# DYNAMIC CAPABILITIES, ORGANIZATIONAL AMBIDEXTERITY, LEADERSHIP STYLE AND COMPETITIVE ADVANTAGE OF MANUFACTURING FIRMS IN NAIROBI, KENYA

**BY**

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# DECLARATION

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## DEDICATION

I dedicate this thesis to my family members: my husband Micah Kosgei, son Michmash Kiprop, son Linus Kirwa and daughter Prudence Kosgei for their love, enthusiasm, encouragement and understanding during the entire academic journey.

To my parents to whom I owe the formative traits that have been pivotal in my capacity for among other things, the completion of my studies.

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## ABSTRACT

Competitive advantage has been momentous in recent times to the development and accomplishment of organizations' goals and objectives. Previous studies on manufacturing firms particularly in less developed countries have revealed that a third of these firms have failed to become operational as well as additional failures or closures of firms in previous years due to lack of leadership role in sensing, seizing and reconfiguring firms capabilities leading to competitive advantage. Despite many studies that have carried out in respect to dynamic capabilities and competitive advantage there are no empirical studies in Kenya that show the effect of organizational ambidexterity and leadership style on the relationship between dynamic capabilities and competitive advantage of manufacturing firms which this study strives to achieve. The main objective of the study was moderated mediation of organizational ambidexterity and leadership style on the relationship between dynamic capabilities and competitive advantage of manufacturing firms in Nairobi, Kenya. The study specific objectives were to: determine the effect of sensing capabilities, seizing capabilities and reconfiguration capabilities on competitive advantage; the mediating effect of leadership style; the moderating effect of organizational ambidexterity; and the moderated mediation of organizational ambidexterity and leadership style on these relationships. The study was grounded by Resource Based View Theory supported by Porters Forces and Dynamic Capabilities theories. The study used positivism paradigm, explanatory research design, simple random and stratified sampling on a target population of 795 manufacturing firms located in Nairobi, Kenya. A sample size of 321 firms was selected based on Yamane formula of determination in selecting respondents to be served with the questionnaires. Study hypotheses were tested using hierarchical regression at 0.05 significance level and the results showed that all values were less than 0.05. The study findings revealed that sensing capabilities; seizing capabilities; reconfiguration capabilities and dynamic capabilities had a positive and significant effect on competitive advantage ($\beta$ =.392, p=.000); ($\beta$ = .194, p=.000); ($\beta$ =.174, p=.001) and ($\beta$ = .535, p=.000). Findings further showed that transformational leadership style (LLCI = .001, ULCI = .115); transactional leadership style (LLCI = .016, ULCI = .098) mediates the relationship between dynamic capabilities and competitive advantage. Furthermore, the findings revealed that organizational ambidexterity moderates the relationship between dynamic capabilities and competitive advantage (LLCI = .030, ULCI = .212, $\beta$ =.121, p=0.05) and moderated mediation of organizational ambidexterity and leadership style (LLCI = .000, ULCI = .046; $\beta$=.014) on the relationship between dynamic capabilities and competitive advantage. In conclusion, the study provides new theoretical insight into the moderating effect of organizational ambidexterity, mediating effect of leadership style on the relationship between dynamic capabilities and competitive advantage. Results showed that at higher organizational ambidexterity, dynamic capabilities had a higher effect on competitive advantage compared to lower level hence the major contribution of this study as they enriched RBV, Porters Forces and Dynamic Capabilities Theories. The study recommends that managers, policy makers and industry practitioners should put more emphasis on, and appreciate the role of the leader in the deployment of dynamic capabilities by sensing, seizing and reconfiguring capabilities so as to achieve competitive advantage especially in the ever changing contemporary operating environment. Scholars should use these findings to further research on other sectors or subsectors of the economy.

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## ABBREVIATIONS AND ACRONYMS

| | |
|---|---|
| **CA** | Competitive Advantage |
| **CAK** | Competition Authority of Kenya |
| **CEO** | Chief Executive Officer |
| **DC** | Dynamic Capabilities |
| **Df** | Degree of Freedom |
| **GDP** | Gross Domestic Product |
| **GOK** | Government of Kenya |
| **HR** | Human Resource |
| **IC** | Individualized Consideration |
| **ICT** | Information Communication Technology |
| **II** | Idealized Influence |
| **IM** | Inspirational Motivation |
| **IS** | Intellectual Stimulation |
| **KAM** | Kenya Association of Manufacturers |
| **KMO** | Kaiser-Meyer-Olkin Measure |
| **KNBS** | Kenya National Bureau of Statistics |
| **LAISSEZF** | Laissez-faire |
| **LS** | Leadership Style |
| **MLQ** | Multifactor Leadership Questionnaire |
| **MMR** | Multifactor Moderated Regression |
| **OA** | Organizational Ambidexterity |
| **PCA** | Principal Component Analysis |

| | |
|---|---|
| **RBV** | Resource-Based View |
| **REC** | Reconfiguration Capabilities |
| **SC** | Sensing Capabilities |
| **SZ** | Seizing Capabilities |
| **SD** | Standard Deviation |
| **SE** | Standard Error |
| **SPSS** | Statistical Package for Social Sciences |
| **TRANSC** | Transactional |
| **TRANSF** | Transformational |
| **VRIN** | Valuable, Rare, Inimitable and Non-substitutable |
| **WEF** | World Economic Forum |

## OPERATIONAL DEFINITION OF TERMS

**Age of firm:** The period the firm has been in operation from date of commencement of business or date of registration (Davis and Haltiwanger, 2001).

**Ambidexterity**: This is organization's power to pursue two disparate capabilities simultaneously that is manufacturing efficiency and flexibility, standardization and innovation, differentiation and low-cost strategic positioning, or global integration and local responsiveness (Gibson and Birkinshaw, 2004; Lin *et al*., 2007; Han and Celly, 2008).

**Competitive Advantage:** It is the ability for organizations to sustain superior position in their industry for a long period of time (Porter, 1985) with the main objective of organizational strategies and is usually measured by ability to innovate, market positioning, mass customization and difficulty in imitation of duplication dimensions (Byrd & Turner, 2001).

**Dynamic capabilities:** This is the firm's ability to integrate, build and reconfigure internal and external competencies to address rapidly changing environments through sensing, seizing and reconfiguring of its products and services (Teece *et al.,* 2007). They are strategic choices through which firms achieve new difficult to imitate resource configurations so as to meet changing customer demands and competitive strategies as markets evolve or change in nature (Danneels, 2008; Teece 2007).

**Laissez-faire leadership style:** This is a type of leadership style that avoids clarifying expectations, addressing conflicts or making mistakes and tends to give little or no direction or support to its followers (Bass & Avolio 1997, Erkutlu, 2008).

**Leadership styles:** They are the behavioral patterns that a leader adopt so as to influence the behavior of his followers for example the way the leader gives directions to his subordinates by motivating them to accomplish tasks and responsibilities in line with the given objectives of an organization (Bass & Avolio, 1997).

**Organizational ambidexterity:** It is the ability of an organization to strategically explore and exploit resources in order to compete in markets where efficiency, control, and incremental improvement are prized and to also compete in new technologies and markets where flexibility, autonomy, and experimentation are needed (Jansen *et al.,* 2009). These are routines and processes which organizations use to mobilize, coordinate, and integrate dispersed exploratory and exploitative efforts (Jansen *et al.,* 2009).

**Reconfiguration capabilities:** It is the ability to integrate and transform existing capabilities in organization (Teece, 2007).

**Seizing capabilities**: It is creating internal knowledge, acquiring external knowledge and having these assimilated by sharing knowledge among the members of the organization (Zahra & George, 2002).

**Sensing capabilities:** This is recognizing changes in the operating environment that could affect directly or indirectly the companies' businesses by regularly scanning the internal and external business environment (Danneels, 2008; Teece, 2007).

**Size of firm:** Scale of operations measured using the number of employees at a given time in an organization (Arend, 2014).

**Transactional leadership style:** leadership style that focuses on supervision, organization, and performance in which leaders promote compliance by followers through both rewards and punishments (Bass & Avolio 1997).

**Transformational leadership style:** leadership style where a leader works with teams to identify needed change, creating a vision to guide the change through inspiration, and executing the change in tandem with committed members of a group (Bass & Avolio 1997). It is also raising worker's level of consciousness on the importance and value of designated results by motivation both emotional, intellectual and moral engagement so as to transcend own immediate self-interest for the sake of the firm's mission and vision (Rothfelder *et al*., 2012).

# CHAPTER ONE

# INTRODUCTION

## 1.0 Overview

This chapter presents the background of the study, statement of the problem, the research objectives, the hypotheses, significance and the scope of the study expounding on the key concepts of each construct and a brief background along with the dimensions of each variable of the study.

## 1.1 Background to the Study

Competitive advantage is achieved by organizations only if their resources and capabilities are scarce, rare, valuable, treasured and cannot be substituted by any product or service (Barney, 1991). Competitive advantage is achieved when an organization can offer better products or services in comparison with its competitors through adoption of the right capabilities hence dictate the price in its operating sector while maintaining a leadership position within the industry (Dess *et al.*, 2005). Attainment of competitive advantage is a major concern for strategic managers and policymakers as it occupies a central position in strategic management studies (Burden and Proctor, 2000; Barney and Clark, 2007; Liao and Hu, 2007; Barney and Hesterly, 2010). The competitiveness of firms largely depends on the strategies adopted in order to match the key success factors for operating in its market and exceeding those of its competitors (Dash & Das, 2010).

The deployment of dynamic capabilities shows a change to a firm's process routines, business models and risk management that required that they be incorporated in the strategy process of the firm thus the firm's leadership especially the CEOs drive matters strategy (Davies & Davies 2004; Engelen *et al.,* 2015. The Global

Competitiveness Report (2013–2014) by the World Economic Forum (WEF, 2013) postulates that competitive advantage is not a static process, but continuously keeps on changing to higher intensity where companies begin to rapidly develop new advantages and at the same time, attempting to neutralize the competitor's advantages resulting in increased competition into a hyper-competition at which level companies actively work to string together series of temporally moves that undermine competitors in an endless cycle of jockeying for position (Banjoko *et al.*, 2012; Abiodun, 2011).

Dynamic capabilities are the bridge between firm resources and business context that provide an important lens through which to examine how manufacturing firms adapt their resource base in order to produce new capabilities and subsequent superior organizational performance (Lawton and Rajwani 2011). The goal of every organization is to outperform its rivals and attract potential buyers to its products and services but still retain their current customers even at the volatile, unstable and dynamic business operating environment, (Hana, 2013). Dynamic capabilities have been studied and widely acknowledged by scholars to enhance competitive advantage and guarantee the long-term profitability of the firm (Barney, 1991; Ismail *et al.*, 2012; Ngila & Muturi, 2016).

Dynamic capabilities are the most significant organizational capability that helps in attainment of sustainable competitive advantage over competitors (Ogunkoya *et al.*, 2014). Resources are valuable sources of competitive advantage (Barney 2005; Newbert, 2007) and firms are expected to have a high-paced, contingent, opportunistic and creative search for satisfactory alternative behaviours so as to avoid being pushed into a firefighting mode by either external environmental changes or

internal decisions to change (Winter, 2003). Growing number of scholars have considered dynamic capabilities as the heart of firm strategy (Wilden *et al.,* 2013); value creation (Helfat, *et al.,* 2009); firm performance (Teece, 2007, Lopez, 2005) and competitive advantage (Zahra & George, 2002; Winter, 2003; Eisenhardt and Martin, 2000).

