2019

The Influence of dynamic capabilities on firm performance of listed manufacturing firms in Kenya

Eve N. Mutsembi
Strathmore Business School (SBS)
Strathmore University

THE INFLUENCE OF DYNAMIC CAPABILITIES ON FIRM PERFORMANCE OF LISTED MANUFACTURING FIRMS IN KENYA

EVE NYASHA MUTSEMBI

A RESEARCH THESIS SUBMITTED TO THE STRATHMORE BUSINESS SCHOOL IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE DEGREE OF MASTER OF COMMERCE AT STRATHMORE UNIVERSITY

May, 2019

DECLARATION

I declare that this work has not been previously submitted and approved for the award of a degree by this or any other university. To the best of my knowledge and belief, the thesis contains no material previously published or written by another person except where due reference is made in the proposal itself.

……..

……..

Mutsembi, Eve Nyasha Date …….

Declaration by supervisor

The thesis of Eve Nyasha Mutsembi has been submitted and reviewed for examination with my approval as Strathmore University supervisor:

……..

……..

Dr. Tabitha Waithaka Date ……

Lecturer, Strathmore Business School

ABSTRACT

Manufacturing firms worldwide are faced with high competition which causes them to explore new ways of reconfiguring their resources so as to gain superior firm performance. Existing studies have addressed the nteraction between dynamic capabilities and firm performance, especially n the high tech sectors, with mixed findings. The dynamic capabilities view s an approach which helps to study whether firms can nfluence their firm performance by ntegrating, building and reconfiguring their resources and competences. The aim of this study was to explore the relationship between dynamic capabilities and firm performance n the context of the Kenyan Manufacturing sector. The objectives of this study were to establish the nfluence of sensing capabilities on firm performance n the Kenyan listed manufacturing firms, to determine the nfluence of seizing capabilities on firm performance n the Kenyan listed manufacturing firms and to examine the nfluence of reconfiguration capabilities on firm performance n the Kenyan listed manufacturing firms. The study adopted a descriptive cross-sectional research design. A census survey was used with the study population comprising all the 27 listed manufacturing firms classified and listed by the Nairobi Securities Exchange as at December 2018. Primary data was collected from 3 respondents per firm using a structured questionnaire. A Likert scale was used to capture the perception of the managers on the nfluence of dynamic capabilities on firm performance. A content validity test was used to ensure that the questionnaire ncluded an adequate and representative set of tems that tapped the concept. Data was analysed using SPSS for descriptive and nferential statistics. The finding suggested that a positive relationship exists between sensing capability and firm performance; and seizing capability and firm performance. Reconfiguration capability was found to reduce the firm performance n the short term, due to the associated costs of asset realignment and business model redesign and restructuring.

TABLE OF CONTENTS

LIST OF FIGURES

LIST OF TABLES

LIST OF ABBREVIATIONS AND ACRONYMS

RBV – Resource Based View

KAM – Kenya Association of Manufacturers

R&D – Research and development

KNBS – Kenya National Bureau of Statistics

NSE – Nairobi Securities Exchange

ACKNOWLEDGMENT

I thank God for his strength, peace, confidence and wisdom throughout my academic journey.

I acknowledge the guidance and encouragement of Dr. Tabitha Waithaka, my supervisor. The quality and thorough nature of this proposal has only been made possible by the consistent guidance and support from her, not forgetting to mention her positivity and patience.

I would also like to thank my family and friends for championing my continual academic and professional development.

DEDICATION

This work is dedicated to God, my mother, Dr. Stella Ajusi and Noel Ngoloma, Adv.

CHAPTER ONE

INTRODUCTION

1.1 Background of the Study

The increase in competition among businesses has forced manufacturing firms worldwide to explore new ways of reconfiguring their resources so as to gain superior firm performance (Pujari, Dangelico, & Pontrandolfo, 2016). The authors suggest that manufacturing firms invest in different initiatives to save on costs, mitigate risks and most importantly to gain superior firm performance. The dynamic capabilities view is currently considered as one of the possible approaches in driving the strategy agenda (Barreto, 2010; Di Stefano, Peteraf, & Verona, 2010; Hodgkinson & Healey, 1500–1516; Vogel & Güttel, 2013). The dynamic changes in competitive environments force firms to consider reconfiguration of their processes and resources which is also explained as renewing processes regularly.

The purposeful alteration of resource configurations is characteristic of the resource-based theory (Barney, 1991; Wernerfelt, 1984). Hence, the influence of dynamic capabilities on firm performance can be evaluated using the resource-based theory's value-rarity-inimitability-substitutability (Nelson & Winter, 1982; Winter, 2012; Zott, 2003). More specifically, dynamic capabilities generate new, valuable, rare and hard-to-imitate resource configurations; by systematically engaging in such change, the organization is also more likely to achieve alignment with the environment and superior firm performance (Fainshmidt & Frazier, 2017).

Prior research explains dynamic capabilities to be routines in the organization that causes changes on the resources of a firm (Schilke, 2013; Pisano, Shuen & Teece, 1997). This explains that dynamic capabilities are based on organizational routines, commonly understood as learned, highly patterned, repetitious behavioural patterns for interdependent corporate actions (Schilke, 2013). Firm performance is defined as a measure of standard, prescribed gauges or scales of effectiveness and efficiency or an outcome of all of the activities of the organization (Gituku & Kagiri, 2015). It can be measured using different gauges including return on investment, profitability and sales growth (Mairesse & Mohnen, 2010).

The centre of debate still remains in trying to establish the extent to which dynamic capabilities directly influence firm performance (Barreto, 2010). Some studies argue for a direct relationship between dynamic capabilities and firm performance (Teece, Pisano & Schuen, 1997). Makadok (2001) argues that a direct relationship is dependent on firms possessing the resources on which dynamic capabilities can act. Zahra, Sapienza and Davidsson (2006) argue to the contrary that having dynamic capabilities does not guarantee good firm performance. Other studies posit that dynamic capabilities may influence firm performance through modifying and creating resource bundles (Eisenhardt & Martin, 2000; Zott, 2003). Zahra, Sapienza and Davidson (2006) also warn that dynamic capabilities may even ruin performance if they are misused, and opportunity cost for developing and using dynamic capabilities must be considered (Winter, 2003). Further, Schilke (2013) argues that the effect of dynamic capabilities on firm performance is contingent upon the dynamism of the market. These studies highlight the complexity of the dynamic capabilities–firm performance relationship hence the need for further empirical investigation (Senaratne, Wang, & Rafiq, 2014).

1.1.1 Dynamic Capabilities

Dynamic capabilities is a multifaceted study where different scholars have defined it in various ways. It explains a company's competitive (dis)advantage (Jurksiene & Pundziene, 2016) coming from the ability of the firm to integrate, build and reconfigure its resources and competences to gain superior firm performance and sustainability in their environment (Teece, 1997). Helfat and Winter (2011) have defined it in comparison to the ordinary capabilities establishing that the latter allow an organization to make a living in the present, while dynamic capabilities alter the way an organization makes its living. Costello and McNaughton (2016) found that dynamic capabilities work to change resources, competencies or operational routines over time. They further defined it as learned collective activity to create or reconfigure resources and operating routines as considered strategically appropriate by the firm's principal decision-makers (Costello & McNaughton, 2016).

This study, which first considered that not all dimensions of dynamic capabilities are equally important for firm performance (Huang et al., 2012; Park & Kim, 2013; Tseng & Lee, 2014), adopted the dynamic capabilities typology proposed by Teece (2007) which identified three types of dynamic capabilities: sensing capabilities, seizing capabilities and reconfiguration capabilities. This typology offers a parsimonious model with a limited set of specific and measurable dynamic capabilities (Pavlou & El

Sawy, 2011; Costello & McNaughton, 2016). Sensing capabilities are defined as the ability to spot, interpret, and pursue opportunities in the environment (Pavlou & El Sawy, 2011). This capability requires searching and exploring markets and technologies, both local and distant from the organization (Costello &McNaughton, 2016; Teece, 2014; Hodgkinson & Healey 2011). The seizing capability influences the level of which innovation opportunities, once sensed, are obtained (Fitz-Koch & Nordqvist, 2017). Seizing capability involves the adjustment of new technologies with markets and utilizations (Zahra, Neubaum & Larraneta, 2007). Reconfiguration capabilities seek to realign tangible and intangible assets to facilitate and promote change in the organization (Ince & Hahn, 2018). Companies must regularly realign and modernize their assets and processes, to address new opportunities in the changing environments (Fitz-Koch & Nordqvist, 2017; Helfat et al., 2015).

A growing body of literature has addressed the role of dynamic capabilities in obtaining superior firm performance (Eisenhardt & Martin, 2000; Zahra, Sapienza & Davidsson, 2006). The underlying assumption is that firms that win in 'integrating, building, and reconfiguring internal and external competences' (Teece, Pisano & Shuen, 1997, p. 516) earn higher returns compared to their competitors, especially in highly changing and competitive environments. Prior research has focused on how the differences in performance occur (Helfat & Peteraf, 2003), the different types of capabilities used (Subramaniam & Youndt, 2005) and how these capabilities develop over time (Ethiraj et al., 2005). The main results are that capabilities develop based on path dependence and previous knowledge and resource bases of the firm, learning, and substantial time and investment into the endeavour (Ethiraj et al., 2005; Zollo & Winter, 2002).

Despite these advances, there are surprisingly few investigations that focus specifically on the link between specific dynamic capabilities and the performance of firms in developing countries (Sirmon, Hitt & Ireland, 2007). Thus far, the literature on dynamic capabilities and their development has primarily been focused on large and established firms in developed countries (Rosenbloom, 2000). In this study, the dynamic capabilities argument is applied on listed Kenyan Manufacturing firms. Phung and Mishra (2017) found that listed firms reflect the economic and sector conditions and thus would paint a picture of what is happening in the entire sector. In particular, the main research question posed in this study was: to what extent do dynamic capabilities influence firm performance in the listed manufacturing firms in Kenya?

1.1.2 Firm Performance

The research interest in studying dynamic capabilities stems from their potential influence on firm performance (Pisano, Shuen, & Teece, 1997). Porter (1980) defines firm performance as an organization's ability to achieve sustainable above average returns, which may then lead to competitive advantage. Firm performance is gauged by a variety of measures including profitability, sales growth and return on investment (Mairesse and Mohnen, 2010). Firm performance could also be seen as a measure of standard, prescribed indicators of effectiveness and efficiency or an outcome of all of the organizations activities (Gituku & Kagiri, 2015).

Hernández-Linares, Kellermanns, and López-Fernández (2018) used perceptual judgments to assess the dynamic capabilities-firm performance relationship, noting that subjective measures of performance are common (Real, Roldán, & Leal, 2014) since they yield more holistic evaluations and capture more than a single performance element (Rodríguez, Carrillat, & Jaramillo, 2004). Many researchers believe that a single objective measure of performance does not adequately provide a valid measure of performance (Olson, Slater, & Hult, 2005; Pelham, 1997; Rodriguez, Carrillat, & Jaramillo, 2004). Multiple dimensions of performance are recommended in order to avoid the close relationship between some market-oriented behaviours (Roach, Ryman, Rosalind, & Hannah, 2018; Pelham, 1997).

In line with the above definitions, Pavlou and Sawy (2011) recommended using two dimensions to measure firm performance when studying dynamic capabilities (Clark & Fujimoto, 1991; Griffin, 1997; Kusunoki, Nonaka, & Nagata, 1998): product effectiveness, which is defined as the development and or improvement of existing and new products or services; and process efficiency, which is defined as operational improvements in terms of costs, quality and lead times. The study viewed firm performance as the achievement of product effectiveness and process efficiency. This study adopted these two measures of firm performance namely; product effectiveness and process efficiency.

1.2 The Manufacturing Industry in Kenya

In the non-food sub-sector of manufacturing, most activities showed a slowdown in production except manufacture of galvanized iron sheets, which grew by 4.3 per cent in the third quarter of 2018 (KNBS, 2018). The Kenya National Bureau of Statistics (2018) recorded depressed performances in the

manufacture of finished leather and assembly of vehicles. Credit to the manufacturing sector rose by 11.5 per cent during the review period compared to 6.8 per cent decline in the second quarter of 2017 (KNBS, 2018).

