, Gudergan, SP, Nielsen, BB & Lings, I 2013, 'Dynamic capabilities and performance: strategy, structure and environment', *Long Range Planning*, vol. 46, no. 1, pp. 72–96.

Williams, C 2011, 'Research methods', *Journal of Business & Economics Research*, vol. 5, no. 3, pp. 65-72.

Winter, SG 2003, 'Understanding dynamic capabilities', *Strategic Management Journal*, vol. 24, no. 10, pp. 991–995.

Winter, SG 2003, 'Understanding dynamic capabilities', *Strategic Management Journal*, vol. 24, no. 10, pp. 991–995.

Wohlgemuth, V & Wenzel, M 2016, 'Dynamic capabilities and routinization', *Journal of Business Research*, vol. 69, no. 5, pp. 1944–1948.

Wolff, A, Pett, L & Ring, J 2015, 'Small firm growth as a function of both learning orientation and entrepreneurial orientation', *International Journal of Entrepreneurial Behavior & Research*, vol. 21, no. 5, pp. 709–730.

Wong, PS, Cheung, SO & Fan, KL 2009, 'Examining the relationship between organisational learning styles and project performance', *Journal of Construction Engineering and Management*, vol. 135, no. 6, pp. 497–507.

World Bank 2015, *Small Enterprises in the Middle East and North Africa Face Risks and Rewards in the Public Market*, Word Bank Group, viewed 1 October 2017, <http://www.worldbank.org/en/news/feature/2015/05/20/small-enterprises-in-the-middle-east-and-north-africa-face-risks-and-rewards-in-the-public-market>.

Wu, CH & Lai, JY 2019, 'Dynamic pricing and competitive time-to-market strategy of new product launch under a multistage duopoly', *European Journal of Operational Research*, vol. 277, no. 1, pp. 138–152.

Wynarczyk, P, Watson, R, Storey, DJ, Short, H & Keasey, K 1993, *Managerial labour markets in the small firm sector*, 7th edn, Rutledge, New York, NY.

Yalcinkaya, G, Calantone, RJ & Griffith, DA 2007, 'An examination of exploration and exploitation capabilities: implications for product innovation and market performance', *Journal of International Marketing*, vol. 15, no. 4, pp. 63–93.

Yang, CL, Lin, SP, Chan, YH & Sheu, C 2010, 'Mediated effect of environmental management on manufacturing competitiveness: an empirical study', *International Journal of Production Economics*, vol. 123, no. 1, pp. 210–220.

Yilmaz, C, Alpkan, L & Ergun, E 2005, 'Cultural determinants of customer-and learning-oriented value systems and their joint effects on firm performance', *Journal of Business Research*, vol. 58, no. 10, pp. 1340–1352.

Ylinen, M & Gullkvist, B 2014, 'The effects of organic and mechanistic control in exploratory and exploitative innovations', *Management Accounting Research*, vol. 25, no. 1, pp. 93–112.

Zahay, D & Griffin, A 2010, 'Marketing strategy selection, marketing metrics, and firm performance', *Journal of Business & Industrial Marketing*, vol. 25, no. 2, pp. 84-93.

Zahra, S, Sapienza, HJ & Davidsson, P 2006, 'Entrepreneurship and dynamic capabilities: a review, model and research agenda', *Journal of Management Studies*, vol. 43, pp. 917–955.

Zahra, SA & Covin, JG 1993, 'Business strategy, technology policy and firm performance', *Strategic Management Journal*, vol. 14, no. 6, pp. 451–478.

Zahra, SA & Neubaum, DO 1998, 'Environmental adversity and the entrepreneurial activities of new ventures', *Journal of Developmental Entrepreneurship*, vol. 3, no. 2, p. 123.

Zahra, SA, Nielsen, AP & Bogner, WC 1999, 'Corporate entrepreneurship, knowledge, and competence development', *Entrepreneurship Theory and Practice*, vol. 23, no. 3, pp. 169–189.

Zheng, S, Zhang, W & Du, J 2011, 'Knowledge-based dynamic capabilities and innovation in networked environments', *Journal of Knowledge Management*, vol. 15, no. 6, pp. 1035–1051.

Zheng, W, Yang, B & McLean, GN 2010, 'Linking organisational culture, structure, strategy, and organisational effectiveness: mediating role of knowledge management', *Journal of Business Research*, vol. 63, no. 7, pp. 763–771.

Zhou, KZ, Brown, JR & Dev, CS 2009, 'Market orientation, competitive advantage, and performance: A demand-based perspective', *Journal of Business Research*, vol. 62, no. 11, pp. 1063–1070.

Zhou, SS, Zhou, AJ, Feng, J & Jiang, S 2019, 'Dynamic capabilities and organizational performance: the mediating role of innovation', *Journal of Management & Organization*, vol. 25, no. 5, pp. 731–747.