Organizational ambidexterity is the ability to pursue two disparate things at the same time by organizations that is manufacturing efficiency and flexibility, standardization and innovation, differentiation and low-cost strategic positioning, or global integration and local responsiveness (Gibson and Birkinshaw, 2004; Lin *et al*., 2007; Han and Celly, 2008). Organizations exploit and explore (Tushman and Reilly, 1996) resources in order to deliver efficiency, control, and incremental improvements, while embracing flexibility, autonomy, and experimentation. Exploring and exploiting so as to compete in mature technologies and markets requires efficiency, control, incremental improvement, flexibility, autonomy, and experimentation are key requirements for every organization (Jansen *et. al,* 2009*).* Maintaining appropriate balance between exploitation and exploration is critical since too much innovation may produce an excess of immature technologies, whereas too much refinement may lead to a reduction in variability that is increased reliability at the expense of discovery of better alternatives (Yukl, 2008).

Firms are constantly faced with the challenge of exploiting existing competencies and exploring new ones as they seek to adapt to environmental changes, firms explore new ideas or processes, and develop new products and services for emerging markets (Vera and Crossan, 2004). The ins and outs of organizational ambidexterity are generally under-researched (Cannaerts, *et al.,* 2016; Palm and Lilja, 2017; Deserti and

Rizzo, 2014; Smith and Umans, 2015) proving that the current barriers to innovation are likely to be underpinned by this nested paradox of exploitation and exploration (Papachroni *et al*., 2016; Andriopoulos &Lewis, 2009).

The concept of leadership style has been of increasing importance throughout the past decades and has received significant attention in academic research (Bennis, 2007; Bucic *et al*., (2010); Day *et al*., (2006); Denison *et al*., (1995); Larsson & Vinberg, (2010); Morris *et al*., (2005) because leaders are related to communicating a strong vision and innovation orientation. Leadership is a process of influence, which includes aspiring and supporting others towards the expected achievement of a desired purpose based on clear and professional values (Davies & Davies, 2004).

Manufacturing firms are majorly concentrated in various clusters of the country like Nairobi, Eldoret, Kisumu, Mombasa, Nakuru and Thika because of the basic infrastructure (Koirala & Koshal, 2000). 80% of these firms are located in Nairobi County having manufacturing sector as the third biggest industrial sector after agriculture and transport and communication (KPMG, 2014). The service sector has emerged as the largest economic sector in Kenya, which contributes 45.4% to GDP in 2017 while agriculture and manufacturing sectors contributes 31.5% and 8.4% respectively for the same period. Expansion of the service and consultancy sector at the expense of industrial manufacturing has been termed as deindustrialization (Rodrik, 2004). Services can act as a growth escalator, similar to the traditional role manufacturing sector has played in economic transformation of countries (Ghani and O'Connell, 2014).

Internationally, manufacturing has acted as a growth escalator for economies that have succeeded in eventuating high incomes and those countries that have achieved

rapid industrialization have done so by putting in place deliberate policies that promote and encourage value addition and diversification of manufactured goods (KAM Report, (2019). The Government's intent to grow the manufacturing sector comes at a critical time for the country; a time to promote shared prosperity (Gudka, 2019) and this is only attainable if we realize inclusive growth, reduce inequality and accelerate poverty reduction. In order for Kenya to experience this transformation, it must reaffirm its commitment to building, creating, adding value and taking pride in local industries by looking at the existing opportunities within the manufacturing sector whilst creating a conducive environment for local industries to thrive (Gudka, 2019).

The need for a buoyant manufacturing sector is acknowledged to be an important means towards industrialization and improvement in overall welfare of the citizenry (GoK, 2013; Jara & Escaith, 2012). Economic Survey results for the periods 2010 to 2014 by the Kenya National Bureau of Statistics further indicate that some major sectors of the Kenyan economy has witnessed intermittent higher growth, though the manufacturing sector has consistently decelerated in growth rates (GOK, 2014) because of increased cost of production, stiff competition from imported goods, high cost of credit and political shock leading to firms exiting Kenya hence spelling doom to an economy that was expected to recover.

Statistics from Kenya Association of Manufacturers have shown that certain firms announced plans to shut down their plants and shift operations to Egypt and other countries as a result of reduced profits, competition, government policies (KAM, 2018b) hence the basis this study is seeking to determine the effect of dynamic capabilities, organizational ambidexterity and leadership style on competitive

advantage of manufacturing firms in Nairobi, Kenya because there is no study that has been done on the moderated-mediation of organizational ambidexterity and leadership style on the relationship between dynamic capabilities and competitive advantage of manufacturing firms.

### 1.2 Statement of the Problem

Researchers have found out that manufacturing firms face competition from cheap imports, resource constraints, regulatory challenges, risk management issues, poor industry malpractices, , economic issues, lack of capital and infrastructure among others (Mbalwa *et al.*, 2014; Love, 2011) evidenced by firms' closure, shifting business to other regions or countries. Previous surveys on manufacturing firms particularly in less developed countries have revealed that a third of these firms failed to become operational, as well as additional failures or closures of firms in previous years (Khrystyna, *et al.*, 2010; Al-Shaikh, 1998; Mead & Liedholm, 1998) all this coming in the face of heightened competition as a result of globalization and the internationalization of trade, dynamism of the market as well as employment opportunities consistently failing to keep up with an expanding Kenyan labour force (GOK, 2013; Jara & Escaith, 2012).

It is estimated that manufacturing firms have lost 70 per cent of their market share in East Africa (GoK, 2014) due to contingencies for example Reckitt & Benkiser, Procter & Gamble, Bridgestone, Colgate Palmolive, Johnson & Johnson and Unilever have all relocated or restructured their operations opting to serve the local market through importing from low-cost manufacturing areas such as Egypt resulting in job losses (Nyabiage & Kapchanga, 2014) as a result of turbulent operating environment and high operating costs. Despite these efforts by the government and its stakeholders

for example Kenya Association of Manufacturers, National Chamber of Commerce and Industry and the Kenya Private Sector Alliance, the sector's competitive advantage is still at stake.

In Kenya, Lagat *et al.,* 2012; Otieno *et al.,* 2012; Wamae *et al.,* 2014; Shih & Agrafiotis, 2015 and Onyanchu *et al.,* 2018 assessed the effects of dynamic capabilities on firm performance; dynamic capabilities on competitive advantage, leadership style to leadership effectiveness but no empirical literature exists on the moderated mediation of organizational ambidexterity and leadership style on the relationship between dynamic capabilities and competitive advantage of manufacturing firms hence the reason for this study.

## 1.3 Objective of the Study

### 1.3.1 General Objective of the study

The main objective of the study was to investigate the moderated mediation of organizational ambidexterity and leadership style on the relationship between dynamic capabilities and competitive advantage of manufacturing firms in Nairobi, Kenya.

### 1.3.2 Specific Objectives of the study

The specific research objectives for this study were:

$1_a$: To determine the effect of sensing capabilities on competitive advantage of manufacturing firms in Nairobi, Kenya.

$1_b$: To assess effect of seizing capabilities on competitive advantage of manufacturing firms in Nairobi, Kenya.

$1_c$: To determine the effect of reconfiguration capabilities on competitive advantage of manufacturing in Nairobi, Kenya.

$1_d$: To examine effect of dynamic capabilities on competitive advantage of manufacturing firms in Nairobi, Kenya.

$2_a$: To assess the mediating effect of transformational leadership style on the relationship between sensing capabilities and competitive advantage of manufacturing firms in Nairobi, Kenya.

$2_b$: To determine the mediating effect of transformational leadership style on the relationship between seizing capabilities and competitive advantage of manufacturing firms in Nairobi, Kenya.

$2_c$: To examine the mediating effect of transformational leadership style on the relationship between reconfiguration capabilities and competitive advantage of manufacturing firms in Nairobi, Kenya.

$3_a$: To examine the mediating effect of transactional leadership style on the relationship between sensing capabilities and competitive advantage of manufacturing firms in Nairobi, Kenya.

$3_b$: To assess the mediating effect of transactional leadership style on the relationship between seizing capabilities and competitive advantage of manufacturing firms in Nairobi, Kenya.

$3_c$: To examine the mediating effect of transactional leadership style on the relationship between reconfiguration capabilities and competitive advantage of manufacturing firms in Nairobi, Kenya.

$4_a$: To assess the mediating effect of laissez-faire leadership style on the relationship between sensing capabilities and competitive advantage of manufacturing firms in Nairobi, Kenya.

$4_b$: To examine the mediating effect of laissez-faire leadership style on the relationship between seizing capabilities and competitive advantage of manufacturing firms in Nairobi, Kenya.

$4_c$: To determine the mediating effect of laissez-faire leadership style on the relationship between reconfiguration capabilities and competitive advantage of manufacturing firms in Nairobi, Kenya.

5. To assess the moderating effect of organizational ambidexterity on the relationship between dynamic capabilities and competitive advantage of manufacturing firms in Nairobi, Kenya.

6. To determine the moderated-mediation of organizational ambidexterity and leadership style on the relationship between dynamic capabilities and competitive advantage of manufacturing firms in Nairobi, Kenya.

### 1.4 Research Hypotheses

This was a null hypothesis research showing that there is no significant effect of organizational ambidexterity and leadership style on the relationship between dynamic capabilities and competitive advantage of manufacturing firms in Nairobi, Kenya.

$H_{01a}$: There is no significant effect of sensing capabilities on competitive advantage of manufacturing firms in Nairobi, Kenya.

$H_{01b}$: There is no significant effect of seizing capabilities on competitive advantage of manufacturing firms in Nairobi, Kenya.

$H_{01c}$: There is no significant effect of reconfiguration capabilities on competitive advantage of manufacturing in Nairobi, Kenya.

$H_{01d}$: There is no significant effect of dynamic capabilities on the competitive advantage of manufacturing firms in Nairobi, Kenya.

$H_{02a}$: There is no mediating effect of transformational leadership style on the relationship between sensing capabilities and competitive advantage of manufacturing firms in Nairobi, Kenya.

$H_{02b}$: There is no mediating effect of transformational leadership style on the relationship between seizing capabilities and competitive advantage of manufacturing firms in Nairobi, Kenya.

$H_{02c}$: There is no mediating effect of transformational leadership style on the relationship between reconfiguration capabilities and competitive advantage of manufacturing firms in Nairobi, Kenya.

$H_{03a}$: There is no mediating effect of transactional leadership style on the relationship between sensing capabilities and competitive advantage of manufacturing firms in Nairobi, Kenya.

$H_{03b}$: There is no mediating effect of transactional leadership style on the relationship between seizing capabilities and competitive advantage of manufacturing firms in Nairobi, Kenya.

$H_{03c}$: There is no mediating effect of transactional leadership style on the relationship between reconfiguration capabilities and competitive advantage of manufacturing firms in Nairobi, Kenya.

$H_{04a}$: There is no mediating effect of laissez-faire leadership style on the relationship between sensing capabilities and competitive advantage of manufacturing firms in Nairobi, Kenya.

$H_{04b}$: There is no mediating effect of laissez-faire leadership style on the relationship between seizing capabilities and competitive advantage of manufacturing firms in Nairobi, Kenya.

$H_{04c}$: There is no mediating effect of laissez-faire leadership style on the relationship between reconfiguration capabilities and competitive advantage of manufacturing firms in Nairobi, Kenya.

$H_{05}$: There is no moderating effect of organizational ambidexterity on the relationship between dynamic capabilities and competitive advantage of manufacturing firms in Nairobi, Kenya.

$H_{06}$: There is no moderated-mediation of organizational ambidexterity and leadership style on the relationship between dynamic capabilities and competitive advantage of manufacturing firms in Nairobi, Kenya.

## 1.5 Significance of the Study

The results of the study will benefit the following: Management of manufacturing firms will benefit in that they will use the information and the findings on the effects of dynamic capabilities, organizational ambidexterity and leadership style on competitive advantage so as to make better policies and decision for their industries which can guarantee successful growth hence competitive advantage. Having established the effects of the factors on competitive advantage, the management can make use of the findings in order to oversee turnaround of their industries hence competitive advantage considering that the environment of operation is becoming more and more dynamic.