The role of the manufacturing sector in Vision 2030 is to create employment and wealth while its overall goal is to increase its contribution to the GDP by at least 10% per annum as envisaged in the Vision 2030 (Ministry of Industry, 2018). The Kenya Association of Manufacturers (2018) reported that the industry needed to take serious steps if it intended to achieve the growth of GDP contribution from the current 9.2% to 15% by 2025, (KAM, 2018). It is within this context that the 2018 Manufacturing Priority Agenda was developed which outlines the immediate action that will yield tangible results in the short term, and work towards the aforementioned industry goals. The Kenya Association of Manufacturers (2018) hope to catalyze the competitiveness of local industry as well as enable the local manufacturers to compete on an international platform.

A raft of policy strategies such as Vision 2030, Kenya Industrial Transformation Programme, National Trade Policy, Investment Policy and Buy Kenya Build Kenya have been devised to spur the manufacturing sector in Kenya (KAM, 2018). However, manufacturing sector contribution to GDP has over the years stagnated at around 10% (KNBS, 2018). Nevertheless, the government aspires to grow the shares of manufacturing sector from 9.2% to 15% by the year 2022. Within the last 10 years, highest growth rate was recorded in 2010 with 5.8% growth and the lowest in 2012 when the sector grew by -0.6%. These growth rates are way below the anticipated growth rate of 10% as aspired under Vision 2030 (KAM, 2018).

Food products sub-sector is the biggest contributing about 43% to the overall manufacturing sector contribution to GDP. Other sub-sectors include leather, wood and furniture, transport equipment, and machinery (KAM, 2018). The number of manufacturers in the country has grown over the last 10 years and manufacturing output grew by 69% since 2010. This has caused an increase in competition as more players desire a piece of the same cake (KAM, 2018). The Kenya Association of Manufacturers reported that the value added in the manufacturing sector increased by 11.6% which is almost double of 2010. However, when compared with other sectors in the economy, the manufacturing sector value addition lags far behind and thus cries for the need for structural changes to revive the manufacturing sector (KAM, 2018).

There is increased integration of world economies through the forces of globalization. The rapid globalization, technological advancement, changing consumer preference and evolving government policies are reshaping the manufacturing industry exponentially, accelerating the pace of competition and continually raising the bar on the performance of companies' across the globe (KAM, 2018). This highly dynamic environment thus requires the manufacturing firms to differentiate themselves by developing dynamic capabilities which will set them apart and help them gain superior firm performance.

1.3 Problem Statement

The manufacturing sector in Kenya has performed dismally over the last 10 years compared to the other sectors in the economy (KNBS, 2018). The highest growth rate the sector has achieved was 5.8% in 2010 which is way below the anticipated growth of Vision 2030 (KAM, 2018). The sector still continues to face a lot of technological changes and advancements, changing consumer preferences, and rapid globalization which create a very dynamic environment for the firms operating in this sector (KAM, 2018). The Kenya Association of Manufacturers (2018) reports that a continuous trend of this decline of growth coupled with the increasingly dynamic environment might lead to the loss of employment for a huge chunk of the economy. Empirical analysis by Bivens (2003) indicated that 100 jobs in the manufacturing sector supported 291 jobs in other sectors of the economy. Further, the latest report from Manufacturing Institute (2019) in the US revealed that $1 worth of manufactured product creates $1.34 in the rest of the economy. This is the largest multiplier of any economic sector (KAM, 2019).

Increasingly, researchers are calling for an improved understanding of the arrangement of capabilities that enables firms to adapt to increasingly challenging competitive contexts (Merrilees, Rundle-Thiele, & Lye, 2011). While some studies have postulated that dynamic capabilities have a positive impact on a firm's performance (Parnell, 2011; Soto-Acosta & Meroño-Cerdan, 2008), other research evidence has supported a negative relationship (Drnevich & Kriauciunas, 2011; Pavlou & El Sawy, 2011). As a result, a gap between relatively static resources and the fast-moving turbulence of the marketplace appears to be growing. If organizations are to close this gap, existing capabilities must become more dynamic in nature (Bruni & Verona, 2009; Day, 2011; Morgan, 2012).

To achieve good firm performance, Zahra et al. (2006) found that firms must develop and apply dynamic capabilities that enable them to pursue opportunities in new and potentially effective ways. Moreover, to combat competition, firms are increasingly required to change the rules of the game through developing and applying their dynamic capabilities (Teece, 2007). Other studies have found that dynamic capabilities are conducive to superior firm performance, especially in high-tech sectors (Danneels, 2002; Yung-Chul, 2013). This study therefore focused on establishing the influence of dynamic capabilities on firm performance of listed manufacturing firms in Kenya.

1.4 Research Objectives

The main objective of this research was to establish the influence of dynamic capabilities on firm performance of listed manufacturing firms in Kenya.

This study was guided by the following specific objectives:

i) To establish the influence of sensing capabilities on firm performance in the Kenyan listed manufacturing firms.
ii) To determine the influence of seizing capabilities on firm performance in the Kenyan listed manufacturing firms.
iii) To examine the influence of reconfiguration capabilities on firm performance in the Kenyan listed manufacturing firms.

1.5 Research Questions

i) What is the influence of sensing capabilities on firm performance in the Kenyan listed manufacturing firms?
ii) What is the influence of seizing capabilities on firm performance in the Kenyan listed manufacturing firms?
iii) What is the influence of reconfiguration capabilities on firm performance in the Kenyan listed manufacturing firms?

1.6 Scope

This study focused on 27 Kenyan manufacturing firms listed on the Nairobi Securities Exchange (2018) as at March 2019. A total of 81 respondents were targeted for this study, representing 3 respondents from each firm. The targeted respondents were the firm's head of research and development department, head of operations and the head of innovation, marketing or business development. Listed firms can paint a good picture of the performance and conditions of the entire sector (Phung and Mishra, 2007). These firms are classified by sub-sector as evidenced by the Kenya Association of Manufacturers. Those listed include the Agricultural subsector, Automobiles and Accessories subsectors, Construction and Allied subsectors, Energy and Petroleum subsectors and manufacturing and Allied subsectors (NSE, 2018).

1.7 Significance of the Study

Findings of this research will benefit the Kenyan manufacturing industry by determining the influence of dynamic capabilities on firm performance; and thus guide managers on the resource allocation towards creating dynamic capabilities. A consistent focus on this will result in the manufacturing industry gaining sustainable competitive advantage and therefore surviving in a highly competitive and growing environment.

This study will add a contribution to previously done research on dynamic capabilities and its influence on firm performance in the manufacturing industry in developing countries. This is important as the value of creating dynamic capabilities may be different for firms in developing countries compared to more established firms in developed countries.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This chapter reviews the studies done by other researchers with regards to how dynamic capabilities influence firm performance. It is formulated into sections, the first being the theoretical framework, which includes theories previously used and that are relevant to the study. The second section covers the empirical review of the three dynamic capabilities (sensing, seizing and reconfiguration) leading to the research gap that the study anticipates to fill. Finally, the conceptual framework which links the specific dynamic capabilities to firm performance.

2.2 Theoretical Foundation

This section explores the theoretical underpinning of the study mainly focusing on the resource based view and the configurational theory.

2.2.1 Resource Based View

Resources refer to the organization's assets both tangible resources such as buildings, plant and machinery as well as the intangible resources such as the firm's brand name, reputation, patents, intellectual property and the firm's reputation that facilitate its operations (Jones & Hill, 2010). These resources are considered to give a superior firm performance if they are valuable, if they create strong demand for the organization's products and or lower its costs and if they are rare and difficult to imitate (Jones & Hill, 2010).

The resource based view is concerned with enhancing the core competences of the company in order to develop a sustainable competitive advantage (Hill & Brennan, 2000). This model assumes that each organization is a collection of resources and capabilities that are unique and are the basis of the organization's strategy as well as its ability to earn above average returns (Hitt, Ireland & Hoskisson, 2009).

The theory assumes that an organization's performance is influenced by its unique resources. Organizations acquire different resources and develop unique capabilities based on how they combine and use the resources. While resources and capabilities are not highly mobile across the firm, the

heterogeneity in resources and capabilities are a source of competitive advantage (Barney, 1991). In order for organizations to gain a competitive advantage over rivals, its resources and capabilities need to be valuable, rare, costly to imitate and non-substitutable (Hitt et al., 2009).

The resource based model makes use of the organization's valuable and rare resources as well as its competitive capabilities to deliver value to customers in ways rivals find difficult to match (Gamble & Peteraf, 2015). An organization is able to attain good firm performance if distinctive competency arises when it possesses firm specific and valuable resources and firm specific capabilities to manage those resources. They are a source of competitive advantage for the firm consequently creating superior profitability (Johnson & Whittington, 2008). The Resource Based View has been widely used to define competitive advantage through the VRIO frameworks which states that for a resource to create a competitive advantage, it must be Valuable, Rare, Inimitable and Non-Substitutable (Okumus & Chathoth, 2011). It further states that the firm must be organized in a way that it can effectively and efficiently exploit its resources (Barney & Wright, 1998).

In relation to the current study, this theory is relevant in that it focuses on the relationship between firm resources which combine to form capabilities and firm performance (Furrer et al., 2008). The Resource Based View has traditionally provided an appropriate theoretical foundation to examine the role of ordinary capabilities in building and sustaining competitive advantage (Barney, Ketchen, & Wright, 2011; Kozlenkova, Samaha, & Palmatier, 2013). However, the resource based view has been criticized as being inherently internally focused and static in nature (Priem & Butler, 2001; Kozlenkova, Samaha, & Palmatier, 2013) and therefore too limited for the turbulent marketplaces of today (Pisano, Shuen, & Teece, 1997). In response to the limitations of the resource based view, the dynamic capabilities perspective has been offered as a more appropriate framework for complex and turbulent markets, which require the constant renewal of the organization through the reconfiguration of firm level resources (Pisano, Shuen, & Teece, 1997; Ambrosini, Bowman, & Collier, 2009).

2.2.2. Configurational Theory

Configurations are a set of separate attributes that are collectively meaningful as a system (Miller & Mintzberg, 1981). Within the field of management, configurational theory maintains that organizations are best understood as clusters of interconnected structures and practices, rather

than as modular or loosely coupled entities whose components can be understood in isolation (Fiss, 2007). As such, configurational theory provides the basis to identify patterns of attributes associated with a particular outcome (Ragin, 2008). These attributes within configurations tend to exhibit complementarity, reinforcing one another's effects or compensating for one another's deficiencies. As a consequence, not all attributes must appear in every configuration, and equifinality may exist, whereby more than one combination can be equally effective in producing an outcome (Gresov & Drazin, 1997).

Configurational theory suggests the concept of matching organizational resources with the corresponding environmental context (Ginsberg & Venkatraman, 1985). As Zajac, Kraatz, and Bresser (2000) note, strategic fit is a core concept in normative models of strategy formulation, and the pursuit of strategic fit has traditionally been viewed as having desirable performance implications. Derived from configurational theorizing, Wilden et al. (2016) suggested an architectural model of dynamic capabilities wherein the firm is viewed as a house. In their analogy, the basic structural integrity of the house is determined by its strategic orientation and dynamic capabilities. This structure must be appropriate for the house to withstand (fit) the "weather" of the external environment.The architectural model proposed by Wilden et al. (2016) is a recent addition to the literature and provides the general foundation for a configurational theory of the dynamic capabilities view, but such theory remains nascent.

This theory is relevant to the study in that it hinges on the concept of strategic fit and predicts specific configurations of organizational and environmental factors that, along with dynamic capabilities, lead to superior firm performance. Whereas Wilden et al. (2016) focus on how dynamic capabilities may prepare the firm to weather storms (that s, environmental turbulence), the configurational theory enables a firm to explicate that dynamic capabilities may also lead to superior firm performance n relatively less dynamic environments as part of specific configurations that accommodate the firms' strategic orientation and the multidimensional nature of the environment. The relevant factors within a configurational framework of dynamic capabilities and firm performance are the environmental context and the strategic orientation of the firm.

2.3 Empirical Review

This section reviews the work of scholars on dynamic capabilities with a focus on the sensing capability, seizing capability and reconfiguration capability and their influence on firm performance.