Zollo, M & Winter, SG 2002, 'Deliberate learning and the evolution of dynamic capabilities', *Organisation Science*, vol. 13, no. 3, pp. 339–351.

Zollo, M 2009, 'Superstitious learning with rare strategic decisions: theory and evidence from corporate acquisitions', *Organisation Science*, vol. 20, no. 5, pp. 894–908.

Zott, C 2003, 'Dynamic capabilities and the emergence of intraindustry differential firm performance: insights from a simulation study', *Strategic Management Journal*, vol. 24, no. 2, pp. 97–125.

Zwick, WR & Velicer, WF 1986, 'Comparison of five rules for determining the number of components to retain', *Psychological Bulletin*, vol. 99, no. 3, p. 432.

Appendices

Appendix A—Survey Questionnaire

Part 1: General details of you and your firm

1. What is the age of your firm?

_____ (Please indicate the exact number of years)

(If your firm has been in operation for less than 3 years please skip the rest of the survey)

2. Please indicate the type of business your firm operates in

- Manufacturing
- Service

3. What is the current status of ownership of your firm? (You may select more than one answer)

- Private
- Publicly listed
- Family business
- Joint venture
- Foreign-owned

4. Please indicate which of the following applies to your firm

- Domestic firm
- Foreign subsidiary
- Domestic firm with international business/operations

5. What is the current number of employees in your firm?

_____ (Please indicate the exact number of employees)

6. Please indicate your age

- 21-30 years
- 31-40 years
- 41-50 years
- Over 50 years

7. Please indicate your gender

- Male
- Female

8. Please indicate your highest education attainment

Secondary school and below

Bachelor's degree

Master's degree

Postgraduate degree

9. Which title do you currently hold in your firm?

- CEO
- Managing Director
- General Manager
- Vice President
- Other category (Please specify) _____

10. Are you the founder or the co-founder of the firm?

- Yes
- No

11. How long have you worked in your current firm?

_____ (Please indicate the exact number of years)

12. What is the approximate annual sales turnover of your firm?

- Less than £ 1 million
- £ 1-5 million
- £ 6-10 million
- More than £ 10 million

Part 2: General information about your external business environment characteristics

Please indicate the level of your agreement with the following statements

Industry hostility/Competitive intensity (Control variable)

Jaworski, B. J., & Kohli, A. K. (1993). Market orientation: antecedents and consequences.

In the industry, competition makes survival very difficult

The industry is stressful, hostile and very hard to keep afloat

Anything that one competitor can offer, others can match easily

There are many promotion wars in the industry

Price competition is a hallmark of the industry

Environmental dynamism (Control variable)

Urban, B. (2010). Technology and entrepreneurial orientation at the organisational level in the Johannesburg area.

The set of my firm's competitors is constantly changing

Technological breakthroughs in the industry have resulted into a large number of new product ideas

Product demand is difficult to forecast and anticipate in the industry

In the industry, customer requirements are difficult to forecast

Actions of competitors are difficult to predict in the industry

Technological turbulence (Control variable)

Calantone, R., Garcia, R., & Dröge, C. (2003). The effects of environmental turbulence on new product development strategy planning.

The technology in the industry is changing rapidly

In the industry, virtually no research & development (R&D) is done

In the industry, the modes of production and service change often

In the industry the modes of production and service change in major ways as opposed to slowly evolving

A large number of new product ideas have been made possible through technological breakthroughs in the industry

Environmental complexity (Control variable)

Revilla, E., Prieto, I. M., & Prado, B. R. (2010). Knowledge strategy: Its relationship to environmental dynamism and complexity in product development.

Firm products in the industry are complex

Firm processes in the industry are complex

Product development process in the industry requires high knowledge intensity

Part 3: General information about your firm

1. Relative to your competitors, how would you compare the firm's performance (last 3 years) based on the following metrics:

Firm performance

Vorhies & Morgan (2005). Benchmarking Marketing Capabilities for Sustainable Competitive Advantage

Customer Satisfaction

Customer satisfaction

Delivering value to your customers

Delivering what your customers want

Retaining valued customers

Market effectiveness

Market share growth relative to competitors
Growth in sales revenue
Acquiring new customers
Increasing sales to existing customers

Current (anticipated) profitability

Business unit profitability
Return on investment (ROI)
Return on sales (ROS)
Reaching financial goals

2. Indicate the level of you agreement with the following statements:

Competitive advantage

Li, S. et al (2004)

Time to market

My firm delivers products to market quickly
My firm is first in the market in introducing new products
My firm has time-to-market lower than industry average
My firm has fast product development

Entrepreneurial orientation

Covin, J. G., & Slevin, D. P. (1989). Strategic management of small firms in hostile and benign environments.