Government agencies, regulatory bodies and policy makers will benefit from the study as they will understand their role in the industry and as a result manage

formulate policies that will favor its growth. Macroeconomic factors like legal and regulatory framework which are determined by the government can be relooked so as to enhance attraction of investors into the sector hence competitive advantage. Clear understanding of how the industry circumvents environmental threats and opportunities in order to survive will offer a basis for government to create conducive environment favorable to the manufacturing firms in Kenya and East Africa region for competitive advantage.

The study provides valuable knowledge in the field of strategic management because it will act as a source of secondary data for researchers. Potential and current scholars will get information on moderated-mediation of organizational ambidexterity and leadership style on the relationship between dynamic capabilities and competitive advantage hence model moderated-mediation relationship so as to identify areas for further study. The study will expand the knowledge on competitive advantage by providing in-depth understanding on what and how dynamic capabilities can lead to competitive advantage, how leadership style will influence competitive advantage. Scholars can further utilize these findings by building on the theoretical aspect of competitive advantage. This is a point of reference forming a foundation for further research in that it addresses the research gap as well as recommended area for further research by forming relevant material for reference to other researchers, readers and scholars.

Findings provide a basis for theory build-up and guidance for future researches through enriching other theories and outlining how they are implemented in manufacturing firms. Its contribution to theory or extension of existing theory in this field accords strategy students and scholar’s new knowledge and insight on moderated

mediation of leadership style and organizational ambidexterity on dynamic capabilities and competitive advantage of manufacturing firms in Nairobi, Kenya.

### 1.6 Scope of the Study

The study was carried out in manufacturing firms between the month of May – June 2019 on the effect of dynamic capabilities on competitive advantage having organizational ambidexterity as a moderator and leadership style as a mediator. Manufacturing firms in Nairobi, Kenya was the target population because 80% of these firms are located in Nairobi, Kenya (KAM, 2018b). Carrying out research in these firms was not an easy task because of time, money and much effort that was required so as to reach all the target firms of study. Pilot study was done in the month of May, 2019 at similar manufacturing firms of Uasin Gishu, Eldoret, Kenya.

The study adopted positivism philosophy and explanatory design (Zikmund *et al.*, 2013) with the main focus of establishing the moderated-mediation of organizational ambidexterity and leadership style on the relationship between dynamic capabilities and competitive advantage of manufacturing firms in Nairobi, Kenya considering that competitive advantage is main focus of interest to every firm, sector, industry or economy. The unit of analysis was manufacturing firms located in Nairobi and unit of observation was Marketing Managers and Production/Operations Managers because they are the key informants of the CEO in the organization.

# CHAPTER TWO

# LITERATURE REVIEW

## 2.0 Introduction

The chapter presents an overview of the literature relating to this study. The key concepts of each construct are defined and a theoretical overview along with the dimensions of each variable of the study is provided. The current status of the research regarding the relationship between the key concepts of competitive advantage, dynamic capabilities, leadership style and organizational ambidexterity is well outlined in this chapter. The chapter begins by explaining the theoretical framework and the relevant theories.

## 2.1 Overview of the Study Concepts

### 2.1.1 The Concept of Competitive Advantage

The first author who introduced the term competitive advantage in the strategy theory was Porter (1980). Competitive advantage comes from leveraging resources and unique skills of the firm in order to implement a value creation strategy more effectively than its competitors (Barney, 1991) and is also associated with success (Klein, 2002). Competitive advantage as an advantage or strength that a firm has over a competitor or group of competitors in a given market, strategic group or industry (Kay, 1993) and is whatever differentiates an organization or what it produces or markets from its contemporaries (Fahey, 1989).

Competitive advantage is essentially a position of superiority on the part of the firm in relation to its competition in any of the multitude of functions and or activities performed by the firm (Fahey, 1989) meaning that a firm can gain a competitive advantage in several ways for example some firms may be superior in production, Research and Development or in marketing. Competitive advantage is the ability

gained through attributes and resources to perform at a higher level than others in the same industry and that a firm must decide whether to attempt to gain competitive advantage by producing at a lower cost than its rivals or differentiate its products and services and sell them at a premium price or look at other alternatives with characteristics like customer focus, brand equity, product quality, research and development focus (Porter, 1998).

Competitive advantage are both profitable current operations while at the same time continuously repositioning key factors so that they are responsive to and anticipate the actions of competitors (Bankable Frontier Associates, 2009). The deployment of dynamic capabilities shows a change to a firm's process routines, business models and risk management that required that they be incorporated in the strategy process of the firm thus the firm's leadership especially the CEOs drive matters strategy (Davies & Davies 2004; Engelen *et al.,* 2015. The Global Competitiveness Report (2013–2014) by the World Economic Forum (WEF, 2013) postulates that competitive advantage is not a static process, but continuously keeps on changing to higher intensity where companies begin to rapidly develop new advantages and at the same time, attempting to neutralize the competitor's advantages resulting in increased competition into a hyper-competition at which level companies actively work to string together series of temporally moves that undermine competitors in an endless cycle of jockeying for position (Banjoko *et al.,* 2012; Abiodun, 2011).

Competitive advantage is related to the competitive position of an organization within its industry and reflects firms' ability to achieve a performance greater than the average of that industry (Barney, 1991; Porter, 1985a). Porter (1998) further postulates that competitive advantage is the ability gained through attributes and

resources to perform at a higher level than others in the same industry and that a firm must decide whether to attempt to gain competitive advantage by producing at a lower cost than its rivals or differentiate its products and services and sell them at a premium price or look at other alternatives.

Berdine (2008) posit that a company competitive advantage is a condition which enables a company to operate in a more efficient or otherwise higher-quality manner than its competitors, and which results in benefits accruing and it comes as a result of the core competence of the organization which is the one outstanding difference between a company and its rivals. This framework highlights that firms obtain sustainable competitive advantage by applying strategies that exploit their strengths, respond to opportunities, neutralize threats and avoid weaknesses (Barney, 1991).

Sustainable competitive advantage is achieved by holding resources characterized by four attributes (VRIN): it must be valuable, rare, imperfectly imitable and there cannot be strategically equivalent substitutes (Barney, 1991). Competitive advantage occurs when an organization acquires or develops an attribute or combination of attributes that allows it to outperform its competitors for example in a service oriented business, competitive edge is well achieved through innovation strategies which are value creating and are not simultaneously being implemented by any current or potential player (Porter, 1998). Successfully implemented innovation strategies will lift a firm to superior performance by facilitating the firm with competitive advantage to outperform current or potential players (Clulow *et al.*, 2003).

Firms are conceptualized as collections of sticky and difficult to imitate resources that create competitive advantage and contribute to sustained industry performance differences (Helfat *et al.,* 2009; Hoopes *et al.,* 2003). Although the interest for

discussion and empirical research on the competitive advantage concept has increased in recent years (Ray *et al.,* 2004; Newbert, 2008), understanding the concept and its distinction from the organization's performance remain a challenge for the theory (Powell, 2001). Understanding the sources of sustainable competitive advantage represented a major area of research in strategic management literature (Porter, 1985).

### 2.1.2 The Concept of Dynamic Capabilities

Dynamic capabilities are the firm's ability to integrate, build and reconfigure inward and outward competences so as to address quickly evolving environments (Teece *et al.*, 1997) though the speed of change in the environment might be less important than the common level of vulnerability (Teece *et al.,* 2016). Dynamic capacities are more significant level capabilities that determine the firm's ability to integrate, build and reconfigure internal and external abilities to address and conceivably shape quickly changing business conditions (Teece, 2007, 2010; Teece *et al.,* 1990, 1997).

Teece (2017a) contend that dynamic abilities can allow organizations to create and capture value from innovation through developing ecosystems and designing appropriate business models. They are the limit of an association to deliberately make, broaden, or alter its asset base (Helfat, *et al.,* 2007) and furthermore firms' ability to recharge capabilities to accomplish consistency with the changing industry condition by adjusting, incorporating, and reconfiguring inward and outer hierarchical aptitudes, assets, and practical skills (Teece *et. al.,* 1997). Numerous organizations are confronted with difficulties of acquisition and deployment of resources required to exploit opportunities considering a restricted or limited resource base of the firm (Alvarez and Busenitz, 2001; Hadjimanolis, 2000).

Helfat *et al.* (2007) defined dynamic capabilities as the capacity of an organization to purposefully create, extend, or modify its resource base or organizational ability to attain new forms of competitive advantage by renewing competences, organizational resources through achieving congruence with the changing business environment (Wheeler, 2002). Organizations must continuously attract, strengthen, and reconstruct competencies to be at par with the dynamic business environment (Teece *et al.*, 1997). Dynamic capabilities are firms' dispositions through which organizations adapt to reconfigure human and material resources (Eisenhardt & Martin 2000).

The more significant kind of asset fulfills the rules characterized by Barney (1991) of valuable, rare, imperfectly imitable and non-substitutable (VRIN) and that these VRIN assets can uphold sturdy upper hand. They are most often intangible resources for instance an important brand name to a certain extent in light of the fact that most impalpable resources have ineffectively characterized property rights, which make them practically non-tradable and consequently hard to procure (Teece, 2015). Dynamic capabilities are a class of higher order capabilities that impact the rate at which a firm can react to environmental change (Easterby-Smith *et al.*, 2009; Winter, 2003) and is regularly repeatable, designed choices and routines that give the ability to a firm to intentionally make, expand, or adjust its resource base (Helfat *et al.*, 2009). This is also the capacity to develop, deploy and orchestrate value creation through sensing, seizing and reconfiguration (Teece, 2007) so as to empower or endeavor the firm to situate itself to produce correct items while focusing on the correct business sectors to address the consumer needs and the technological and competitive opportunities for the future (Rumelt, 2011).

Bowman and Ambrosini, (2003) in support to Teece *et al.,* (1997) postulate that dynamic capabilities have four fundamental processes: reconfiguration, leveraging learning and integration. Reconfiguration is the change and recombination of assets and resources for example the combination of manufacturing resources that regularly happens because of acquisition. Leveraging is the replication of a cycle or framework that is working in one zone of a firm into another zone, or expanding a resource by deploying it into a new domain for example applying an existing brand to a new set of products (Bowman and Ambrosini, 2003). Learning permits errands to be performed all the more successfully and proficiently frequently as a result of experimentation, and grants reflection on disappointment and achievement while integration refers to the capacity of the firm to incorporate and organize its benefits and assets, bringing about the development and emergence of a new resource base (Bowman and Ambrosini, 2003).

Wang *et al.,* (2007) and different researchers distinguished three elements of dynamic capabilities which are adaptive capability which is the identification and exploitation of developing business sector openings (Biedenbach and Muller, 2012). Absorptive capability is the ability to perceive the estimation of new, external information, assimilate and apply it to commercial ends (Zollo and Winter, 2002) while innovative capability is the ability to develop new products and markets through aligning strategic innovative orientation with innovative behaviours and processes (Wang and Ahmed, 2004).

Dynamic capabilities in this study was carried out using three measurements (sensing, seizing and reconfiguration capabilities) adapted from the work of MacInerney-May (2012) and Helfat *et al.,* (2009). These processes help firms to realize the need for

change, formulate the necessary response to changes in the environment so as to apply the right measures for competitive advantage (MacInerney-May, 2012).

#### 2.1.2.1 Sensing Capabilities

Sensing capability constitutes an organization's propensity to notice the changes in the environment based on its current capability that is the ability to promptly recognize opportunities in the environment when it presents itself (Teece, 2007) while also having the means to monitor threats from the environment (Barreto, 2010). This is the firm's ability to recognize shifts in the environment that could impact firm's business (Teece, 2007) which is achieved by establishing processes through which to regularly scan the local and distant environment (Danneels, 2008) and to interpret gathered information by filtering relevant aspects of the information. This is strategic sense-making capacity which refers to enterprises' capabilities of identifying opportunities, threats, changes and also competitors' possible responses to the focal enterprise's actions (Li and Liu, 2014).