2.3.1 Sensing Capabilities and Firm Performance

Sensing entails continuous observation of a firm's external environment and accumulation of insights regarding opportunities and threats (Augier & Teece, 2009). Sensing new opportunities is very much a scanning, creation, learning, and interpretive activity. Investment in research and related activities is usually a necessary complement to this activity (Lichtenthaler, 2012). To identify and shape opportunities, enterprises must constantly scan, search, and explore across technologies and markets, both local and distant (March & Simon, 1958; Nelson & Winter, 1982). This activity not only involves investment in research activity and the probing and reprobing of customer needs and technological possibilities but it also involves understanding latent demand, the structural evolution of industries and markets, and likely supplier and competitor responses (Teece, 2007). The search activities that are relevant to 'sensing' include information about what's going on in the business ecosystem (Day, 1994). With respect to technologies, research and development activity can itself be thought of as a form of search for new products and processes.

The question to what extent sensing capabilities directly impact firm performance remains at the centre of debate (Senaratne, Wang, & Rafiq, 2016). Teece et. al (1997) argue for a direct relationship between sensing capabilities and firm performance, when a firm posseses the resources on which sensing capabilities can act (Makadok, 2001). Zahra, Sapienza and Davidson (2006) suggest that having sensing capabilities does not guarantee successful outcomes and that they may only influence performance through modifying and creating resource bundles (Senaratne, Wang, & Rafiq, 2016; Eisenhardt and Martin, 2000; Zott, 2003). Zahra, Sapienza and Davidson (2006) also warn that sensing capabilities may even damage the performance of the firm if they are misused, and finally that the opportunity cost for developing and using sensing capabilities must be considered (Winter, 2003).

Teece (2007) found that firms that are alert in using their sensing capabilities are often able to leverage customer-led efforts into new products and services which can have an effect on their firm performance. On this basis, Atuahene-Gima et al. (2005) and Helfat, et al. (2007) found that a

strong sensing capacity contributes to avoiding lockout effects and competency traps because it helps to direct a firm's research based on a thorough market understanding. Katila and Ahuja (2002) found that strong sensing capabilities may further ease the constraints imposed on firms by the scarcity of internal resources because it facilitates the identification of opportunities for external technology acquisition.

Helfat and Peteraf (2009) found that environmental scanning does not involve substantial resources because it can often be accomplished by research and development and marketing employees along with their primary work. However, they also found that sensing capabilities do not ensure superior firm performance. Instead, sensing capabilities provide the basis for subsequently seizing innovation opportunities (Helfat and Peteraf, 2009). The marginal utility of strengthening sensing capabilities is relatively limited if a firm lacks seizing capabilities. Based on these trade-offs, firms most likely balance the development of the capacities (Lichtenthaler, 2012). Lichtenthaler (2012) also found that a negative firm performance would be attributed to a frim which develops their sensing capabilities without the seizing capabilities.

2.3.2 Seizing Capabilities and Firm Performance

Seizing is characterized by ongoing evaluation of firm capabilities and resources (Wilden, Gudergan, Nielsen, & Lings, 2013), often accompanied by substantial investment in tangible and intangible assets (Helfat & Peteraf, 2015). Once a new technological or market opportunity is sensed, it must be addressed through new products, processes, or services (Lichtenthaler, 2012). This almost always requires investments in development and commercialization activity (Helfat, et al., 2007). Addressing opportunities involves maintaining and improving technological competences and complementary assets and then, when the opportunity is ripe, investing heavily in the particular technologies and designs most likely to achieve market place acceptance (Schilke, 2013).

Emden et al. (2006) and Helfat et al. (2007) found that firms with strong seizing capabilities may achieve superior firm performance by capturing value from innovation based on market success. In particular, Heeley et al. (2007) and Teece (2007) found that seizing capabilities determine to what degree innovation opportunities that have been identified or generated are achieved. Zahra and George (2002) however, argue to the contrary that strong seizing capabilities first have an effect on

innovation success which then has an effect on firm performance. With a limited ability to capture value from innovation by seizing opportunities, a firm will also experience difficulties in the market-based transformation of its innovation processes over time (Lichtenthaler, 2012).

Cepada et al. (2007) and Easterby-Smith et al. (2008) also found that acquiring seizing capabilities is necessary but not sufficient for superior firm performance; learning across individuals, groups, and organizational boundaries must also occur for such capabilities to change firm performance. That is, knowledge must be transferred throughout the organization, integrated with other knowledge areas, and applied to a new product or process (Schulze & Brojerdi, 2012; Kessler et al., 2000).

2.3.3 Reconfiguration Capabilities and Firm Performance

Reconfiguration entails the recombination of a firm's resources and ordinary capabilities to optimize complementarities internally and with the environment (Teece, 2012; Wilden and Gudergan, 2015). Teece (2007) found that a key to sustained profitable growth is the ability to recombine and to reconfigure assets and organizational structures as the enterprise grows, and as markets and technologies change, as they surely will. Reconfiguration is needed to maintain evolutionary fitness and, if necessary, to try and escape from unfavourable path dependencies (Wilden & Gudergan, 2015). Lichtenthaler (2012) found that while sensing and seizing capabilities may enable a firm to achieve superior performance, they are most likely insufficient in sustaining superior performance. Capron et al. (1998) agreed that redeployment and reconfiguration may also involve business model redesign as well as asset-realignment activities, and the revamping of routines. Helfat and Peteraf (2003) suggest that capability redeployment takes one of two forms: the sharing of capability between the old and the new, and the geographic transfer of capability from one market to another.

Teece (2007) found that in environments of rapid change, there is a need for continuous or at least semi-continuous reconfiguration. Similarly, Koufteros et al. (2002) suggest that companies need to improve their reconfiguration capabilities in their product development function to enhance their firm performance. Some scholars however have argued to the contrary that reconfiguration capabilities may not necessarily result in superior firm performance (Ambrosini & Bowman, 2009; Eisenhardt & Martin, 2000) and entail cost (Lavie, 2006; Pablo et al., 2007). However, others have pointed out that they tend to be valuable (Peteraf et al., 2013), and, because reconfiguration capabilities are 'idiosyncratic in their details' (Eisenhardt & Martin, 2000, p. 1105) and learned as organizations

respond to their environment (Winter, 2012), there could be an appreciable and difficult-to-imitate value added to the most experienced firms (Peteraf et al., 2013).

2.4 Research Gaps

The Teece (2007) framework indicates that the extent to which an enterprise develops and employs superior, non imitable, dynamic capabilities will determine the nature and amount of intangible assets it will create and/or assemble and the level of economic profits it can earn. Furthermore, the framework emphasizes that the past will impact current and future performance. However, there is much that management can do to simultaneously design processes and structures to support innovation while unshackling the enterprise from dysfunctional processes and structures designed for an earlier period.

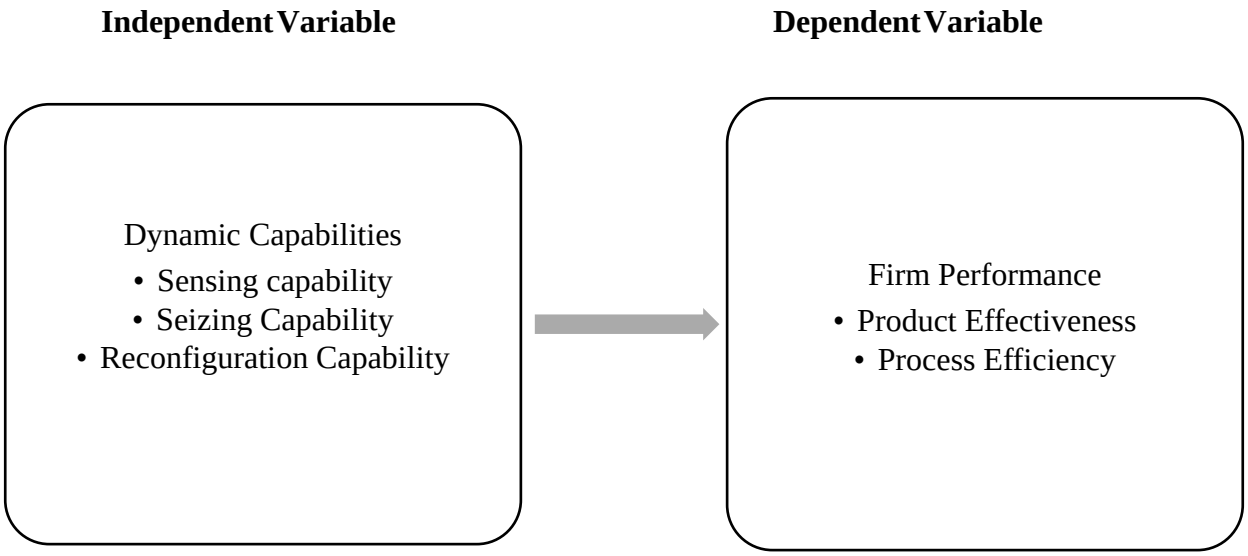
Fainshmidt et al. (2018) argued contrary to the proponents of the positive relationship between dynamic capabilities and firm performance, noting that dynamic capabilities are not always needed to achieve a superior firm performance. This is consistent with the findings of Lichtenthaler (2012) who established that an absence of the seizing capabilities in a firm and a presence of the sensing capabilities will most probably have a negative effect on firm performance. They also found that the relationship between dynamic capabilities and firm performance is contingent upon the strategic fit between organizational and environmental factors, contributing to a more rigorous and configurational dynamic capabilities view. Further, Eisenhardt et al. (2000) concluded that long-term competitive advantage lies in resource configurations and not the rest of the dynamic capabilities.

The above study findings point to inconsistencies. These can be attributed to the fact that studies done are conducted in different geographical settings. Besides, the majority of the studies focused on developed economies and hence the need to determine the influence of dynamic capabilities on firm performance in developing economies such as Kenya.

2.5 Conceptual Framework

The conceptual framework in Figure 2.1 depicts the relationship between dynamic capabilities and firm performance.

Figure 2.1 Conceptual Framework



Source: Researcher (2018)

Dynamic capabilities were split into three classification in this study namely sensing capabilities, seizing capabilities and reconfiguration capabilities. The influence of the dynamic capabilities on firm performance was measured through the product effectiveness and process efficiency.

2.6 Operationalization of Study Variables

This section explains how the study variables were be operationalized.

Table 2.1: Operationalization of Variables

Variable	Operational definition	Measurement indicator	Supporting Literature
1. Independent Variable:			
Sensing capabilities	Continuous observation of a firm's external environment and accumulation of insights regarding opportunities and threats	Extent measured through a 5 Point Likert scale	Augier and Teece, (2009); Lichtenthaler (2012); March and Simon, (1958); Nelson and Winter, (1982); Teece (2007).

Seizing capabilities	Ongoing evaluation of firm capabilities and resources, often accompanied by substantial investment in tangible and intangible assets.	Extent measured through a 5 Point Likert scale	Wilden, Gudergan, Nielsen and Lings, (2013); Helfat and Peteraf, (2015); Lichtenthaler (2012).
Reconfiguration capabilities	Recombination of a firm's resources and ordinary capabilities to optimize complementarities internally and with the environment.	Extent measured through a 5 Point Likert scale	Teece, (2012); Wilden andGudergan, (2015); Capron,Dussauge, and Mitchell, (1998); Helfat and Peterat (2003).
2. Dependent Variable:			
Product effectiveness	Development and or improvement of existing and new products or services.	Measured through a 5 Point Likert scale	Kusunoki, Nonaka, and Nagata, (1998); Clark and Fujimoto, (1991); Jennings et al., (2000)
Process efficiency	Operational improvements in terms of costs, quality and lead times.	Measured through a 5 Point Likert scale	Clark and Fujimoto, (1991); Griffin, (1997); Paulraj, Lado and Chen, (2008); Villena, Revilla and Choi, (2011)

Source: Researcher (2018)

2.7 Chapter Summary

This chapter explained the theories that guided this study, which were the Resource Based View Theory and the Configurational Theory. It also focused on the three dynamic capabilities relationship with firm performance, namely the sensing capability, seizing capability and reconfiguration capability; as well as the conceptual framework, citing empirical study findings. The conceptual framework illustrated the association among the dependent and independent variables; the dependent variable being firm performance and the independent variable being the dynamic capabilities.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

This chapter describes the research methodology that was used in gathering information, procedures that were adopted in conducting the research and the techniques used in data collection and analysis.