Innovativeness

The top management of my firm emphasizes on R&D and innovations
Many lines of products or services have been marketed by my firm in the past 3 years
My firm encourages new ideas from workers regardless of their status in the firm
The top management of my firm emphasizes on the use of new technology

Risk taking

In my firm, changes in products or services line have usually been quite dramatic
In dealing with competitors, my firm typically initiates actions that competitors then respond to
My firm always invests in unexplored technologies
My firm explores bravely and open-mindedly to achieve its goals

Proactiveness

My firm is very often the first business to introduce new products/services, administrative techniques, operating technologies, etc.
In general top managers of my firm have a strong tendency for high-risk projects with chances of high returns
In general the top management of my firm have a strong tendency to be ahead of other competitors in introducing novel ideas or products

My firm experiments with new ideas before deploying them commercially

Dynamic capabilities

Wilden et al. (2013)

Sensing

In my firm people participate in professional association activities

In my firm, we use established processes to identify target market segments, changing customer needs and customer innovation

In my firm, we observe best practices in our sector

In my firm, we continuously gather economic information on our operations and operational environment

Seizing

In my firm, we invest in finding solutions for our customers

In my firm, we adopt the best practices in our sector

In my firm, we respond to defects pointed out by employees

In my firm, we change our practices based on customer feedback

Reconfiguring

During the last 3 years, my firm implemented new kinds of management methods

During the last 3 years, my firm implemented new or substantially changed marketing method or strategy

During the last 3 years, my firm implemented substantial enhancements to business processes

During the last 3 years, my firm implemented new or substantially changed ways of achieving our targets and objectives

4. In general, please indicate your level of agreement with the following statements

Organizational structure

Covin, J. G., & Slevin, D. P. (1989). Strategic management of small firms in hostile and benign environments.

1	My firm favours highly structured channels of communication and a highly restricted access to important financial and operating information	My firm favours open channels of communication with important financial and operating information flowing quite freely throughout the organization
2	My firm favours a strong insistence on a uniform managerial style	In my firm manager's operating styles are allowed to range freely from very formal to the very informal

3	My firm favours tight formal control of most operations by means of sophisticated control and information systems	My firm favours loose, informal control; heavy dependence on informal relations and norm of co-operation for getting work done
4	In my firm there is strong emphasis on always getting personnel to follow the formally laid down procedures	In my firm there is strong emphasis on getting things done even if this means disregarding formal procedures
5	In my firm there is strong emphasis on getting things done even if this means disregarding formal procedures	In my firm there is strong emphasis on adapting freely to changing circumstances without too much concern for past practice
6	In my firm there is a strong emphasis on giving the most to say in decision making to formal line managers	My firm has a strong tendency to let the expert in a given situation have the most say in decision making, even if this means temporary bypassing of formal line authority
7	In my firm there is strong emphasis on getting line and staff personnel to adhere closely to formal job descriptions	In my firm there is strong tendency to let the requirements of the situation and the individual's personality to define proper on-job behaviour

Appendix B – Chi-Square Goodness of Fit test

Re_Firm_Industry

	Observed N	Expected N	Residual
Manufacturing	242	241.0	1.0
Service	240	241.0	-1.0
Total	482		

Re_Ownership

	Observed N	Expected N	Residual
Family business	135	120.5	14.5
Foreign-owned	13	120.5	-107.5
Private	279	120.5	158.5
Publicly listed	55	120.5	-65.5
Total	482		

Re_Firm_Scope

	Observed N	Expected N	Residual
Domestic firm	265	241.0	24.0
Domestic firm with international business/operations	217	241.0	-24.0
Total	482		

Re_Age

	Observed N	Expected N	Residual
31-40 years	89	120.5	-31.5
41-50 years	66	120.5	-54.5
Less than 21 years	10	120.5	-110.5
Over 50 years	317	120.5	196.5
Total	482		

Re_Turnover

	Observed N	Expected N	Residual
Â£ 1-5 million	154	120.5	33.5
Â£ 6-10 million	90	120.5	-30.5

Less than Â£ 1 million	165	120.5	44.5
More than Â£ 10 million	73	120.5	-47.5
Total	482		

Test Statistics

	Re_Firm_Industry	Re_Ownership	Re_Firm_Scope	Re_Age	Re_Turnover
Chi-Square	.008[a]	341.734[b]	4.780[a]	454.647[b]	52.191[b]
df	1	3	1	3	3
Asymp. Sig.	.927	.000	.029	.000	.000

a. 0 cells (0.0%) have expected frequencies less than 5. The minimum expected cell frequency is 241.0.

b. 0 cells (0.0%) have expected frequencies less than 5. The minimum expected cell frequency is 120.5.