Sensing capabilities requires constant scanning, searching and both external and internal exploration (O'Reilly & Tushman, 2008; Panzda & Thorpe, 2009). Thus takes place through market presence and participation, enterprise cooperation, or personal networks and connections and also internal research and development activities. Sensing capabilities involves recognition and monitoring of opportunities and threats from both the external and internal environment (Teece, 2007). The first scale is recognition of opportunities and threats from the environment (Cao, 2011; Lichtenthaler, 2009; Danneels, 2008) while the second scale is monitoring of internal capabilities (MacInerney-May, 2012).

These are dimensions of sensing (shaping) opportunities and threats to firm's scanning, filtering, monitoring, assessing, creating, interpreting, figuring out, learning and calibrating business opportunities and threat (Cao, 2011) similar to Teece, 2007) which involves a deliberate investment in continuous search for internal and external information about customer needs, technological shifts and opportunities, supplier and competitor responses, structural evolution in the market among others resulting in long-term approach that will help companies enhance their exploratory activities. This study adopted previous measures by Danneels, (2008) Jansen *et al*., (2005) and Lichtenhaler, (2009).

#### 2.1.2.2 Seizing Capabilities

This is the capacity to create, acquire and share knowledge to respond to opportunities and threats from the working environment (Eisenhardt and Martin, 2000; Verona and Ravasi, 2003). It is the firm's learning capability reflected by the ability to create internal knowledge, to acquire external knowledge and to assimilate internal and external knowledge through the sharing for capability creation (Cepeda and Vera, 2007; Easterby-Smith *et al.,* 2009; Vivas Lopez, 2005; Zahra and George, 2002). These are knowledge acquisition, knowledge sharing and knowledge integration (MacInerney-May 2012; Pavlou and El Sawy, 2011; Lichtenthaler, 2009; Jansen *et al,* 2008) that yields to concrete benefiting from sensing hence companies need seizing or decision-making take over capabilities.

It is the company's capacity to take care of products, service opportunities, processes, selection of business models and identifying talent to organize firm's operational work (Cao, 2011) through creation of the right choices and executing them so that they are aligned with firm's strategic goals and key objectives (Li and Liu, 2014). Firms

should capture value from opportunities by mobilizing their existing resources towards new innovative ways (Teece, 2014). Seizing capabilities ought to be the first priority in each venture and ifor this to occur, it necessitates that the organizations be future situated, acceptable administration abilities and besides, is prepared to now and again even tear apart its own items to flourish after some time (McGrath, 2001).

Learning as a powerful ability has been recognized as a cycle by which redundancy and experimentation empower errands to be performed better and snappier (Teece *et al.,* 1997) and are formed by the co-advancement of learning systems (Zollo and Winter, 2002). Way reliance is grounded in information, assets recognizable to the firm or impacted by the social and aggregate nature of learning (Teece *et al.,* 1997) demonstrating that learning assumes a noteworthy function in the creation and advancement of dynamic abilities. Learning is the foundation or base of dynamic capacities that aides their advancement thus firms are relied upon to present information procurement ability effectively (Eisenhardt and Martin 2000; Zollo and Winter, 2002). Firms are supposed to possess knowledge acquisition capability because creating knowledge internally may not be sufficient strategy to cope with the challenges arising from changes in the operating environment (Lichtenthaler, 2009). New cycles of products and services result essentially from better information gathering (Augier and Teece 2009) and that for quality as a dynamic capability, a capability not only needs to change the asset base by being implanted in the firm repeatedly (Helfat and Peteraf 2003). This study adopted Pavlou & El Sawy, (2011) measures on seizing capabilities.

### 2.1.2.3 Reconfiguration Capabilities

Reconfiguration capabilities are organization's potential to generate capabilities, integrate current capabilities (Lavie, 2006; Capron & Mitchell, 2009) through creation and integration of internally or externally acquired capabilities. It is also transformation of existing capabilities for example to change the form, shape, or appearance of capabilities existing within the firm (Teece, 2007) and redeployment or recombination of existing capabilities (Ahuja & Katila, 2004). It refers to the ability to recombine both tangible and intangible assets so that they meet the demands of markets and technological changes (Li & Liu, 2014; O'Reilly & Tushman, 2008; Teece, 2007).

While an enterprise competencies provide competitive advantage at a given time, the changing business environment calls for new competitive assets and thus new competencies (Li & Liu, 2014) and this is especially true today as product and technology life cycles are shortening, becoming more interdisciplinary thus more demanding and that financial requirements are rapidly rising (Rese & Baier, 2011; Santamaria &Surocca, 2011).

Cao, (2011) postulates that reconfiguration and recombination of the firm's assets, processes and structures to match the shifting operating environment calls for business model redesigning, alignment and revamping of routine. All the three dynamic processes are simultaneous, support each other and contribute to achieving above average competitive advantage (Li & Liu, 2014). This study adopted measures of reconfiguration capabilities outlined by Pavlou & El Sawy (2011) with minor editing.

All the three dynamic capabilities items that is sensing, seizing and reconfiguration are simultaneous, support each other and contribute to achieving above average competitive advantage (Li and Liu, 2014).

### 2.1.3 The Concept of Leadership Style

Leadership is a process of influence which includes aspiring and supporting others towards the expected achievement of a desired purpose based on clear and professional values (Davies & Davies, 2004) where the leader influences followers to understand and agree about what needs to be done and how to do it, the process of facilitating individual and collective efforts to accomplish shared objectives (Yulk, *et al*., 2009). Leadership has three perspectives: looking at the characteristics of leaders such as traits and behaviours; characteristics of followers such as confidence and optimism they have on the leader, trust, task commitment and job satisfaction and finally situation or context within which the leaders operate, including the type and size of firm, structure and external dependencies (Yulk *et al.*, 2009).

The concept of leadership has been of increasing importance throughout the past decades and has received significant attention in academic research (Bennis, 2007; Bucic *et al*., (2010); Day *et al*., (2006); Denison *et al*., (1995); Larsson & Vinberg, (2010); Morris *et al*., (2005) because leaders are related to communicating a strong vision and innovation orientation, while their focus lies on pursing new opportunities and alternative solutions with a long-term perspective (Probst *et al.*, 2011) of the firm

King (2010) posits that the abilities and motivations of employees is a function of the behaviour of their leadership. Samad (2012) postulate that a person does not become a leader merely by virtue of the possession of some combination of traits but on the amount of direction and guidance, the dynamic among these factors; socio-emotional

support and task behavior, in performing a task the readiness level (commitment and competence) of the followers and relationship behavior required by the followers functions and objective (Ryan & Tipu, 2013).

Since organizations today are faced with many challenges, especially with the constant changes in technology, economic, social, political and legal conditions and internal processes, flexibility is required in resource utilization and in the promotion of continuous learning (James & Collins, 2008; Leavy &Mckiernan, 2009). The situations entailing high degree of precision, technical expertise, time-constraints, particularly in technological intensive environment will prefer transactional leadership whereas in human-intensive environment, where focus is on influencing the followers through motivation and respecting their emotions on the basis of common goals, beliefs and values then transformational leadership style is a preferable option (MacGregor Bums, 2003). Executives should priorities on scanning of appropriate sectors in both the external and internal environments that are important to firm competitive advantage Garg *et al.*, (2003) by varying their relative internal and external scanning according to the rate of changes in the external operating environment (*Garg et al.,* 2003).

There are various styles of leadership that are usually adopted by leaders along the leadership continuum and they are transformational, transactional and laissez-faire (Khan, 2015). This study therefore was guided by Bass & Avollio, (2004) full range model of the leadership style so as to capture dimensions of transformational, transactional and laisses-faire leadership style.

### 2.1.3.1 Transformational Leadership Style

Transformational leadership style is the most frequently studied established leadership theory in recent times (Dinh *et al.*, 2014; Marques, 2015) that emphasizes the motivation and inspiration of followers and has been defined in terms of intellectual stimulation, individualized consideration, idealized influence, and inspirational motivation (Von Krogh *et al*., 2012), This is individualized considerations, intellectual stimulation, inspirational motivation, idealized influence (attributes) and idealized influence (behavior) according to Bass *et al*., (2003) and Trottier *et al.*, (2008). Individualized consideration is concerned with the basic transformational leadership behaviors of regarding individuals as fundamental contributors to the workplace which are reassurance, caring for and coaching of individuals and an open and consultative approach to leadership (Bass, 1999).

This is a process of influencing in which leaders change their associates' awareness of what is important and move them to see themselves and the opportunities and challenges of their environment in a new way (Bass, 1997). Transformational leaders are proactive that is they seek to optimize individual, group and organizational development and innovation, not just achieve performance "at expectations" but convince their associates to strive for higher levels of potential as well as higher levels of moral and ethical standards (Bass *et al.*, 2003). Transformational leaders focus on developing their followers by tapping them of their potentials, inspiring them, promoting collaboration, motivating them and by reinforcing positive behaviors and that employees often develop a high level of trust and confidence in such a leader (Bass *et al.*, 2003).

Bass (1997) argues that transformational leaders are pertinent especially during turbulent times when rapid changes and globalization takes place and occurs when leaders broaden and elevate the interests of their employees, when they generate awareness and acceptance of the purposes and mission of the group, and when they stir employees to look beyond their own self-interest for the good of the group. He further argues that the goal of transformational leadership is to 'transform' people and organizations in a literal sense that is to change them in mind and heart; enlarge vision, insight, and understanding; clarify purposes; make behavior congruent with beliefs, principles, or values; and bring about changes that are permanent, self-perpetuating, and momentum building hence leaders in this category display concern for their workers' needs, and are equipped to boost and coach the development of desired workplace behavior.

#### 2.1.3.2 Transactional Leadership Style

Transactional leadership style focuses on leader-follower exchanges (Von Krogh *et al.,* 2012) and is usually defined in terms of contingent reward and active management by exception (Bass, 1999) and mainly focuses on standardization, formalization, control, and training. Transactional leaders can have a positive impact on both feed-forward and feedback learning that reinforces institutionalized learning (Vera and Crossan, 2004) where such leaders tend to prefer closed cultures, mechanistic structures, and rigid systems and procedures.

A transactional leader follows the scheme of contingent rewards to explain performance expectation to the followers and appreciates good performance by believing on contractual agreements as principal motivators and uses extrinsic rewards toward enhancing followers' motivation (Bass, 1985). It mainly applies to

situations that require institutionalization, reinforcement, or refinement of existing knowledge (Jansen *et. al.,* 2009) based more on "exchanges" between the leader and follower, in which followers are rewarded for meeting specific goals or performance criteria (Trottier *et al.*, 2008; Bass *et al.*, 2003).

This is more practical in nature because of its emphasis on meeting specific targets or objectives (James & Collins, 2008; Sosik & Dinger, 2007) of the organization because an effective transactional leader is able to recognize and reward followers' accomplishments in a timely way however subordinates of transactional leaders are not necessarily expected to think innovatively and may be monitored on the basis of predetermined criteria (Bass *et al.*, 2003). Poor transactional leaders may be less likely to anticipate problems and to intervene before problems come to the fore though more effective transactional leaders take appropriate action in a timely manner (Bass *et al.*, 2003).

#### 2.1.3.3 Laissez-Faire Leadership Style

James and Collins, (2008) posits that laissez-faire leader is an extreme passive leader, always reluctant to influence subordinates' considerable freedom even to the point of handing over his/her responsibilities to them thus an indication of absence of leadership. Researchers have consistently reported that laissez-faire leadership is the least satisfying and least effective style of leadership because these leadership behaviors are accompanied by little sense of accomplishment, little clarity, little sense of group unity, and followers do not hold as much respect for their supervisors (Trottier *et al.*, 2008; Lok & Crawford, 1999) or leaders.

Lok & Crawford, (1999) and Bučiūnienė & Škudienė, (2008) differentiated laissez-faire leadership from other types of leadership behaviors and styles arguing that

laissez-faire leadership should not be confused with democratic, relations oriented, participative, or considerate leadership behavior nor should it be confused with delegation or management by exception (Bass, 1990). Delegation implies the leader's active direction of a subordinate to take responsibility for some role or task hence the leader who practices management by exception allows the subordinate to continue on paths that the subordinate and the leader agreed on until problems arise or standards are not met, at which time the leader intervenes to make corrections (Bass, 1990).