3.2. Research Philosophy

The motivation behind science is to change what is accepted to be known into things that are known. Two noteworthy research theories are particular, to be specific positivist and interpretivist (Galliers, 1991). The positivists approach hold that the truth is steady and can be watched and portrayed from a target view point without meddling with the phenomena being contemplated (Levin, 1988). Interpretivist then again hold that just through emotional understanding of and mediation as a general rule can the truth be completely comprehended, the investigation of phenomena in its regular habitat is vital.

Positivists plan to test a hypothesis or portray an affair through perception and estimation so as to anticipate and control powers that encompass us (O'Leary, 2004). Furthermore, it looks to utilize existing hypothesis to create speculation that are tried and affirmed to be entirely, to some degree, or generally discredited prompting further improvement of hypothesis to be tried with further research. Positivism empowers the analyst to be worried about certainties and non-certainties (Saunders & Thornhill, 2009). This present investigation's groundwork is situated towards the positivism way to deal with research strategies.

Positivists argue that reality consists of anything that is available to the senses and that inquiry should be based upon specific observations as opposed to philosophical speculation (Sarantakos, 1993). This is the preferred approach because it deals with facts and not values. This theory is based on the assumption that the external world can be accurately described and causally explained. Subsequently, this methodology is based on the use of quantitative methods and the

precision and usefulness of theories derived in this manner are judged by their capacity to explain or predict phenomena.

Friedman (1953) brings into light the instrumentalism sub set of positivism that regards predictive ability to be superior to explanatory ability of the methodology. In its purest form research results from positivist methodology is scientific, structured, has prior theoretical base, seeks to establish the nature of relationships, causes and effects and employs empirical validation as well as statistical analysis to test and confirm theories. Positivists emphasize that the quality of research and its adequacy is a function of its reliability, validity and generalizability (Abernethy, Luckett, & Selto, 1999; Bordens & Abbott, 1999). In this research reliability, will be assessed in terms of stability of the results from the questionnaires issued.

This study adopted the positivist approach in seeking to establish the influence of dynamic capabilities on firm performance of the listen Kenyan manufacturing firms. To achieve this, the study used a quantitative research approach in determining the relationship between the specific dynamic capabilities and their effect on firm performance through relationship analysis. This research sought solution to the key questions and described the causal relationships (Creswell, 2003). The study was also objective and examined methods and conclusions for bias.

3.3 Research Design

The aim of this study was to determine the influence of dynamic capabilities on firm performance in the listed Kenyan manufacturing firms through the use of a descriptive cross-sectional designed survey. A descriptive research design was used because it facilitated generalization of the findings to the entire population under study (Pavlou & El Sawy, 2011). The study also adapted a correlational investigation as it aimed to determine whether a relationship existed among the variables being investigated (Sekaran & Bougie, 2010). The study was conducted in the natural environment of the organization with minimal interference by the researcher within the normal flow of work as is custom for a correlational study (Cooper & Schindler, 2008).

3.4 Population of the Study

The target population for this research was all the 27 Kenyan manufacturing firms listed on the Nairobi Securities Exchange (2018) as at November 2018 (see appendix 3). Listed firms can paint a good picture of the performance and conditions of the entire sector (Phung & Mishra, 2017).

3.5 Sampling Design

A sample is a subset of the entire population (Sekeran & Bougie, 2010). Samples are collected and statistics are calculated from the samples so that one can make inferences or extrapolate from the sample to the population (Cooper & Schindler, 2008); however, when it is feasible it is appropriate to make use of an entire population (Creswell, 2003). This study utilized the entire population of 27 Kenyan manufacturing firms listed on the Nairobi Securities Exchange (2018) as at November 2018 (see appendix 3).

Judgemental sampling technique was adopted in selecting respondents from the elements of the population for the study. Judgemental sampling technique involves selection of informants who possesses specific knowledge that the researcher is looking out for and does not need to be backed up by theories (Tongco, 2007). The targeted respondents were the firm's head of research and development department, head of operations, head of business development or head of marketing. These respondents were chosen because they are responsible for spearheading product effectiveness and process efficiency in manufacturing firms (Helfat and Peteraf, 2009). This accounted for 3 respondents per company and therefore a total of 81 respondents were targeted.

3.6 Data Collection Method

This study made use of primary data which was collected through structured questionnaires. The researcher administered the questionnaires through hand delivered hard copies. The questionnaire were divided into three sections. The first section captured the respondents' profile. The second section covered the influence of dynamic capabilities on firm performance by specifically capturing the influence of sensing capabilities on firm performance as well as seizing capabilities and reconfiguration capabilities on firm performance. The third section captured firm performance by focusing on product effectiveness and process efficiency.

A Likert scale was used to capture the perception of the managers on the influence of dynamic capabilities on firm performance. A Likert scale is suitable in measuring attitudes and feelings in organizational research (Sekaran & Bougie, 2009).

3.7 Research Quality

The research quality of this study was tested in terms of reliability and validity. Validity is the extent to which questions in an instrument correctly measure the variables being tested (Yin, 1994). It involves testing the appropriateness of the questionnaire by involving the research supervisor and a panel of judges (Cooper & Schindler, 2010). Reliability is the consistency of a measuring instrument (Kabiru & Njenga, 2009). Cronbach's alpha determines the internal consistency of the survey instrument used. It is mainly employed when the research has multiple Likert questions in a survey/questionnaire that form a scale, similar to the one used in this study (Mugenda & Mugenda, 2010). The Alpha can take values from 0 to show lack of internal consistency to 1 which indicates high internal consistency. Cronbach's alpha coefficient of 0.60 and above is adequate for further analysis (Hair, Anderson & Tatham, 1998; Gliem & Gliem, 2003).

A panel of judges and the research supervisor attested to the content validity of the questionnaire to evaluate whether all concepts in the variables had been captured effectively (Kidder & Judd, 1986). A pilot study of 11 participants from the manufacturing industry who later did not participate in the study helped to measure the consistency reliability test, used to prove the consistency of respondents' answers to all the items in a measure (Sekaran & Bougie, 2009). Sensing capability had a Cronbach's alpha value of (α) = 0.671, seizing capability (α) = 0.676 and reconfiguration capability (α) = 0.636. The three variables had an overall Chronbach's alpha value of (α) = 0.661. This value slightly exceeds the value recommended by Hair et al. (1998) of above 0.6, making the items measuring dynamic capabilities reliable. The variables measuring firm performance had a Cronbach's alpha value of (α) = 0.776. The higher the coefficients, the better the measuring instrument (Sekaran & Bougie, 2009). In this study, a Cronbach Alpha value of 0.72 was accepted as a sound and reliable measure.

3.8 Data Analysis

The data analysis process began with data preparation which is an activity that ensures accuracy of the data and their conversion from raw form to reduced and classified forms that are more appropriate for analysis (Cooper & Schindler, 2008). The first step included coding which involved assigning

a number to the participants' responses so they can be entered into a database (Sekaran & Bougie, 2009). The responses were coded by using the actual number ticked against from Section II to Section V. Responses in Section I were coded as follows; Position was coded as , Research and Development manager (1), Operations manager (2), Business Development manager (3), Marketing manager (4). After coding, data entry was done through SPSS where each row represented a respondent and each column represented all the different items of information collected. Data editing was then conducted to ensure that blank responses, if any, and any inconsistent data such as outliers, illogical or illegal data were checked and followed up (Sekaran & Bougie, 2009). The edited data was then analysed through quantitative and descriptive means. This was done through frequencies, measures of central tendency and dispersion such as mean, variance, standard deviation, relationship between variables, correlations and multiple regression analysis.

Correlation established the nature, direction and significance of the bivariate relationships of the variables used in the study and were confirmed by the Chi-square test using the formula below (Sekaran & Bougie, 2009):

$$x^2 = \Sigma \frac{(\mathrm{Oi} - \mathrm{Ei})^2}{\mathrm{Ei}}$$

Bivariate regression analysis was used to establish the relationship between the variables and to explore research questions (Cooper & Schindler, 2008). Based on the conceptual framework, the relationship between the variables was expressed by the equation below:

$\mathbf{F_p = } f \mathbf{(SENS_{st})}$

$\mathbf{F_p = } f \mathbf{(SEIZ_{st})}$

$\mathbf{F_p = } f \mathbf{(RECO_{st})}$

The resultant equation was:

Therefore:

$\mathbf{Fp = \beta 0 + \beta 1 SENSSt + \varepsilon i}$

$\mathbf{Fp = \beta 0 + \beta 2 SEIZSt + \varepsilon i}$

$\mathbf{Fp = \beta 0 + \beta 3 RECOSt + \varepsilon i}$

$Fp = \beta 0 + \beta 1 SENSSt + \beta 2 SEIZSt + \beta 3 RECOSt + \varepsilon i$

Where:

F_P = Firm performance

$\beta 0$ = the Y intercept (regression constant)

$SENS_{st}$ = Sensing capabilities

$SEIZ_{st}$ = Seizing capabilities

$RECO_{st}$ = Reconfiguration capabilities

Table 3.1: Data Analysis

Objective	Data analysis
i) To establish the influence of sensing capabilities on firm performance in the Kenyan listed manufacturing firms.	Correlation analysis and regression analysis
ii) To determine the influence of seizing capabilities on firm performance in the Kenyan listed manufacturing firms.	Correlation analysis and regression analysis
iii) To determine the influence of reconfiguration capabilities on firm performance in the Kenyan listed manufacturing firms.	Correlation analysis and regression analysis

Source: Researcher, (2019)

3.9 Ethical Consideration

The researcher disclosed the purpose of the study to the respondents to avoid deception. This was articulated in the letter of introduction (see appendix 1). The respondents' rights and well-being was adequately protected, ensuring that they faced no physical or emotional harm. The researcher also applied for an ethical review with the Strathmore University Institutional Ethics Review Committee and NACOSTI.

CHAPTER FOUR

DATA ANALYSIS, FINDINGS AND INTERPRETATION

4.1 Introduction

This chapter aims to interpret and analyse the results against existing theories and previous research. This chapter presents the findings in tabulated and narrative forms and addresses the objectives. Section 4.2 and 4.3 will address the response rate and demographics as well as presentation of general information from the questionnaire findings. Section 4.7. Presents the results of the relationship between firm performance and dynamic capabilities.

4.2 Response Rate

The initial data consisted of 27 Kenyan listed manufacturing firms selected from the Nairobi Securities Exchange classification as at November 2018. A total of 81 questionnaires (3 questionnaires per company for the 27 listed manufacturing firms) were sent out but 17 were not fully completed, therefore not used in this study. In this regard, only 64 responses were used in the analysis giving a sample rate of 79%. A response rate of 60% is stated to be sufficient in research (Fowler, 1984).

Table 4.1. Response Rate

Efficacy parameter	**Frequency**	**Percentage**
Responded	64	79%
Did not respond	17	21%
Total	**81**	**100%**

Source: Survey Data (2019)

4.3 Demographics of Respondents

The study investigated the demographic profile of the respondents, specifically focusing on the position held in the organization, number of years served and the manufacturing sector the firm belonged to as classified in the Nairobi Securities Exchange (2018).

4.3.1 Position Held within the Organization

The study investigated the position held by the respondents, specifically focusing on Research and Development manager, Operations manager, Business Development manager and Marketing manager. The data collected is as below:

Table 4.2. Position Held in the Organization

Position held in the firm	Frequency	Percentage %
Research and Development Manager	17	27%
Operations Manager	20	31%
Business Development Manager	14	22%
Marketing Manager	13	20%
Total	**64**	**100%**

Source: Survey Data (2019)

The data reveals that out of the respondents who work in the Kenyan listed manufacturing firms, majority who responded were Operations managers, accounting for 20 responses, followed by Research and Development managers, accounting for 17 responses while Marketing managers and Business Development Mangers comprised 42% of the total respondents, each accounting for 14 and 13 responses respectively.

4.3.2 Number of Years Served in the Organization

The study also sought to establish the number of years served by each respondent within the organization. The findings as indicated in Table 4.3 below indicate that the majority of the respondents have worked in the Kenyan listed manufacturing firms for less than 10 years while 39% of the respondents have worked for more than 10 years.