### 2.1.4 The Concept of Organizational Ambidexterity

Ambidexterity is an organization's ability to pursue two disparate things at the same time that is manufacturing efficiency and flexibility, standardization and innovation, differentiation and low-cost strategic positioning, or global integration and local responsiveness (Gibson and Birkinshaw, 2004; Lin *et al*., 2007; Han and Celly, 2008). It refers to the ability of an organization to both exploit and explore (Tushman and Reilly, 1996) to deliver efficiency, control, and incremental improvements, while embracing flexibility, autonomy, and experimentation through exploring and exploiting in order to compete in mature technologies and markets where efficiency, control, and incremental improvement are prized or compete in new technologies and markets where flexibility, autonomy, and experimentation are needed (Jansen *et. al*, 2009*).*

March (1991) refers to ambidexterity to a successful combination of exploitation and exploration where he focuses exploitation as refinement, choice, production, efficiency, selection, implementation, execution while on the other hand and exploration as search, variation, risk taking, experimentation, play, flexibility, discovery, innovation. Organizations which are not able to perform explorative and

exploitative activities simultaneously cannot implement different strategies or exceed the moderate level for both exploration and exploitation (O'Reilly & Tushman, 2011).

Prior literatures have increasingly argued that successful firms are ambidextrous that is they generate competitive advantages through revolutionary and evolutionary change (Tushman and O'Reilly, 1996), adaptability and alignment (Gibson and Birkinshaw, 2004) or simultaneously pursuing exploratory and exploitative innovation (Benner and Tushman, 2003). The ins and outs of organizational ambidexterity are generally under-researched (Cannaerts, *et al.,* 2016; Palm and Lilja, 2017; Deserti and Rizzo, 2014; Smith and Umans, 2015) showing that the current barriers to innovation are likely to be underpinned by this nested paradox of exploitation and exploration (Papachroni *et al*., 2016; Andriopoulos &Lewis, 2009).

Torfing (2016) sets that advancement capacities depend on the cooperation of a large number of partners including the individuals who are now engaged with the day by day business just as laying on specific hierarchical designs that upgrade the improvement of each representative's imaginative work conduct, thought age and acknowledgment (Bysted and Jespersen, 2014; Moll and de Leede, 2017). Organizational adaptation is rooted not only on short-term efficiency but also long-term innovation which ambidexterity responds to in order to achieve sustainable competitive advantage for organizations (O'Reilly & Tushman, 2008; Smith & Tushman, 2005). Exploitation and exploration are two concepts which are mutually exclusive systems (where the two systems are based on contradictory values and goals, such as efficiency for exploitation and innovation for exploration, and they compete for scarce resources (Mothe & Brion, (2008).

Maintaining appropriate balance between exploitation and exploration is critical since too much innovation may produce an excess of immature technologies, whereas too much refinement may lead to a reduction in variability (increased reliability) at the expense of discovery of better alternatives (Yukl, 2008); a competency trap (Levitt & March, 1988). Exploration and exploitation are incompatible dimensions but organizations need both and that means they are supposed to achieve short term success by using existing knowledge with product-service based perspective, while performing the requirements for adaptability to emerging markets in long-term (Leonard-Barton, 1992). Researchers argue that there is a risk of competency and failure trap if organizations cannot balance these two different dimensions meaning exploitation may drag the organization to competency trap and similarly exploration may cause failure trap for organization (Leonard-Barton, 1992; March, 2003; Siggelkow and Rivkin, 2006).

The intent of exploitation innovation is to respond to current environmental conditions by adapting existing technologies and further meeting the needs of existing customers (Lubatkin *et al.,* 2006) while exploitation focuses on short term success strategy with efficiency, incremental and continuous innovation while exploration requires long-term strategy with flexibility and adaptability and it includes such things as refinement, choice, production, efficiency, selection, implementation, execution among others (March, 1991, He & Wong, 2004; Lin *et al.,* 2007).

Exploitation innovation is associated with mechanistic structure, tightly coupled systems, routinization, control and bureaucracy (He and Wong, 2004) while exploration innovation is intended to respond to as well as drive, latent environmental trends by creating innovative technologies and new markets (Lubatkin *et al.,* 2006)

which is associated with organic structure, loosely coupled systems, improvisation, autonomy and chaos and it includes search, variation, risk taking, experimentation, flexibility, discovery, innovation (March, 1991; He and Wong, 2004) and is associated with developing new technological or marketing methods.

**Table 2.1: Comparison of Exploitation and Exploration Ambidexterity**

| | **Exploration** | **Exploitation** |
|---|---|---|
| **Outcomes** | New designs, new markets, and new distribution channels | Existing designs, current markets and existing distribution channels |
| **Knowledge base** | Require new knowledge and departure from existing knowledge | Build and broaden existing knowledge and skills |
| **Result from** | Search, variation, flexibility, Refinement, production, experimentation, and risk-taking | efficiency and execution |
| **Performance implications** | Distant in time | Short-term benefit |

**Source:** Jansen J. (2005)

The synthesis of these two paradigms, exploitation (processing and refining the core production) and exploration (prospecting activities for new opportunities and innovation), is crucial for organizations (March, 1991).

## 2.2 Theoretical Perspective

Three complementary theories have been used extensively in strategic management literature to explain the relationship between dynamic capabilities and competitive advantage and their developments. These theories are the resource based view; the evolutionary theory of the firm and the dynamic capabilities approach (Aguirre, 2011) which contribute and explain how organizations adopt and develop capabilities to gain and sustain competitive advantage over its competitors (Aguirre, 2011).

### 2.2.1 Porters Competitive Advantage Theory

Porters theory of competitive advantage starts from the principle that the only important concept at the national level is the national productivity (Fota Constantin, 2004) and that firms are source of bundles of resources and mechanisms by which they learn and accumulate new skills; capabilities and forces that enables the rate and direction of their processes (Nonaka & Toyama, 2002). Strategic management field is largely concerned with how firms generate and sustain competitive advantage (Grant, 2001; Ambrosini and Bowman, 2009) because it is the way resources are clustered or interplayed and their fit into the system that is important to the understanding of competitive advantage and firm performance (Bridoux, 2004) which lies upstream of product markets and rests on the firm's idiosyncratic and difficult-to-imitate resources (Porter, 1990).

The term competitive advantage refers to the ability increased through attributes and resources that allows a firm to perform at a higher level or better than others in a similar industry or market (Christensen and Fahey 1984, Kay 1994, Porter 1980 referred to by Chacarbaghi and Lynch 1999 through actualizing a worth making technique not at the same time being executed by any current or possible player (Barney 1991 referred to by Clulow *et al.*, 2003). In contrast to the developmental hypothesis of financial change (Nelson and Winter, 2002) that covers the function of an association's schedules, how they shape and oblige firm development inside an evolving situation, competitive advantage (Porter, 2008) adopts a market position execution strategy of a firm.

The nature of the competition and the sources of competitive advantage are very different among industries and even among the segments of the same industry and a

certain country can influence the obtaining of the competitive advantage within a certain sector of industry; the globalization of the competition and that the appearance of the trans-national companies do not eliminate the influence of a certain country for getting the competitive advantage (Porter, 1990).

In order to gain competitive advantage, a business strategy of a firm manipulates the various resources over which it has direct control and that these resources have the ability to generate competitive advantage (Reed and Fillippi 1990 cited by Rijamampianina 2003). Successfully implemented strategies will lift a firm to superior performance by facilitating the firm with competitive advantage to outperform current or potential players (Passemard and Calantone 2000) because superior performance outcomes and superiority in production resources reflect competitive advantage of the firm (Day and Wesley 1988 cited by Lau 2002). This theory guided the researcher in exhuming the dependence on the relationship which exist between dynamic capabilities and competitive advantage.

### 2.2.2 Resource-based View Theory

Resource-based view theory is a managerial framework used to determine the key strategic resources with the possibility to deliver or convey competitive advantage to a firm (Barney, 1991) and can be exploited by the firm for competitive advantage. RBV theory acknowledges four significant attributes of resources and capabilities in determination of a firm's competitive advantage and they include durability, transparency, straightforwardness, transferability, adaptability and replicability (Teece, 2007). The theory states that companies can have competitive advantage through the development of resources that are peculiar and diversely distributed or dispersed (Barney, 2010).

Edith, (1959) postulates that RBV is a new paradigm with roots in Ricardian and Penrosian economic theories where firms can procure supportable supranormal returns if and just in the event that they have predominant assets and those assets are secured by some type of detaching component blocking their dissemination all through the business. The essential impacts on the RBV originated from crafted by Schumpeter (1934, 1939), Chamberlin (1933), Penrose (1959), Wernerfelt (1984), Barney (1991) and Prahalad and Hamel (1990).

RBV concentrates on the firm's internal resources in an effort to identify those assets, capabilities and competencies with the potential to deliver superior competitive advantage (Barney, 1991). Researchers postulate that for assets to hold potential as wellsprings or sources of sustainable competitive advantage, then they ought to be (VRIN) - valuable, rare, imperfectly imitable and non-substitutable (Barney, 1991; 2010; Ambrosini and Bowman, 2009). RBV recommends that firms must create exceptional, unique, firm-explicit core competencies that will permit them to outperform competitors by doing things differently (Barney, 1991). A key knowledge emerging from RBV is that not all assets are of equivalent significance, nor have the possibility to turn into a wellspring of maintainable competitive advantage (Barney, 1991). The manageability and sustainability of any competitive advantage relies upon the degree to which resources can be imitated, substituted or subbed (Barney, 1991).

The key to firms' prosperity or improvement lies in their capacity to discover or create competencies that are truly distinctive (Ghobadian and O'Regan, 2008). Resources are grouped into tangible: financial and physical possession such as buildings, equipment, vehicles and stocks of raw materials while intangible resources are structure, technology, processes, innovation and cycles (Grant, 2001). RBV perspective acknowledges firm's capabilities to collect, assemble, integrate incorporate and

manage these resources (Aragon-Correa and Sharma, 2003) in light of the fact that achievement relies upon whether firms can judiciously distinguish and utilize significant assets that are uncommon or rare and supreme or not (Barney, 2010).

The underlying assumption of the RBV is that resources are heterogeneous across firms and that this heterogeneity can be sustained over time hence firms can earn super profits (Barney 2001) A company's abilities allude to what it can because of sets or groups of assets cooperating with the end goal for it to accomplish better capacities comparative with its rivals (Grant, 2001). RBV theory does not in any way address how future new important assets can be made and how the current supply of assets can be invigorated, re-coordinated or reconfigured under unstable business sectors or markets (Ambrosini and Bowman, 2009) in that it forgets about the cycle of asset advancement and transformation to the external enviroment.

### 2.2.3 Dynamic Capabilities Theory

This theory posits that a firm is a source of bundles of resources, mechanisms by which they learn and aggregate new aptitudes, abilities and powers that empowers the rate and course of their processes or cycles (Nonaka and Toyama, 2002). Dynamic capabilities theory alludes that firms are required to figure out how to consolidate assets and restore their center skills (Ramachandran, 2011). Dynamic capabilities are portrayed as the company's capacity to coordinate, form, and reconfigure internal and external competencies to address the rapidly changing or evolving environments (Teece *et al.,* 1997). The field of strategic management is largely concerned with how firms generate and sustain competitive advantage (Grant, 2001; Ambrosini and Bowman, 2009).

Researchers are looking for methods where dynamic capabilities can help firms to adapt themselves in changing business situations or environments and changes in business sectors or markets yet the missing parts in those researches are the manner by which these capabilities uphold exploration and exploitation (March, 1991; O'Reilly and Tushman, 2011). Dynamic capabilities theory generally is involved with capabilities for example perceiving market improvements, redirecting resources and furthermore reshaping organizational hierarchical structures and frameworks so they make and address technological innovative chances or opportunities while remaining in alignment with client or customer needs (Teece, 2007).

### 2.2.4 Transformational-Transactional Leadership Theory

This theory touches on effective organizational change management that allows a firm to adapt to changes in the environments by having its leaders as a critical factor for any successful change (Bass *et al.,* 2003). Transformational leaders focus on developing their followers by tapping their potentials, inspiring, promoting collaborating, motivating and by reinforcing positive behaviors and that employees often develop a high level of trust and confidence in such a leader (Bass *et al.,* 2003) by transforming or changing followers' fundamental values, goals and aspirations and by appreciating follower's uniqueness and individually fostering personal development (Rothfelder *et al.,* 2012).

Transactional leadership style focuses on leader-follower exchanges (Von Krogh *et al.,* 2012) and this has been defined in terms of contingent reward and active management by exception (Bass, 1999) and focuses on standardization, formalization, control, and training, transactional leaders can have a positive impact on both feed-forward and feedback learning that reinforces institutionalized learning where such

leaders tend to prefer closed cultures, mechanistic structures, and rigid systems and procedures (Vera and Crossan, 2004).

A transactional leader follows the scheme of contingent rewards to explain performance expectation to the followers and appreciates good performance (Bass, 1999) by believing on contractual agreements as principal motivators (Bass, 1985) and uses extrinsic rewards toward enhancing followers' motivation. Subordinates of transactional leaders' experience lower overall work satisfaction than did the subordinates of transformational leaders (Vera and Crossan, 2004).

## 2.3 Empirical Literature and Hypotheses Development

### 2.3.1 Dynamic Capabilities and Competitive Advantage

Leornard-Barton (1992) submits that dynamic capabilities of the firm reveal the capacity of the organization to successfully implement actions that will lead to competitive advantage that is the use of creative and innovative ideas to handle any changes in the business environment. Barney (1991) postulates dynamic capabilities as the implementation of a value-creating strategy which is not simultaneously being implemented by any current or potential competitors that is when competitors are not able to implement these strategies that is sustained competitive advantage.

Several studies have examined the direct influence of dynamic capabilities and competitive advantage of the firm (Wu, 2010; Hou and Chien, 2010; Ogunkoya *et al.,* 2014). Hou & Chien (2010) posits that dynamic capability is a crucial determinant of a firm's competitive advantage and Aguirre, (2011) studied dynamic capabilities and competitive advantage among Mexican firms and concluded that dynamic capabilities and competitive advantage are likely to be essential to the survival of firms in markets characterized to be innovative and in rapid technological change thus dynamic

capabilities and competitive advantage are inseparable, as firms continuously develop capabilities to confront new capabilities from the environment.

Teece, *et al.* (1997) introduced the concept of dynamic capabilities by considering both internal and external resources and competences of the firms to explain how to achieve competitive advantage in an extremely changing environment. As dynamic capabilities view got more attention, some authors started to explore and explain the mechanisms by which firms' dynamic capabilities should be and are evolved to adapt to environmental and technological changes (Helfat, 2000). Wheeler (2002) defined organizations' dynamic capabilities as firm processes that use resources especially the processes to integrate, reconfigure, gain and release resources to match and even create market change. Dynamic capabilities are seen as organization's activities, procedures, and practices that enhance its competitiveness, thereby helping it to maintain a leading role in its industry (Wheeler, 2002). This study looked into the direct effect of sensing, seizing and reconfiguration capabilities on competitive advantage so as to confirm what other scholars have done.

### 2.3.2 Dynamic Capabilities, Organizational Ambidexterity and Competitive Advantage

Teece *et al.,* 1997 was the first to address the relationship between dynamic capabilities and organizational ambidexterity. Kriz *et al.,* 2014 postulate that organizational ambidexterity is a type of dynamic capabilities or a core component for exploration and exploitation integration. Teece 2014a proposes dynamic capabilities to be a tailored version of dynamic capabilities or a base of dynamic capabilities (O'Reilly and Tushman, 2011). Organizational ambidexterity contributes to sensing the antecedents to determine competitive changes in a volatile environment and

seizing the processes that help to manage new challenges and remain competitive (O'Reilly and Tushman 2011).

Exploration activities, according to March (1991) and Soosay & Hyland (2008) refer to innovative changes, discovering new possibilities, new knowledge and technologies hence firms that have the resources, a strong motivation to innovate and an organizational climate that allows and encourages innovative ideas are the ones that quickly and successfully innovate (March, 1991).

The existing research indicates that ambidexterity is key to organizational success and survival in the market (Benner & Tushman, 2003; Jansen, *et al.,* 2006; Junni *et al.,* 2013; Tushman & O'Reilly, 1996) and improves performance and innovation (Junni *et al.,* 2013; He Wong, 2004). Dynamic capabilities are at the heart of the ability of a business to be ambidextrous that is to compete simultaneously in both mature and emerging markets so as to explore and exploit March, (1991)that inevitably requires senior leaders to manage completely different and inconsistent organizational alignments (Tushman & O'Reilly (1997).

Consistent with Teeces' tripartite taxonomy of sensing, seizing, and reconfiguring (Teece, 2006), ambidexterity requires a coherent alignment of competencies, structures and cultures to engage in exploration, a contrasting congruent alignment focused on exploitation, and a senior leadership team with the cognitive and behavioral flexibility to establish and nurture both. Vorhies *et al.* (2011) who stated that exploration and exploitation strategies, the components of strategic ambidexterity, interact with marketing capabilities to increase organization's performance. Aulakh and Sarkar (2005) attest that certain combinations of exploitation and exploration strategies leads to increased sales performance hence it is

in agreement with Li *et al*. (2008) who found strategic ambidexterity to be associated with enhanced sales performance. Most previous studies confirm that an ambidextrous strategy has a positive effect on organizational performance; however, a few scholars have indicated that ambidexterity has a negative correlation with performance (Menguc, B. and Auh, S. Me 2008). Tushman and O'Reilly (1996) indicated that ambidexterity is more likely to be successful if there is strong social control and a common culture that combines exploration and exploitation an organization (Nieves, J. and Haller, S. 2014). The study sought to determine the moderation effect of organizational ambidexterity on the relationship between dynamic capabilities and competitive advantage of manufacturing firms which other scholars have not done.

### 2.3.3 Dynamic Capabilities, Leadership Style, and Competitive Advantage

The main source for potential competition is competitive advantage, which induces the understanding that leadership plays the main role for an organization gaining competitive advantage leading to an organizations success in the market (Cameron &Quinn, 2005). The role of leadership is vital for a company because it is the backbone of every organization (Bass & Avolio, 2004).

Different leadership styles will have different impacts on an organization's ambidexterity (Jansen *et al.,* 2008; O'Reilly & Tushman, 2011) hence the key leadership quality is the ability of the senior leadership to tolerate and resolve the tensions arising from separate alignments (O'Reilly& Tushman, 2011). Without these capabilities, firms may sense opportunities and threats, but be unable to act on them in a timely manner (Bazerman & Watkins, 2004). Since organizations store such knowledge in procedures, norms, rules, structures and processes, these are skills that

typically cannot be bought, or transferred suggesting that dynamic capabilities are difficult to imitate (Bazerman & Watkins, 2004).

Transformational and transactional leadership styles could be specific forms of strategic leadership focused on shaping organizational form and processes to obtain greater effectiveness (Pawar & Eastman, 1997). Transformational leaders are focused on the identification and development of new ideas and they are able to build, support and stimulate individuals involved in learning processes while transactional leaders contribute to the efficiency and the coordination of existing capabilities, which support the new capabilities (Bass, 1985). Transformational leadership has been suggested as a promoter of organizational change because it helps to achieve followers' identification with the organization's values, mission and visions (Bass *et al.,* 2003) hence makes followers understand the importance of the work and encourages them to look beyond their own interest (Yukl, 2006***).***

CEOs play a critical role, as their actions and decisions create organizational contexts, influence middle manager responses and impact performance (Smith, 2014). Transformational leadership has been associated with turbulent and uncertain environments, relatively poor organizational performance, and periods of organizational inception and decline/renewal, while transactional leadership is more suited to environments that are stable and predictable, satisfactory organizational performance, and mature organizations (Jansen *et al.,* 2009). From a contingency perspective, leadership requirements, responsibilities, and challenges are largely dependent on internal and external factors (Baškarada *et al.,* 2014) which include the environment (Jansen *et al.,* 2006, 2009; Waldman *et al*., 2001; Osborn *et al.,* 2002),

prior organizational performance (March & Simon, 1953), and the stage of organizational life (Vera & Crossan, 2004).

Transactional leadership mainly applies to situations that require institutionalization, reinforcement, or refinement of existing knowledge, while transformational leadership is most appropriate for situations requiring change to the status quo (Jansen *et al.,* 2009). Empirical studies suggest that the relationship between transformational leadership and exploratory innovation may not be straightforward (Jaussi & Dionne, 2003; Keller, 1992; Shin and Zhou, 2003; Elenkov *et al.,* 2005; Jung *et al.,* 2003; Jansen *et al.*, 2009; Rosing *et al.,* 2011; Schweitzer, 2014). By focusing on standardization, formalization, control, and training, transactional leaders can have a positive impact on both feed-forward and feedback learning that reinforces institutionalized learning (Vera & Crossan, 2004) and such leaders tend to prefer closed cultures, mechanistic structures, and rigid systems and procedures. Transactional leadership has been associated with bureaucratic learning systems that comprise sophisticated procedures and rules for controlling the flow of information (Vera & Crossan, 2004; Shrivastava, 1983). Executives should prioritize on scanning of appropriate sectors in both the external and internal environments that are important for firm competitiveness (Garg *et al.,* 2003).

Leadership behaviour influences the performance of both management and employees hence how firms utilize their capital, financial and human resources so as to compete and survive in contemporary business environment (Yukl, 2008). Previous studies have used leadership style as moderator of various predictor variables: Engelen *et al.,* (2015) used leadership behaviour to moderate entrepreneurial orientation and firm performance; Todorovic (2007) found out that there is a significant effect of

charismatic leadership on the entrepreneurial orientation that is firm performance relationship; Panagopoulos (2010) used leadership behaviour and the environment to moderate sales strategy and found out that transformation leadership among other aspects exerts significant moderating effect on the relationship.

Leadership style plays a role in the complex and intangible net of relationships in a firm, which is difficult for outsiders to immediately observe and imitate (Panagopoulus & Avlonitis, 2010). Research has been done on leadership styles and competitive advantage, but one of the main impacts of leadership on competitive advantage has not yet been sufficiently studied (Khan & Anjum, 2013). There are numerous leadership and motivation concepts and method which are described to lead to organizational transformation and therefore result in competitive advantage but transformational, transactional and charismatic leadership concepts seem to be the most effective once beside all others (Howell & Avolio, 1995).

As a mediator, leadership styles modify the form or strength of the relation between dynamic capabilities and competitive advantage (Aguinis, 2004; Aiken & West, 1991) to capture the dimensions of transformation, transactional and laissez-faire styles. The mediation model therefore was guided by the resource-based view's theoretical perspective (Barnery, 2010) that intangible resources interact with strategic posture to yield competitive advantage (Newbert, 2007). The study therefore examined the mediation effect of leadership style (transformational, transactional and laissez-faire) on the relationship between dynamic capabilities (sensing, seizing and reconfiguration) and competitive advantage of manufacturing firms in Kenya.

### 2.3.4 The Size of the Firm, Dynamic Capabilities and Competitive Advantage

The study provided information on other additional variables considered necessary to control for so as to isolate the direct and moderated effect of dynamic capabilities and competitive advantage (Sakakibara *et al.,* 1997). Previous study measured the size of the firm using the number of employees (Allocca & Kessler, 2006) where small firms are those with fewer than 30 employees and large firms are those with more 500 employees (Arend, 2014).