Table 4.3. Period of Service

Period	Frequency	Percentage%
More than 10 years	25	39%
Less than 10 years	39	61%
Total	**64**	**100%**

Source: Survey Data (2019)

4.4 Sensing Capability and Firm Performance

This study sought to establish the influence of sensing capability on firm performance of Kenyan listed manufacturing firms. Firm performance was measured through the firm's process efficiency and product effectiveness. The study used a 5 point Likert scale where 5=strongly agree, 4=agree, 3=neutral, 2=disagree, 1=strongly disagree to determine the respondents level of agreement with

the various statements regarding the relationship between sensing capability and firm performance within the Kenyan manufacturing industry. The results are presented in Table 4.4 below:

Table 4.4. Sensing Capability and Firm Performance

Statement	Mean	SD	Percentage%
1. Thoroughly observing technological trends has helped us gain strategic advantage over our competitors	4.67	0.565	95%
2. Scanning the environment for new technologies has helped us realize new product needs.	4.64	0.601	94%
3. Thorough collection of industry information has boosted our process efficiency.	2.64	1.160	74%
4. Benchmarking ourselves with the global industry (that is worldwide manufacturing companies) has helped us improve our product quality	4.69	0.500	98%
5. We periodically review the likely effect of changes in our business environment on customers.	4.38	0.807	80%

Source: Survey data (2019)

The findings in the study show that sensing capabilities result in improvement of product effectiveness of the listed manufacturing firms in Kenya notably through scanning the environment for new technology. Thoroughly observing technological trends has helped 95% of the firms gain strategic advantage over their competitors. 98% of the listed manufacturing firms realized improved product quality by benchmarking themselves with global players in the same industry. 80% of the listed manufacturing firms noted that they periodically review the likely effect of changes in their business environment on customers. However, 74% of the firms strongly disagree that a thorough collection of industry information has boosted their process efficiency. These findings seem to suggest that listed manufacturing firms do make use of sensing capabilities, as they see the importance of scanning the environment for opportunities, but they however do not believe that it has a direct impact on firm performance.

4.5 Seizing Capability and Firm Performance

This study sought to determine the influence of seizing capability on performance of the listed Kenyan manufacturing firms. Firm performance was measured through the firm's process efficiency and product effectiveness. The study used a 5 point Likert scale where 5=strongly agree, 4=agree, 3=neutral, 2=disagree, 1=strongly disagree to determine the respondents level of agreement with the various statements regarding the relationship between seizing capability and firm performance within the manufacturing industry. The results are presented as below:

Table 4.5 Seizing Capability and Firm Performance

Statement	Mean	SD	Percentage
1. Integrating new knowledge in our existing knowledge base has boosted our process efficiency.	4.44	0.852	89%
2. Regularly matching new market opportunities with ideas for new products has helped us create unique products that are priced well.	4.72	0.487	98%
3. Recognizing links between new technological knowledge and existing knowledge has boosted our process efficiency.	4.38	0.745	88%
4. We have invested in new assets due to information obtained from industry research which have impacted our product quality.	4.70	0.525	97%
5. We constantly consider how to better exploit technologies to help develop quality products.	4.34	0.761	83%

Source: Survey data (2019)

The findings in the study show that listed manufacturing firms have boosted their process efficiency by integrating new knowledge in their existing knowledge. Recognizing links between new technological knowledge and existing knowledge has also boosted process efficiency for 88% of firms. Product effectiveness has been enhanced in 97% of the firms by investing in new assets due to information obtained from industry research and constantly considering how to better exploit technologies. Regularly matching new market opportunities with ideas of new products has helped 98% of firms create unique products which has enhanced product effectiveness. These findings seem to suggest that seizing capability improves firm performance as evidenced by the improvement of product effectiveness and process efficiency.

4.6 Reconfiguration Capability and Firm Performance

This study sought to determine the influence of reconfiguration capability on performance of the listed Kenyan manufacturing firms. Firm performance was measured through the firm's process efficiency and product effectiveness. The study used a 5 point Likert scale where 5=strongly agree, 4=agree, 3=neutral, 2=disagree, 1=strongly disagree to determine the respondents level of agreement with the various statements regarding the relationship between reconfiguration capability and firm performance. The results are presented in Table 4.6 below:

Table 4.6 Reconfiguration Capability and Firm Performance

Statement	Mean	SD	Percentage
1. We have flexibly reworked our organizational structure which has boosted our process efficiency	2.13	0.882	67%
2. We actively renew our innovation processes over time to enhance our competitive position.	3.45	1.221	78%
3. We constantly redesign our business model to help optimize our technology management in a dynamic environment which leads to effective products	2.03	0.942	69%
4. We actively conduct asset-realignment to increase our process efficiency.	2.00	0.959	72%
5. We revamp our research and development activities and routines to address new product demands which lead to product effectiveness.	1.91	0.771	78%
6. We are satisfied with the costs associated with asset realignment and restructuring.	1.01	0.621	98%
7. We have realized improvement in performance within 10 -15 years attributed to the long term recombination of resources	1.11	0.231	98%

Source: Survey data (2019)

The findings in the study show that 67% of the listed manufacturing firms do not flexibly rework their organizational structure when working towards boosting process efficiency. A similar trend is noted for redesigning their business models to boost their product effectiveness and asset-realignment to boost their process efficiency; both recording a 69% and 72% respectively. The listed manufacturing firms also disagreed to constantly revamping their research and development routines in a bid to enhance their product effectiveness. 78% of the firms however agreed to actively renewing their innovation processes over time to enhance their competitive position. 2% of the firms were satisfied

with the costs associated with asset realignment and realized firm performance improvement in 10-15 years. These findings seem to suggest that listed manufacturing firms do not explore the full length of reconfiguration capabilities as they consider it costly since it involves reworking the organizational structure, revamping routines and redesigning their business models.

4.7. Firm Performance

The influence of the dynamic capabilities on firm performance selected was measured through the firm's process efficiency and product effectiveness. Which is measured through a 5 point Likert scale where 5=strongly agree, 4=agree, 3=neutral, 2=disagree, 1=strongly disagree to determine the respondents level of agreement with the various statements displaying firm performance through product effectiveness and process efficiency. The results are presented in the tables below:

Table 4.7 Product Effectiveness

	Product effectiveness	**Mean**	**S.D**	**%**
1	Our organization overall innovative products have increased as a result of the reconfiguration capabilities.	4.66	0.597	94%
2	Our uptake of sensing capabilities has facilitated optimal product development seasonally	4.45	0.733	86%
3	New products resulting from reconfiguration capabilities meet quality and functionality guidelines	4.38	0.745	84%
4	There is high uptake of new product offerings by customers resulting from reconfiguration capabilities	4.77	0.427	79%
5	New products resulting from seizing capabilities improve the firms margins	4.80	0.406	98%
	Overall	**4.61**	**0.582**	**88%**

Source: Survey data (2019)

94% of the firms owe their increase in innovative products to the use of reconfiguration capabilities. 86% of the firms owe their seasonal optimal product development to the use of sensing capabilities. Product effectiveness is optimal and quality guidelines are met resulting in increased uptake of the firm products as noted by 79% of the firms. 98% of the firms noted that the new products resulting from seizing capabilities improved their firm margins. The findings in the study seem to suggest that product effectiveness improves when firms make use of dynamic capabilities.

Table 4.8 Process Efficiency

	Process efficiency	Mean	S.D	%
1	The seizing capabilities have enabled our organization to minimize costs for a given quantity of output.	1.63	0.724	86%
2	The reconfiguration capabilities has enabled our organization to maximize profits for a given combination of resources.	4.44	0.710	88%
3	The seizing capabilities has enabled our organization achieve an accelerated time-to-market for our products.	4.28	0.723	84%
4	Overall organization efficiency has increased as a result of the reconfiguration capabilities.	4.47	0.666	91%
	Overall	**3.71**	**0.706**	**87%**

Source: Survey data (2019)

The findings in the study show that process efficiency improves and 84% of the firms are able to offer an accelerated time-to-market for their products when they make use of dynamic capabilities. 91% of the firms also note that overall organization efficiency has increased and some of it is owed to reconfiguration capabilities. However, 86% of the firms disagree to cost minimization for a given quantity of outputs through seizing capabilities. The findings seem to suggest that process efficiency improves as a result of employing dynamic capabilities.

4.8 Summary of Mean Scores

The influence of dynamic capabilities on firm performance in this study was evaluated through sensing, seizing and reconfiguration capabilities. Sensing capability has a mean of 4.20, while seizing capability has a mean of 4.52. Reconfiguration capability has a mean score of 1.96. The results are presented in table 4.9 below:

Table 4.9: Summary of Mean Scores

Dynamic capabilities	Mean
Sensing capability	4.20
Seizing capability	4.52
Reconfiguration capability	1.96
Firm performance	4.16

Source: Survey data (2019)

4.9. Inferential Statistics

The link between the independent and the dependent variables was assessed through the use of inferential statistics. The section below displays inferential statistics used to make comparisons and examine research questions as well as relationships in the study. The researcher made use of SPSS Version 22 for data analysis.

4.9.1 Correlation Analysis

The distribution of the correlation variables was tested with the range between negative 1 to positive one. Positive 1 indicates a perfect positive correlation while negative 1 indicates a perfect negative correlation and zero represent no correlation. Yue, Pillon and Cavadias (2002) noted that the range between 0.00 to 0.19 is considered to be very weak, while 0.20 to 0.39 is weak, 0.40 to 0.59 is moderate, 0.60 to 0.79 is strong and 0.80 to 1.0 is very strong (Yue, Pillon & Cavadias, 2002). The correlation matrix was used to determine the extent to which changes in the value of one attribute was associated with changes in another attribute. The Table 4.10 below displays the correlation analysis.

Table 4.10 Correlations Analysis

Correlations

		Firm_Performance	Sensing_ Capability	Seizing_ Capability	Reconfiguration _Capability
Firm_Performance	Pearson Correlation	1	.270*	.428**	-.265*
	Sig. (2-tailed)		.031	.000	.034
	N	64	64	64	64
Sensing_Capability	Pearson Correlation	.270*	1	.346**	.076
	Sig. (2-tailed)	.031		.005	.549
	N	64	64	64	64
Seizing_Capability	Pearson Correlation	.428**	.346**	1	-.050
	Sig. (2-tailed)	.000	.005		.695
	N	64	64	64	64
Reconfiguration_ Capability	Pearson Correlation	-.265*	.076	-.050	1
	Sig. (2-tailed)	.034	.549	.695	
	N	64	64	64	64

*. Correlation is significant at the 0.05 level (2-tailed).

**. Correlation is significant at the 0.01 level (2-tailed).

Source: Survey Data (2019)

The findings in Table 4.10 illustrate the link between the variables under study and indicate a weak positive correlation between sensing capabilities and firm performance, with a correlation coefficient of 0.270 and the same variables being significant with a p value of 0.031. Seizing capability and firm performance have a moderate positive correlation, with the correlation coefficient being 0.428 and the same variables being significant with a p value of 0.000. Reconfiguration capability and firm performance have a weak inverse correlation with a correlation coefficient of -0.265 with the variables being significant with a p value of 0.034. These findings seem to suggest that all the three dynamic capabilities are significant in explaining firm performance. Seizing capability seems to be the most significant in explaining firm performance. Reconfiguration capability seems to have an inverse relationship with firm performance while sensing and seizing capabilities have a direct relationship.

4.9.2 Regression Analysis

The relationship between dynamic capabilities and firm performance was illustrated by the regression analysis. The regression analysis was used to show the dynamic capabilities selected on firm performance. Subsequently, the regression equation was:

$F_p = f(SENS_{st})$

$F_p = f(SEIZ_{st})$

$F_p = f(RECO_{st})$

The resultant equation will be:

Therefore:

$Fp = \beta 0 + \beta 1 SENSSt + \varepsilon i$

$Fp = \beta 0 + \beta 2 SEIZSt + \varepsilon i$

$Fp = \beta 0 + \beta 3 RECOSt + \varepsilon i$

$Fp = \beta 0 + \beta 1 SENSSt + \beta 2 SEIZSt + \beta 3 RECOSt + \varepsilon i$

Where:

F_P = Firm performance

$\beta 0$ = the Y intercept (regression constant)

$SENS_{st}$ = Sensing capabilities

$SEIZ_{st}$ = Seizing capabilities

$RECO_{st}$ = Reconfiguration capabilities

With SENS, SEIZ and RECO being super variables for product effectiveness and process efficiency represented by X1, X2 and X3.