Small firms have more limited internal resources compared to larger firms and therefore fewer resources to prepare for disruptive events (Smallbone *et al.,* 2012) while larger firms have a higher propensity to prepare for disasters as they have more resources available in terms of dedicated staff as well as finances Webb *et al.*, (2000). Small firms often rely on local and/or niche markets being highly dependent on a limited number of key customers as well as suppliers who are often small firms themselves (Smallbone *et al.,* 2012; Storey, 1994).

### 2.3.5 The Age of the firm, Dynamic Capabilities and Competitive Advantage

Previous studies have shown that age makes knowledge and skills obsolete and leads to organizational decay (Agarwal & Gort, 2002; Loderer & Waelchli, 2010) though firms tend to discover what and how they can perform better than others (Ericson & Pakes, 1995; Loderer & Waelchli, 2010). Older firms are reluctant to adopt advanced practices and they often fail to realize the effect of dynamic capabilities in their firms (Agarwal & Gort, 2002; Loderer & Waelchli, 2010). It is noted also that consistent with organizational evolutionary, after a certain threshold, rigidities, rise in costs, reduced margins, slowed growth, assets obsolescence and decline in investment and research and development kick in (Agarwal & Gort, 2002; Loderer & Waelchli,

2010). Age will be determined using the number of years a firm has been in operation since the date of business commencement.

## 2.4 Conceptual Framework of Dynamic Capabilities, Organizational Ambidexterity, Leadership Style and Competitive Advantage of Manufacturing firms in Nairobi.

The study examined moderated mediation of organizational ambidexterity and leadership style on the relationship between dynamic capabilities and competitive advantage of manufacturing firms in Nairobi, Kenya. The conceptual framework was the basis of hypotheses, construction of the questionnaire and analysis of collected data as shown in Figure 2.1.

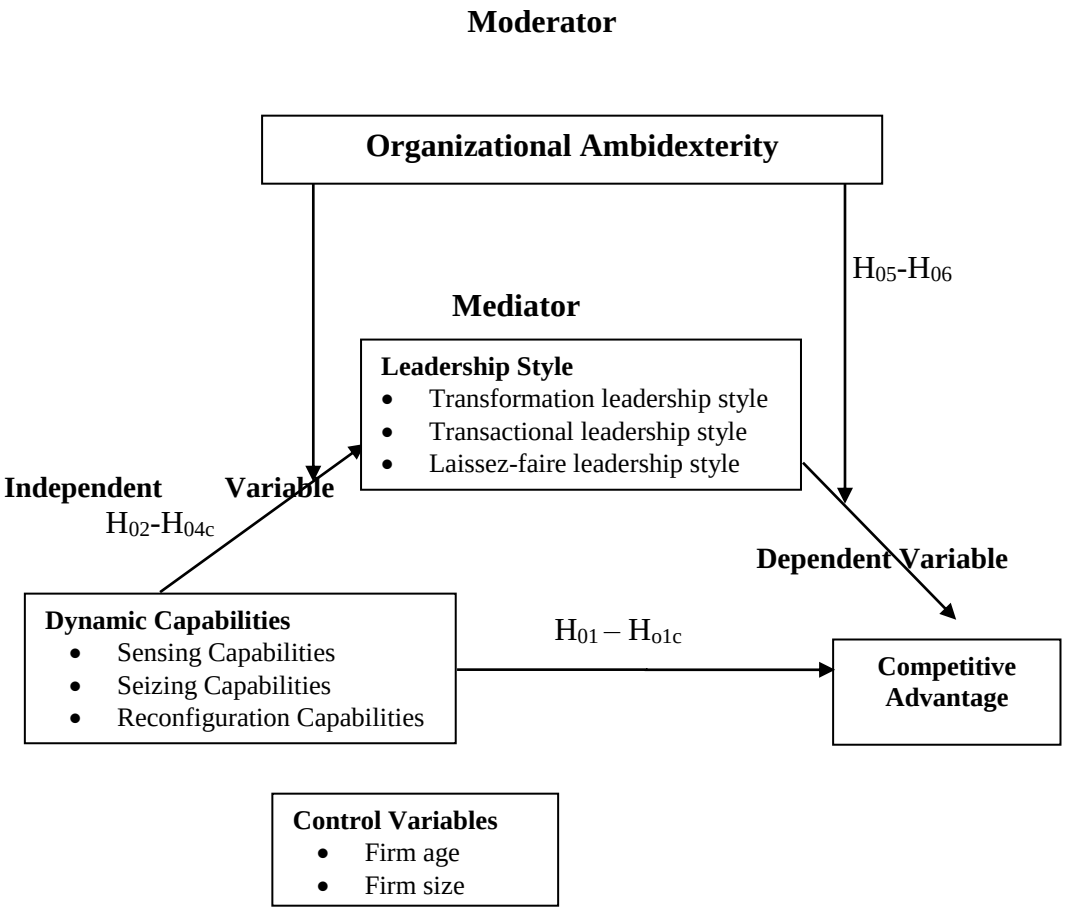



**Figure 2.1: Conceptual framework for the Study**

**Source:** Researcher (2019)

# CHAPTER THREE

# RESEARCH METHODOLOGY

## 3.0 Introduction

This chapter presents the philosophical assumptions underpinning the study as well as research strategy and empirical techniques applied. It presents in detail the research philosophical paradigm, research design, study area, population, sample size, sampling design, sampling procedure, unit of analysis, data collection method, validity and reliability of the research instrument, operationalization and measurement of variables, data analysis procedures, model specification, regression analysis assumptions, ethical considerations and limitations of the study.

## 3.1 Research Philosophy

Research philosophy is the justification of the approach to which results would be interpreted and implemented (Bryman, 2016) through development of the research background, research knowledge and its nature which emphasizes the idea of observation and operationalization of issues that are studied that should be measured as the essence of any scientific study (Saunders *et al.*, 2007) which was the intention of this study. Philosophical concepts in research assist in specifying research design and strategy that give direction from the research questions to its conclusions and is quantitative in nature for it gives facts and accounts that correspond to independent reality that is value free and prioritizes observation (Ericksson & Kovalainen, 2015). This indicates the researcher's independence and that the researcher does not get affected by the research subject (Gray, 2013).

The key features of positivism as quantitative, uses large samples thus generalizable, hypothesis oriented and has specific data (Yilmaz, 2013). The positivist approach on

scientific discovery to the research design, sample size, collection and analysis of the data was strictly followed by the researcher to ensure that results and interpretation gives new knowledge on the area of study through the discovery of objective truth and with an intention of filling the knowledge gap. The study used structured assumptions of reality in terms of ontology and epistemology where ontology is what reality exists out there and in what knowledge structure while epistemology refers to how a researcher gets to know about the reality (ontology) which exists in the world there (Ahiauzu, 2010; Neuman, 2011, Krauss, 2005) and is concerned with the creation of knowledge that is how knowledge is produced.

The research was based on already existing theories with the main objective to explain a causal effect relationship between dynamic capabilities, leadership style, organizational ambidexterity and competitive advantage of manufacturing firms located in Nairobi, Kenya. The researcher developed hypotheses and tested them with the intention of drawing general conclusions from the results obtained hence give recommendation to various stakeholders of the various companies under study.

In the study, dynamic capabilities which is the independent variable was operationalized and measured using three dimensions of sensing, seizing and reconfiguration capabilities with thirty three item scale developed and validated by Teece (1997). Organizational ambidexterity was measured using fourteen items scale of innovation technology developed by O'Reilly & Tushman (2011) while leadership style was measured using Bass & Avolio (1997) thirty three measure scale and competitive advantage using Porters (1997) scale. The variables were operationalized and the information was obtained from questionnaires distributed to the respondents with independence and privacy on the part of the respondents maintained.

### 3.2 Research Design

This study was quantitative in approach through explanatory research design because the main purpose was to understand why things happen the way they happen so as to build, extend, elaborate or test a particular theory (Neuman, 2014). In order for causal relationships between variables to be established it is paramount to use explanatory research design (Saunders *et al.,* 2012). This is the arrangement of conditions for collection and analysis of data in a manner that aims to combine relevance to the research purpose with the procedure (Zikmund *et al.,* 2013).

The study employed explanatory design in order to establish the causal relationships between variables used (Saunders *et al.,* 2011) as it offers the chance for a logical structure of the inquiry into the problem of study or finding out what is happening and seeking new insights (Robson, 2002) into relationships that exist between research variables which for this case are dynamic capabilities, leadership style, organizational ambidexterity and competitive advantage. This design reliably informed and allowed use of inferential statistics so as to determine variable relationships (Hair *et al.,* 2006) where the dependent variable measures the consequences of the independent variable being studied (Mouton & Marais, 1992).

The study therefore main objective was to assess if the independent variable (dynamic capabilities) has effect on the dependent variable (competitive advantage) with introduction of a moderator (organizational ambidexterity) and mediator (leadership style) hence the study was quantitative in style (De Vellis, 1991; Sekaran, 2000; Baxter, 2004).

### 3.3 Study Area

The study was conducted in the manufacturing firms located in Nairobi, Kenya. The study used list of firms in the manufacturing sector list (KAM, 2018) so as to obtain a more comprehensive and representative list of the target population as per recommendations by other scholars (Lee, 2004; Wei & Lau, 2010; Behnke & Muthami, 2011; Kamaku & Waari, 2011; Mwangangi, 2016 and Onyanchu *et al.*, 2018). The sector contributes to two-thirds of the county's industrial sector and 10% of the GDP forcing the government of Kenya to focus more on the sector's growth so as to boost its long term economic development which is projected to be 20% by the year 2030 (National Industrialization Policy Framework for Kenya, 2011-2015). Nairobi county hosts the capital city of Kenya and has a population of 3.5 million (Nairobi County Integrated Development Plan 2014).

KAM source provide a list of all large firms in the Kenyan manufacturing sector (Lee, 2004; Beheshti *et al.*, 2014) which are fourteen (14) sectors that covers twelve (12) sectors in processing and value addition and two (2) service and consultancy firms (Appendix III). Service and consultancy firms carries 16% of the total KAM membership where service industries are banks, insurance firms, transporters, communication, clearing and forwarding and advertising while consultancy provide technical, professional and advisory services to the formal industry for example areas on environment, labour, management, training and process improvement among others (KAM, 2018). The study area was limited to manufacturing sector located at Nairobi because 80% of manufacturing firms are located in Nairobi (Anzetse, 2016, KAM 2018) and that these firms are involved in different activities hence dynamic capabilities required for sustained competitive advantage. The responses from

managers of these firms were used in the study hence the researcher purposed to draw inferences from the managers' responses.

The rationale for choosing manufacturing firms located in Nairobi, Kenya as the study was premised on the fact that researchers have found out that these sectors face increased competition from cheap imports, resource constraints, regulatory challenges, economic issues, lack of capital, poor performance and infrastructure among others (Onyanchu *et al,*. 2018; Mbalwa *et al.*, 2014; Love, 2011) evidenced by firms' closure, shifting business to other regions or countries.

### 3.4 Target Population

Target population is the entire group of people that the researcher wishes to investigate so as to make inferences upon (Sekaran & Bougie, 2016). Population is an extensive collection of all the subjects from which a sample is drawn (Zikmund *et al*., (2013). In Kenya, the sector contributes average of 10% of the national GDP and employs over two million people which include stakeholders from local and international buyers, investors and the Government of Kenya (GoK, 2014a). The study targeted this sector because like many developing countries, the level of innovativeness is relatively low compared to many countries in developed economies hence this sector should not continue operating under the existing internal and external constraints in capabilities but invest in more of research and development, innovation and strategies in order to keep up with the competition.

This study focused on firms in manufacturing sector located at Nairobi, Kenya considering that 80% of the firms are situated in Nairobi (Anzetse, 2014, KAM, 2018). KAM list of manufacturing firms nationally is 1177 but Nairobi as the capital

city of Kenya majorly carries the biggest percentage (80%) as shown in Appendix III. The derivation of the total population is shown in Table 3.1.