The regression result for the model for the variables is illustrated below:

Table 4.11 Sensing Capability and Firm Performance Regression Results

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.270[a]	.073	.058	.29634

a. Predictors: (Constant), Sensing_Capability

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	.429	1	.429	4.883	.031[b]
	Residual	5.445	62	.088		
	Total	5.873	63			

a. Dependent Variable: Firm_Performance

b. Predictors: (Constant), Sensing_Capability

Coefficients[a]

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	3.464	.338		10.238	.000
Sensing_Capability	.177	.080	.270	2.210	.031

a. Dependent Variable: Firm_Performance

Source: Survey Data (2019)

Table 4.11 above gives a summary of the regression model illustrating the influence of sensing capabilities on firm performance. The correlation coefficient was positive (0.270). The coefficient of determination (R square) of 0.073 implies that 7% of the independent variables can be used to explain firm performance while 93% may be attributed to other factors. An adjusted R square which takes into account the number of parameters in the model shows that 6% of the independent variables can be used to explain firm performance and the rest was due to other factors.

From the ANOVA table above, the p value was equal to 0.031 which is less than 0.05. Therefore, the model was statistically significant at a 95% confidence level.

The coefficients table shows that sensing capability is statistically significant in the model for firm performance where the p value was less than 0.05. When all factors remain constant, sensing capability increases firm performance by 18%. The optimum model for the influence of sensing capabilities on firm performance was:

$Fp = \beta 0 + \beta 1X1$

$Fp = 3.464 + 0.177X1$

These findings seem to suggest that sensing capability is significant in explaining firm performance and it explains 7% of change in firm performance. It also suggests that firms can increase performance by 18% if they make use of sensing capability.

Table 4.12 Seizing Capability and Firm performance Regression Results

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.428[a]	.184	.170	.27811

a. Predictors: (Constant), Seizing_Capability

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	1.078	1	1.078	13.938	.000[b]
	Residual	4.795	62	.077		
	Total	5.873	63			

a. Dependent Variable: Firm_Performance

b. Predictors: (Constant), Seizing_Capability

Coefficients[a]

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	2.970	.333		8.922	.000
Seizing_Capability	.274	.073	.428	3.733	.000

a. Dependent Variable: Firm_Performance

Source: Survey Data (2019)

Table 4.12 above gives a summary of the regression model. The correlation coefficient was positive (0.428). The coefficient of determination (R square) of 0.184 implies that 18% of the independent variables can be used to explain firm performance while 82% may be attributed to other factors. An adjusted R square which takes into account the number of parameters in the model shows that 17% of the independent variables can be used to explain firm performance and the rest was due to other factors. From the ANOVA table above, the p value was equal to 0.000 which is less than 0.05. Therefore, the model was statistically significant at a 95% confidence level. From the coefficients table, seizing capability was statistically significant in explaining the overall relationship with firm performance in the model at 5% significance level since the p values was below 0.05. When all factors are left constant,

seizing capability increases firm performance by 27%. The optimum model for the influence of seizing capabilities on firm performance was:

$Fp = \beta 0 + \beta 2X2st$

$Fp = 2.970 + 0.274X2$

These findings seem to suggest that seizing capability is significant in explaining firm performance and it explains 18% of change in firm performance. It also suggests that firms can increase performance by 27% if they make use of seizing capability.

Table 4.13 Reconfiguration Capability and Firm Performance Regression Results

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.265[a]	.070	.055	.29680

a. Predictors: (Constant), Reconfiguration_Capability

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	.412	1	.412	4.674	.034[b]
	Residual	5.462	62	.088		
	Total	5.873	63			

a. Dependent Variable: Firm_Performance

b. Predictors: (Constant), Reconfiguration_Capability

Coefficients[a]

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	4.573	.174		26.338	.000
Reconfiguration_Capability	-.159	.074	-.265	-2.162	.034

a. Dependent Variable: Firm_Performance

Source: Survey Data (2019)

Table 4.13 above gives a summary of the regression model. The correlation coefficient was positive (0.265). The coefficient of determination (R square) of 0.070 implies that 7% of the independent variables can be used to explain firm performance while 93% may be attributed to other factors. An adjusted R square which takes into account the number of parameters in the model shows that 6% of the independent variables can be used to explain firm performance and the rest was due to other factors.

From the ANOVA table above, the p value was equal to 0.034 which is less than 0.05. Therefore, the model was statistically significant at a 95% confidence level.

From the coefficients table above, reconfiguration capability is statistically significant in the model for firm performance where the p value was less than 0.05. When all factors are kept constant, reconfiguration capability reduces performance by 16%. The optimum model for the influence of reconfiguration capabilities on firm performance was:

$Fp = \beta 0 + \beta 3X3st$

$Fp = 4.573 - 0.159X3$

These findings seem to suggest that reconfiguration capability is significant in explaining firm performance and it explains 7% of change in firm performance. It however also suggests that firms reduce performance by 16% if they make use of reconfiguration capability.

Table 4.14 Dynamic Capabilities and Firm Performance Regression Results

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.517[a]	.267	.230	.26786

a. Predictors: (Constant), Reconfiguration_Capability, Seizing_Capability, Sensing_Capability

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	1.568	3	.523	7.286	.000[b]
	Residual	4.305	60	.072		
	Total	5.873	63			

a. Dependent Variable: Firm_Performance

b. Predictors: (Constant), Reconfiguration_Capability, Seizing_Capability, Sensing_Capability

Coefficients[a]

Model	Unstandardized Coefficients B	Unstandardized Coefficients Std. Error	Standardized Coefficients Beta	t	Sig.
(Constant)	3.076	.410		7.510	.000
Sensing_Capability	.109	.077	.166	1.404	.165
Seizing_Capability	.229	.076	.358	3.029	.004
Reconfiguration_Capability	-.156	.067	-.260	-2.334	.023

a. Dependent Variable: Firm_Performance

Source: Survey Data (2019)

Table 4.14 above gives a summary of the regression model. The correlation coefficient was positive (0.517). The coefficient of determination (R square) of 0.267 which implies that 27% of the independent variables can be used to explain firm performance while 73% may be attributed to other factors. An adjusted R square which takes into account the number of parameters in the model shows

that 23% of the independent variables can be used to explain firm performance and the rest was due to other factors.

From the ANOVA table above, the p value was equal to 0.000 which is less than 0.05. Therefore, the model was statistically significant at a 95% confidence level.

From the coefficients table above seizing and reconfiguration capabilities are statistically significant in the model for firm performance where the p value was less than 0.05. Sensing capability was statistically insignificant where p value was greater than 0.05. When all factors are kept constant, sensing capability increases firm performance by 11%, while seizing capability icreases firm performance by 23% and reconfiguration capability reduces firm performance by 16%. The optimum model for the influence of dynamic capabilities on firm performance was:

$$Fp = \beta 0 + \beta 1 SENSSt + \beta 2 SEIZSt + \beta 3 RECOSt + \varepsilon i$$

$$Fp = 3.076 + 0.109 SENSst + 0.229 SEIZst - 0.156 RECOst$$

The findings of this study suggest that a moderate relationship exists between the dynamic capabilities and firm performance; and they are all significant in explaining firm performance except Sensing capability. It however also suggests that as much as firms could increase their performance when making use of certain dynamic capabilities, they could also end up reducing performance by using certain capabilities.

CHAPTER FIVE

DISCUSSIONS, CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

This chapter presents a summary of the study and highlights the objectives and methods used in analysing the specific objectives. Additionally, the chapter offers a summary of the findings and implications drawn from the conclusion of the study. Lastly it explores the limitations of this study and gives ideas for further research.

5.2 Discussion of the Findings

This section presents the discussion of the findings based on the research objectives.

5.2.1 Sensing Capability and Firm Performance in Kenyan Listed Manufacturing Firms

The first objective sought out to establish the influence of sensing capability on firm performance in Kenyan listed manufacturing firms. The survey established that sensing capability was the most prescribed to dynamic capability. This agrees with Hernández-Linares, Kellermanns and López-Fernández (2018) who found a high number of firms make use of sensing capability, both consciously and subconsciously, due to the innate pressure of a firm to stay ahead in a constantly changing environment.

The findings indicate that there is a positive correlation between sensing capability and firm performance. They further indicate, through the regression analysis, that sensing capability influence firm performance positively. These findings agree with Breznik et al. (2014) who posit that sensing capability can stimulate firm performance as it causes a firm to constantly benchmark itself with other firms in the industry, resulting to a reconfiguration of processes.

The regression coefficient indicate that firm performance increases and or improves when manufacturing firms make use of sensing capability. This agrees with Gudelgarn and Wilden (2015) who found that manufacturing firms better their firm performance by constantly reviewing their environment to better understand their customer product needs. In addition, this further supports Costello et al. (2016) who also found that sensing capability ensures that firms especially

in the manufacturing sector, boost their product effectiveness as they stay ahead of competitors in terms of product pricing, quality and this affects the general firm performance.

Further, the regression coefficient indicates that process efficiency increases and or improves when firms make use of sensing capability. This is consistent with Devinney et al. (2016) who found that firm participation in sensing capability facilitated improvement in process efficiency in pharmaceutical firms as a result of gaining new information on how to perform tasks more efficiently while using new technology and technical know-how that the firm previously had no access to.

Sensing capability was highly made us of by listed manufacturing firms due to the dynamic environment which requires them to scan the competitor moves in terms of technology, product features and standards of quality. These manufacturing firms associated improved performance for their firms on the frequency of the use of sensing capability, which in turn was associated with higher research and development costs. Subsequently, higher research and development costs affected firm performance negatively for some firms. This agrees with Senaratne et al. (2014) who state that in spite of the positive attributives of sensing capabilities and of increasing the firm's portfolio, there is a certain point at which the marginal cost of managing the dynamic capabilities becomes higher than the expected benefit. Firms end up obsessing over staying ahead and being informed which then sky rockets their research and development costs (Schilke, 2013). This causes the industry to perform dismally as compared to other sectors which do not necessarily make use of dynamic capabilities (Barreto, 2010).

5.2.2 Seizing Capability and Firm Performance in Kenyan Listed Manufacturing Firms

The study sought out to investigate the extent to which seizing capability influence firm performance. The findings indicate that there is a positive correlation between seizing capability and firm performance. Further, the regression analysis illustrated that seizing capability influence firm performance positively. These findings agree with Ambrosini and Bowman (2009) who posit that a high absorptive or seizing capability leads to superior firm performance.

The regression coefficient indicate that firm performance increases and or improves when manufacturing firms make use of seizing capability. This agrees with Zahra and George (2002) who found that manufacturing firms better their product effectiveness by constantly making use of

the adequate knowledge and information obtained from the sensing capability. This further supports Lichtenthaler (2012) who also found that seizing capability ensures that firms come up with new products after taking up new assets from information obtained from the sensing capability. In addition, Schilke (2013) found that manufacturing firms address environment opportunities by maintaining and improving technological competences, processes and complementary assets which then leads to operational and process efficiency.

The high percentage of firms making use of the seizing capability attributed it to achieving superior firm performance by capturing value from market success which was innovation based. In particular, this was consistent with Heeley et al. (2007) and Teece (2007) who found that seizing capabilities determine to what degree innovation opportunities that have been identified or generated are achieved.

The findings also established that seizing capability does not stand alone but rather, require the firm to embrace learning across groups and individuals throughout the organization. This is consistent with Easterby-Smith et al. (2008) who found that acquiring seizing capabilities is necessary but not sufficient for superior firm performance; however, learning across individuals, groups, and organizational boundaries must also occur for such capabilities to change firm performance. In addition, Schulze and Brojerdi (2012) agreed that not only should knowledge be transferred throughout the organization, but it must also be integrated with other knowledge areas, and applied to a new product or process to affect firm performance.

5.2.3 Reconfiguration Capability and Firm Performance in Kenyan Listed Manufacturing Firms

The study sought out to investigate the extent to which reconfiguration capability influence firm performance. The descriptive analysis illustrated that process efficiency had a significant influence on firm performance due to the use of reconfiguration capability. The correlation analysis illustrate a positive correlation between reconfiguration capability and firm performance. In addition, the regression analysis indicate a negative correlation between reconfiguration capability and firm performance.

The impact of reconfiguration capability on firm performance indicates a negative or an inverse relationship illustrating that when manufacturing firms make use of reconfiguration capability,

firm performance decreases. This findings are in line with Teece (2007) who found that a key to sustained performance growth can be attributed to the ability to recombine and to reconfigure assets and organizational structures as the enterprise grows, and as markets and technologies change. Wilden and Gudergan (2015) also noted that reconfiguration capability had a great impact on firm performance and were key to market survival.

Descriptive mean on asset reconfiguration and redeployment indicate that firm performance reduces when firms fail to engage in reconfiguration through continuous or at least semi-continuous reconfiguration and asset redeployment to leverage process efficiency which then enables them achieve higher product effectiveness. This was supported by Koufteros et al. (2002) who found that firms need to improve their asset reconfiguration capabilities in their product effectiveness and process efficiency function to enhance their firm performance.

Findings from the study show that firms using sensing and seizing capabilities expressed more emphasis on the use of reconfiguration capability albeit the capital outlay and pre-requisite operational financial outlay required remained a hindrance to those who could not afford it. Although, asset reconfiguration enabled this firms to enhance product effectiveness which in most cases enabled them to charge a premium for their products, it was notable that this was attached to an unequivocal cost in terms of operational costs related to maintaining the standards set out by the reconfiguration strategy and structure. These firms earn a relatively high revenue but the costs related to reconfiguration processes erodes the trading profit.

Reconfiguration capability participants were involved in maintaining a long term view of performance, having experienced their first benefits of reconfiguration after a span of 10 to 15 years. This agrees with Phung et al. (2017) who found that firms can significantly gain by focusing on the long term benefits of making use of reconfiguration capabilities rather than considering the short term operational costs.

5.2.4 Dynamic Capabilities and Firm Performance in Kenyan Listed Manufacturing Firms

The study sought out to investigate the extent to which dynamic capabilities influence firm performance. Majority of the listed manufacturing firms were engaged in dynamic capabilities with only 8% of the firms in the study not showing a significant use of dynamic capabilities.

Amongst the firms that partake in dynamic capabilities, the majority were involved in sensing capabilities while the remaining were involved in seizing and reconfiguration capabilities.

The findings indicate that there is a positive correlation between sensing, seizing and reconfiguration capabilities and firm performance. Further, the regression analysis illustrated that sensing and seizing capabilities influence firm performance significantly and positively improving firm performance. In addition, reconfiguration capabilities reduced firm performance.

The regression coefficient indicate that firm performance increases and or improves when manufacturing firms engage in sensing and seizing capabilities. This corresponds with the findings of Peteraf et al. (2013), who noted that the use of these dynamic capabilities tends to be valuable. In addition, Winter (2012) also found that there could be an appreciable and difficult-to-imitate value added to the most experienced firms by making use of dynamic capabilities.

The firms in the study associated improved performance on the frequency in use of dynamic capabilities, which in turn was associated with higher short term operational costs, hence the negative influence of reconfigurational capability on firm performance. Subsequently, higher operational costs affected firm performance negatively. This agrees with Senaratne et al. (2014) who state that in spite of the positive attributives of dynamic capabilities and of reconfiguring the firm's assets and processes, there is a certain point at which the marginal cost of managing the learning and reconfiguration becomes higher than the expected benefit.

5.3 Conclusion

Conclusively, the results of the study point out that the dynamic capabilities influenced firm performance within the period under study with sensing and seizing capabilities influencing firm performance positively and reconfiguration capabilities influencing firm performance negatively. However, for the firms involved in the use of dynamic capabilities, especially reconfiguration, attached were additional related operational costs that affect the bottom line of the manufacturing firms. In addition, the results of this study illustrated that process efficiency and product effectiveness positively influenced firm performance as a result of dynamic capabilities.

The results of this study further indicated that process efficiency were factors directly attributable to firm performance in manufacturing firms. Therefore, in determining the influence of dynamic

capabilities on firm performance in the Kenyan listed manufacturing firms, the study established a positive relationship that suggests that firms are knowledgeable and keen on dynamic capabilities as a means of attaining competitive advantage and superior firm performance. Pujari et al. (2016) noted that dynamic capabilities significantly and positively influence the competitiveness of an organization resulting in reconfiguration and recombination of processes and assets, which are a source of long term superior firm performance.

5.4 Recommendations

The findings indicate that manufacturing firms make use of sensing capabilities because of their relatively lower operational cost and ease of use. However, majority of those using sensing capabilities, take part in seizing and reconfiguration capabilities to take advantage of the information they gain from their sensing capabilities, although they don't fully maximize it due to the operational cost and on ground learning efforts required to make it consistent and sustainable. This gives a strong indication that dynamic capabilities are common in the manufacturing industry as a means of gaining good firm performance.

Based on the findings, the study recommends that firm managers need to ensure that they stress on the importance of learning in individuals, groups and every department to ensure that all the information obtained in the scanning or sensing process is turned into knowledge and absorbed into new asset acquisitions. Managers also need to ensure that they focus on the long term benefits derived from taking part in the recombination and reconfiguration process, maintaining a balance of their exploratory and exploitative efforts. They need to ensure that their exploitative efforts do not adversely affect the operational profit otherwise engaging in dynamic capabilities becomes counter-productive.

5.5 Limitation of the Study

This study provides useful insight into the influence of dynamic capabilities on firm performance. The study made use of product effectiveness and process efficiency to gauge performance. It would be valuable to consider more performance measures apart from the two. In addition the study made use of a structured questionnaires to collect data which may have limited the respondents' responses. Finally, the focus was on the listed manufacturing firms in Kenya, it would be valuable in the future to focus on all manufacturing firms irrespective of whether they are listed as this would provide a broader

perspective on the dynamic capabilities existing in the manufacturing industry as well as their influence on firm performance.

5.6 Suggestions for Future Research

The influence of asset reconfiguration on long term firm performance could be studied to help establish whether the perceived benefits of forfeiting the short term benefits in the use of dynamic capabilities is worth it. In addition, the focus of this study was on the manufacturing industry, future research can be done on different industries which have a great effect on the economy. Also, alternative research designs and analysis methods can be used to determine whether they shall yield the similar results. Moreover, this study can be replicated in other countries especially those whose economies are heavily reliant on the manufacturing industry in order to demonstrate the significance of the influence of dynamic capabilities on firm performance.

Also, the study focused on sensing, seizing and reconfiguration capabilities, while it is notable that numerous types of dynamic capabilities exist. It would be important to explore these dynamic capabilities in the manufacturing industry. More research also needs to be done on the cost of dynamic capabilities based on their complexity, scope and frequency. Lastly, this study was cross-sectional in nature, future research should consider a longitudinal study to determine the long term effects of dynamic capabilities on firm performance so as to determine the causal linkages of the relationship testing identified in the cross sectional design.

REFERENCES

Alvarez, G. M., Burgos, J. J., & Céspedes, L. J. (2001). An analysis of environmental management, organizational context and performance of Spanish hotels. *Omega*, 457–471.

Ambrosini, V., Bowman, C., & Collier, N. (2009). Dynamic capabilities: An exploration of how firms renew their resource base. *British Journal of Management*, 9-S24.

Arend, R., & Bromiley, P. (2009). Assessing the dynamic capabilities view: spare change, everyone? *Strategic Organization*, 75-90.

Augier, M., & Teece, D. J. (2009). Dynamic capabilities and the role of managers in business strategy and economic performance. *Organization Science*, 410-421.

Barney, J. (1991). Firm resources and sustained competitive advantage. *Journal of Management*, 99-120.

Barney, J., Ketchen, D., & Wright, M. (2011). The future of resource-based theory: Revitalization or decline? *Journal Management*, 1299-1315.

Barreto, I. (2010). Dynamic capabilities: a review of past research and an agenda for the future. *Journal of Management*, 256-280.

Breznik, L., & Lahovnik, M. (2014). Renewing the resource base in line with the dynamic capabilities view: a key to sustained competitive advantage in the IT industry. *East European Management Studies*, 453-485.

Bruni, D. S., & Verona, G. (2009). Dynamic marketing capabilities in science-based firms: An exploratory investigation of the pharmaceutical industry. *British Journal of Management*, 101-117.

Chesbrough, H. (2006). *Open business models: How to thrive in the new innovation landscape* . Boston, MA: Harvard Business School Press.

Clark, K., & Fujimoto, T. (1991). *Product development performance.* Cambridge , MA: Harvard Business School Press.

Cooperatives, M. o. (2018, November 28). *Vision 2030 Manufacturing Sector*. Retrieved from Industrialization: http://www.industrialization.go.ke/index.php/vision-2030-manufacturing-sector

Creswell, J. (2003). *Research Design: Qualitative, Quantitative, and Mixed Methods Approaches.* Massachusetts: Sage.

Dacko, S. G., Liu, B. S., Sudharshan, D., & Furrer, O. (2008). Dynamic capabilities to match multiple product generations and market rhythm. *European Journal of Innovation Management*, 441–471.

Danneels, E. (2002). 'The dynamics of product innovation and firm competences'. *Strategic Management Journal*, 1095–1121.

Day, G. S. (1994). The capabilities of market-driven organizations. *Journal of Marketing*, 37-52.

Day, G., & Wensley, R. (1988). A framework for diagnosing competitive superiority. *The Journal of Marketing*, 1-20.

Di Benedetto, A. (1990). Identifying the key success factors in new product launch. *Journal of Product Innovation Management*, 530-544.

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*, 1187–1204.

Drnevich, P. L., & Kriauciunas, A. P. (2011). Clarifying the conditions and limits of the contributions of ordinary and dynamic capabilities to relative firm performance. *Wiley*, 254-279.

Eisenhardt, K., & Martin, J. (2000). Dynamic capabilities: what are they? *Strategic Management Journal*.

Fainshmidt, S., & Frazier, M. L. (2017). What facilitates dynamic capabilities? The role of organizational climate for trust. *Long Range Planning*, 550-566.

Fainshmidt, S., Wenger, L., Pezeshkan, A., & Mallon, M. (2018). When do Dynamic Capabilities Lead to Competitive Advantage? The Importance of Strategic Fit. *Journam of Management studies*, 6-12.

Freeman, C. (1974). *The Economics of Industrial Innovation.* Harmondsworth, U.K.: Penguin.

Friedman, M. (1953). *Essays in positive economics.* Chicago: University of Chicago Press.

Gamble, J. T., & Peteraf, M. (2015). *Loose-Leaf Essentials of Strategic Management.* Montgomery: McGraw-Hill Education.

Gituku, G. W., & Kagiri, A. (2015). Effects of competitive strategies on performance of middle level colleges in Thika sub county. *International Academic Journal of Human Resource and Business Administration*, 83-106.

Helfat, C. E., & Peteraf, M. A. (2009). Understanding dynamic capabilities: Progress along a developmental path. *Strategic Organization*, 91–102.

Helfat, C. E., & Peteraf, M. A. (2015). Managerial cognitive capabilities and the microfoundations of dynamic capabilities. *Strategic Management Journal*, 831-850.

Helfat, C., & Peteraf, M. (2003). The dynamic resource-based view: Capability lifecycles. . *Strategic Management Journal*, 997-1010.

Helfat, C., Finkelstein, S., Mitchell, W., Peteraf, M., Singh, H., Teece, D., & Winter, S. (2007). Dynamic Capabilities: Understanding Strategic Change in Organizations. *Oxford*, 42.

Hitt, M., Ireland, D., & Hoskisson, R. (2009). *Strategic Management: Competitiveness and Globalization, Concepts: Competitiveness and globalization* . South-Western Cengage Learning.

Hodgkinson, G. P., & Healey, M. P. (1500–1516). Psychological foundations of dynamic capabilities: reflexion and reflection in strategic management. *Strategic Management Journal*, 2011.

Jones, G., & Hill, C. W. (2010). *Theory of Strategic Management.* South-Western Cengage Learning.

KAM. (2018, February). *Manufacturing Priority Agenda.* Retrieved from Kenya Association of Manufacturers: http://kam.co.ke/kam/wp-content/uploads/2018/02/2018-Manufacturing-Priority-Agenda.pdf

Katila, R., & Ahuja, G. (2002). Something old, something new: A longitudinal study of search behavior and new product introduction. *Academy of Management Journal*, 1183-1194.

KNBS. (2018, April 26). *Economic Survey 2018.* Retrieved from Kenya National Bureau of Statistics: https://www.knbs.or.ke/download/economic-survey-2018/

Kusunoki, K., Nonaka, I., & Nagata, A. (1998). Organizational capabilities in product development of Japanese firms: A conceptual framework and empirical findings. *Organizational Science*, 699–718.

Lichtenthaler, U. (2012). The Performance Implications of Dynamic Capabilities: The Case of Product Innovation. *Journal of Product Innovation Management*.

Lichtenthaler, U., & Ernst, H. (2009). The role of champions in the externalcommercialization of knowledge. *Journal of Product Innovation Management*, 371-387.

Mairesse, J., & Mohnen, P. (2010). Using innovation surveys for econometric analysis. *National Bureau of Economic Research*.

Makadok, R. (2001). Toward a synthesis of the resource-based and dynamic-capability views of rent creation. *Strategic Management Journal*, 487–505.

Merrilees, B., Rundle-Thiele, S., & Lye, A. (2011). Marketing capabilities: Antecedents and implications for B2B SME performance. *Industrial Marketing Management*, 368–375.

Miles, R. E., & Snow, C. C. (1978). *Organizational strategy, structure and process.* New York: McGraw-Hill.

Nelson, R. R., & Winter, S. G. (1982). *An Evolutionary Theory of Economic Change.* Cambridge, MA: Harvard University Press.

NSE. (2018, December 16). *Listed companies*. Retrieved from Nairobi Securities Exchange: https://www.nse.co.ke/listed-companies/list.html?limitstart=0

O'Leary, Z. (2004). *The essential guide to doing research.* London: Sage.

Okumus, F. A., & Chathoth, P. K. (2011). *Strategic Management for Hospitality and Tourism.* Oxford: Elsevier.

Parnell, J. A. (2011). Strategic capabilities, competitive strategy, and performance among retailers in Argentina, Peru and the United States. *Management Decision*, 139–155.

Patton, M. (1990). *Qualitative Evaluation and Research Methods.* California: Sage.

Pavlou, P. A., & El Sawy, O. A. (2011). Understanding the Elusive Black Box of Dynamic Capabilities. *Decision Sciences Institute Journal*.

Peteraf, M. A., & Barney, J. B. (2003). Unraveling the resource-based tangle. *Managerial and Decision Economics*, 309–323.

Phung, D. N., & Mishra, A. V. (2017). Corporation Diversification and Firm Performance: Evidence from Vietnamese Listed Firms. *Australian Economic Papers*.

Pierce, J. L., Boerner, C. S., & Teece, D. J. (2002). Dynamic capabilities, competence, and the behavioral theory of the firm. *n The Economics of Change, Choice and Structure: Essays in the Memory of Richard M.* , 81-95.

Pisano, G., Shuen, A., & Teece, D. (1997). Dynamic capabilities and strategic management. *Strategic Management Journal*, 509–533.

Pujari, D., Dangelico, R. M., & Pontrandolfo, P. (2016). Green Product Innovation in Manufacturing Firms: A Sustainability-Oriented Dynamic Capability Perspective. *Business Strategy and the Environment*.

Roach, D., Ryman, J., Rosalind, J., & Hannah, R. (2018). Enhancing Innovativeness: The Role of Dynamic Marketing Capabilities. *Canadian Journal of Administrative Sciences*.

Sarantakos, S. (1993). *Social Research.* South Melbourne: Macmillan.

Schilke, O. (2013). On the contingent value of dynamic capabilities for competitive advantage:

Senaratne, C., Wang, C. L., & Rafiq, M. (2014). Success Traps, Dynamic Capabilities and Firm Performance. *British Journal of Management*.

Teece. (2007). Explicating dynamic capabilities: the nature and microfoundations of (sustainable) enterprise performance. *Strategic Management Journal*, 1319-1350.

Teece., D. J. (2012). Dynamic capabilities: Routines versus entrepreneurial action. *Journal of Management Studies*, 1395-401.

Vogel, R., & Güttel, W. H. (2013). The dynamic capabilities view in strategic management: a bibliometric review. *International Journal of Management Reviews*, 426–446.

Wilden, R., Gudergan, S. P., Nielsen, B. B., & Lings, I. (2013). Dynamic capabilities and performance: strategy, structure and environment. *Long Range Planning*, 72-96.

Winter, S. G. (2003). Understanding dynamic capabilities. *Strategic Management Journal*, 991-995.

Yung-Chul, K. (2013). Learning orientation, dynamic capabilities and performance in Korean high-tech ventures. *Advances in Management*, 54-61.

Zahra, S. A., Sapienza, H., & Davidsson, P. (2006). Entrepreneurship and dynamic capabilities: a review, model and research agenda. *Journal of Management Studies*, 917-955.

Zollo, M., & Winter, S. G. (2002). Deliberate learning and the evolution of dynamic capabilities. *Organization Science*, 339–351.

Zott, C. (2003). Dynamic capabilities and the emergence of intraindustry differential firm performance: insights from a simulation study. *Strategic Management Journal*, 97-125.

APPENDICES

Appendix 1: Letter of introduction

Survey of influence of dynamic capabilities on firm performance in listed Kenyan manufacturing firms

Dear Sir/Madam,

I am a master's of commerce student at Strathmore Business School at Strathmore University. I am carrying out research on the influence of dynamic capabilities on firm performance: a case of listed Kenyan manufacturing firms. This is in partial fulfilment of the requirements of the Masters of Commerce degree program at Strathmore University.

The purpose of this study is to determine the relationship between the use of dynamic capabilities (integrating, building and reconfiguring competencies and resources to embed environmental sustainability into new product development to respond to changes in the market) on product effectiveness and process efficiency of manufacturing firms.

This is an academic research and confidentiality is strictly emphasized. Your personal information will not appear anywhere in this report. There is no personal risk involved as a result of your participation in this survey. The data collected from this survey will be used for education and research purposes only. The information will be CONFIDENTIAL. Your participation is to be completely NON COMPULSORY and ANONYMOUS. Non-participation will not result in penalty or loss of any kind.

Kindly spare some time to complete the questionnaire attached.

Thank you for your contribution.

Yours sincerely,

Eve Nyasha.

Appendix 2: Questionnaires

Instructions

Kindly complete the following questionnaire using the instruments provided for each set of questions. Please tick (√) appropriately.

SECTION I: Respondent profile

Name of respondent (Optional): …….

Name of the company (Optional) …….

1. What is your position in the organization

Research and Development manager ☐

Marketing manager ☐

Operations manager ☐

Business Development manager ☐

Other…….

2. Number of years with the firm

Less than 10 ☐

More than 10 ☐

3. Kindly tick the manufacturing sector your firm belongs to

Agricultural sector (1) ☐

Automobiles and Accessories (2) ☐

Construction and Allied (3) ☐

Energy and Petroleum (4) ☐

Manufacturing and Allied (5) ☐

SECTION II: Sensing capability

Please indicate with a tick the extent to which you agree with the following statements: Where:

(1-strongly disagree, 2-disagree, 3- Neither Agree or Disagree, 4-agree and 5-strongly agree)

Statement	Strongly Disagree	Disagree	Neither Agree or Disagree	Agree	Strongly Agree
1. Thoroughly observing technological trends has helped us gain strategic advantage over our competitors					
2. Scanning the environment for new technologies has helped us realize new product needs.					
3. Thorough collection of industry information has boosted our process efficiency.					
4. Benchmarking ourselves with the global industry (that is worldwide manufacturing companies) has helped us improve our product quality					
5. We periodically review the likely effect of changes in our business environment on customers.					
Other? Please indicate on the space left to the right.	_____ _____ _____				

SECTION III: Seizing capability

Please indicate with a tick the extent to which you agree with the following statements: Where;

(1-strongly disagree, 2-disagree, 3- Neither Agree or Disagree, 4-agree and 5-strongly agree)

Statement	Strongly Disagree	Disagree	Neither Agree or Disagree	Agree	Strongly Agree
1. Integrating new knowledge in our existing knowledge base has boosted our process efficiency.					
2. Regularly matching new market opportunities with ideas for new products has helped us create unique products that are priced well.					
3. Recognizing links between new technological knowledge and existing knowledge has boosted our process efficiency.					
4. We have invested in new assets due to information obtained from industry research which have impacted our product quality.					
5. We constantly consider how to better exploit technologies to help develop quality products.					
Other? Please indicate on the spaces left to the right.	_____ _____				

SECTION IV: Reconfiguration capability and firm performance

Please indicate with a tick the extent to which you agree with the following statements concerning the influence of reconfiguration capability on your firm performance. Where:

(1-strongly disagree, 2-disagree, 3- Neither Agree or Disagree, 4-agree and 5-strongly agree)

Statement	Strongly Disagree	Disagree	Neither Agree or Disagree	Agree	Strongly Agree
1. We have flexibly reworked our organizational structure which has boosted our process efficiency.					
2. We actively renew our innovation processes over time to enhance our competitive position.					
3. We constantly redesign our business model to help optimize our technology management in a dynamic environment which leads to effective products					
4. We actively conduct asset-realignment to increase our process efficiency.					
5. We revamp our research and development activities and routines to address new product demands which lead to product effectiveness.					
6. We are satisfied with the costs associated with asset realignment and restructuring.					
7. We have realized improvement in performance within 10 -15 years attributed to the long term recombination of resources					
Other? Please indicate on the spaces left to the right.	_____ _____				

SECTION V: Firm performance

The following statements relate to the organizational performance measures namely product development and operational efficiency. Kindly indicate the extent to which you agree or disagree with the following statements. Where: (1-strongly disagree, 2-disagree, 3- Neither Agree or Disagree, 4-agree and 5-strongly agree)

	Product effectiveness	1	2	3	4	5
1	Our organization overall innovative products have increased as a result of the reconfiguration capabilities					
2	Our uptake of sensing capabilities has facilitated optimal product development seasonally					
3	New products resulting from reconfiguration capabilities meet quality and functionality guidelines					
4	There is high uptake of new product offerings by customers resulting from reconfiguration capabilities					
5	New products resulting from seizing capabilities improve the firms margins					
	Any other? (Please specify)					

	Process efficiency	1	2	3	4	5
1	The seizing capabilities have enabled our organization to minimize costs for a given quantity of output.					

2	The reconfiguration capabilities has enabled our organization to maximize profits for a given combination of resources.					
3	The seizing capabilities has enabled our organization achieve an accelerated time-to-market for our products.					
4	Overall organization efficiency has increased as a result of the reconfiguration capabilities.					
	Any other? (Please specify)					

Thank you for answering the questionnaire. Please take some time to review your answers.

Appendix 3: Listed Kenyan Manufacturing firms in the Nairobi Stock Exchange

1.	B.O.C Kenya Ltd
2.	British American Tobacco Kenya Ltd
3.	Carbacid Investments Ltd
4.	East African Breweries Ltd
5.	Mumias Sugar Co. Ltd
6.	Unga Group Ltd
7.	Eveready East Africa Ltd
8.	Kenya Orchards Ltd
9.	Flame Tree Group Holdings Ltd
10.	Eaagads Ltd
11.	Kapchorua Tea Co. Ltd
12.	Kakuzi
13.	Limuru Tea Co. Ltd
14.	Rea Vipingo Plantations Ltd
15.	Sasini Ltd
16.	Williamson Tea Kenya Ltd
17.	Car and General (K) Ltd
18.	Athi River Mining
19.	Bamburi Cement Ltd
20.	Crown Paints Kenya
21.	E.A.Cables Ltd
22.	E.A.Portland Cement Ltd
23.	KenolKobil Ltd
24.	Total Kenya Ltd
25.	KenGen Ltd
26.	Kenya Power & Lighting Co Ltd
27.	Umeme Ltd

Source: (Nairobi Securities Exchange, 2019)