**Table 3.1: List of Manufacturing firms in Nairobi, Kenya**

| S. No. | Industry/Strata | Total |
|---|---|---|
| 1. | Building, Mining and Construction | 39 |
| 2. | Chemical and Allied Sector | 78 |
| 3. | Energy, Electrical and Electronics | 47 |
| 4. | Food and Beverages | 93 |
| 5. | Fresh Produce | 30 |
| 6. | Leather and Footwear | 25 |
| 7. | Metal and Allied | 91 |
| 8. | Motor Vehicle and Accessories | 46 |
| 9. | Paper and Board | 67 |
| 10. | Pharmaceutical and Medical Equipment | 22 |
| 11. | Plastics and Rubber | 74 |
| 12. | Services and Consultancy | 69 |
| 13. | Textiles and Apparel | 71 |
| 14. | Textile, Wood and Furniture | 43 |
| | | **759 firms** |

**Source:** KAM (2018)

The unit of analysis was managers which are the Production/Operations Managers and Marketing Managers. Previous studies targeted manufacturing firms that are members of the KAM (Anzetse, 2014). These firms were selected because they represented a big portion of the industry hence provided a representative sample for study. The target respondents consisted of two senior managers who report to the CEOs from the department of production and marketing considering that they know their firm competitive advantage, actual achievement and that they can also make informed decision of the different measurement scales of dynamic capabilities, organizational ambidexterity, leadership style and competitive advantage. These two managers had regular interaction with the CEO especially on the issues pertaining to manufacturing, dynamic capabilities and competitive advantage hence had sufficient knowledge in answering questions about the leadership style. These managers are also responsible in defining and helping in implementation of their organizational

strategies even though they did not represent the firm's entire management but they formed key informants pertaining to leadership style (Corsten & Field, 2005).

### 3.5 Sample Design, Sampling Procedure and Unit of Analysis

The sampling design provided detailed procedure of extracting a representative sample from the target population while the sampling procedure detailed upon the steps used in deciding on the actual respondents, how they were reached and how their views were obtained through the questionnaires. The study used stratified simple random sampling technique to identify sub-groups in a population into separate heterogeneous subsets that possess the same characteristics so as to ensure equitable representation of the population sample (Zikmund *et al.,* 2013). The study was stratified according to the type of industry which included building, mining and construction; chemical and allied sector; energy, electrical and electronics; food and beverages; fresh produce; leather and footwear; metal and allied; motor vehicle and accessories; paper and board; pharmaceutical and medical equipment; plastics and rubber; services and consultancy; textiles and apparel, textile, wood and furniture (Table 3.2) according to KAM 2018 report. The study appreciated the determinants of a good sample that is target population, sample size and sampling method because a correctly defined, identified and truly representative sample do affect the quality of the results (Zikmund *et al.,* 2012) hence there was no need to choose every item in a population because the results of the sample reflected the same characteristics as the population as a whole.

Manufacturing and service industries operating in Nairobi forms the sampling frame for this study from which the sample and unit of analysis was picked. Probability sampling was used because it is commonly used in survey-based study and allow each member of the population to have equal probability or chance of being selected

(Roberts-lombard, 2002) hence removes the danger of biasness in the selection process which may arise from own opinion or desire (Frey *et al.,* 2000). Probability sampling allows the researcher to make inferences from the sample about a population hence be able to answer questions to meet set objectives (Saunders *et al.,* 2007).

### 3.5.1 Sample Size

This is the process of obtaining a representative sample size for the study based on the number of accuracy factors brought about by the determined goals, variables to be measured, the estimated size of the population and the accepted margin error (Watson, 2001; Raosoft, 2014). Sample size of 321 firms was derived from the target population of 795 firms. The confidence level was set at 95% and correspondingly the accepted margin of error set at ±5%. Researcher emphasized appropriate and adequate sample size so as to capture the desired effect size and precision of findings that can be inferred back to the population (Naing *et al.,* 2006; Blanche *et al.,* 2006). In order to determine the sample size from the target population of 795 firms was calculated using Yamane, (1995) formula so as to select a sample size as shown below:

$$n = \frac{N}{(1 + Ne^2)}$$

$$n = \frac{795}{(1 + (795\ x\ .0.05^2)}$$

$$n = 321\ firms$$

Where: n = sample size;

N = population size and

$e$ = the error of sampling

The strata was adopted from the KAM (2018) list as shown in Table 3.2 where the actual managers or respondents from each company was identified through simple random sampling because it was deemed fit as it allowed the selection of a sample

from each stratum without biasness (Zikmund *et al.,* 2013). In a case where a respondent was chosen and failed to participate in the study then he/she was replaced with the nearest respondent with matching characteristics as a way of enhancing the response rate.

**Table 3.2: Study Sample**

| S. No. | Industry/Strata | Target population | Sample per strata |
|---|---|---|---|
| 1. | Building, Mining and Construction | 39 | 20 |
| 2. | Chemical and Allied Sector | 78 | 32 |
| 3. | Energy, Electrical and Electronics | 47 | 17 |
| 4. | Food and Beverages | 93 | 48 |
| 5. | Fresh Produce | 30 | 11 |
| 6. | Leather and Footwear | 25 | 9 |
| 7. | Metal and Allied | 91 | 47 |
| 8. | Motor Vehicle and Accessories | 46 | 16 |
| 9. | Paper and Board | 67 | 22 |
| 10. | Pharmaceutical and Medical Equipment | 22 | 7 |
| 11. | Plastics and Rubber | 74 | 28 |
| 12. | Services and Consultancy | 69 | 23 |
| 13. | Textiles and Apparel | 71 | 27 |
| 14. | Textile, Wood and Furniture | 43 | 14 |
| | | **759 firms** | **321 firms** |

**Source:** Researcher (2019) adopted from KAM (2018)

795 manufacturing firms was the target population and the sample size obtained was 321 firms. A further adjustment of 20% was made to cater for non-response that is 321 x .20 (Bartlett, 2001), translating to adjusted sample size of 385 for purposes of this study. Two senior managers from each firm were the respondents giving a total of 770 managers hence the adequate sample size for the study (Van Voorhis & Morgan, 2007). A sample of 50-100 is considered very poor; 100-200 poor, 300-400 good; 400-500 very good, and over 1000 excellent (Comfrey & Lee, 1992).

### 3.5.2 Sampling Design

Manufacturing and service industries operating in Nairobi forms the sampling frame for this study from which the sample and unit of analysis was picked. The study used

stratified simple random sampling technique to identify sub-groups in a population into separate heterogeneous subsets that possess the same characteristics so as to ensure equitable representation of the population sample (Zikmund *et al.,* 2013). Probability sampling was used because it is commonly used in survey-based study and allow each member of the population to have equal probability or chance of being selected (Roberts-lombard, 2002) hence removes the danger of biasness in the selection process which may arise from own opinion or desire (Frey *et al.,* 2000). Probability sampling allows the researcher to make inferences from the sample about a population hence be able to answer questions to meet set objectives (Saunders *et al.,* 2007).

### 3.6 Unit of Analysis

Unit of analysis is the type of unit that the researcher uses when measuring the target respondents (Neuman, 2007). Unit of analysis for this study was the firm because dynamic capabilities is the firms' strategy to competitive advantage (Hair *et al.,* 2010; 2013) with the sole purpose to address the type of unit that the researcher used when making measurements of the population. The target respondents consisted of two senior managers who report to the CEOs from the department of production and marketing because they know their firm competitive advantage, actual achievement and that they can give informed decision of the different measurement scales of dynamic capabilities, organizational ambidexterity, leadership style and competitive advantage.

The number of multiple raters may be as small as two (Cohen, 1960; Rourke *et al*., 2001; Gwet, 2008; McHugh, 2012) which this study used hence reliability of the results. These two managers had regular interaction with the CEO especially on the

issues pertaining to manufacturing, dynamic capabilities and competitive advantage hence had sufficient knowledge in answering questions about the leadership style. They were also responsible in defining and helping in implementation of their organizational strategies even though they did not represent the firm's entire management but formed key informants pertaining to leadership style (Corsten & Felde, 2005).

### 3.7 Data Collection Instruments and Procedure

Researcher's choice on data collection involved type of data, sources of data, method, data collection instrument and data measurement levels.

#### 3.7.1 Sources of Data

Data was collected from primary sources through structured questionnaires that were administered to managers of the manufacturing firms in Nairobi, Kenya because it is a good source of empirical studies and tends to reduce measurement errors (Hair *et al.,* 2006; Malhotra &Birks 2007). Closed-ended questions are intended to check facts or assumptions, validate details and provide responses that qualify the respondent in some way so as to provide comparable sample data (Greener, 2008).

The managers reported their perception on the variables under study that is dynamic capabilities, organizational ambidexterity, leadership style and competitive advantage but (Tkaczynski *et al.,* 2010). It is worth noting that a tool should be generated that reflects the underlying objectives and hypothesis as there is no best medium for surveys because each instrument has its own merits and demerits (Gill and Johnson, 2002).

The instrument was pretested using manufacturing firms in Eldoret County because of the modification and change in context of their use. Respondents from Eldoret County

did not form part of the actual study process but were only used for pilot testing process.

### 3.7.2 Data Collection, Instruments and Administration

Structured questionnaires were used to collect data in line with recommendations of Saunders *et al.,* (2007) where respondents in the study sample were requested to provide responses by filling in the questionnaire. Self-administered questionnaire is a data collection tool in which written questions are presented that are to be answered by the respondents in written form (Hair *et al.,* 2013). The questionnaire method was deemed appropriate for the respondents because they were literate, could be provided in writing, and it was easy to classify and analyze the data collected from the study. The questionnaires also catered for the population that was large in relation to the available time (Oso & Onen, 2005).

The researcher took time to train the four graduate assistants on data collection process and how to show respect to respondents, how to handle research material, the general study procedure and how they would ensure they delivered the questionnaires to the targeted respondents. The collection of data was conducted by the researcher with the help of four research assistants who are graduate students of School of Business because of their knowledge on research work so as to help data collection completion in stipulated time. The respondents then filled the questionnaires by way of ticking respective responses that were reflective of his/her opinion about the various statements in the questionnaire (Saunders *et al.,* 2007; Vagias, 2006).

On completion of data collection, all the questionnaires were checked for completeness before data entry and analysis. Where a respondent was not in a position to fill the questionnaire on the spot, he/she was allowed upto a period of one month

from the time the respondent received the questionnaire. In order to ensure good response rate, the researcher ensured that the survey questionnaires were short and concise to avoid boredom and unanswered questionnaires. Contacts were exchanged and proper record of the respondents ensured for prompt callback and follow up on picking of the questionnaires. Research assistants physically delivered the questionnaires and ensured that they pick the completed ones as agreed upon by the researcher and the respondent.

The instrument was divided into four major sections besides the introduction section where the introduction briefly informed the respondents of the content of the questionnaire and also re-affirmed to them that the information they were to provide would be treated with confidentiality. Section A was organizational profile entailing type of company, department, size and age of the firm with questions designed to determine sample demography and sample bias. Section B was competitive advantage; Section C dynamic capabilities (sensing, seizing and reconfiguration capabilities); Section D was organizational ambidexterity and Section E leadership style.

The number of multiple raters may be as small as two (Cohen, 1960; Rourke *et al*., 2001; Gwet, 2008; McHugh, 2012) which this study used hence reliability of the results. The multirater approach has the advantage of using the multiple judgments provided by more than one rater as the basic data hence greater reliability of their mean unlike when the response is from one rater (McHugh, 2012). Likert scale require respondents to indicate a degree of agreement or disagreement with each series of statements about specific attributes, and it forces respondents to discriminate among the selected items hence an appropriate tool because the required information

is primary data (Malhorta, 2004). The data instrument was based on a Likert-type of scale which enabled the collection of answers to specific questions based on responses on aspects of the firm's manufacturing business or operational processes and its competitive advantage in the market for example a 5-point scale used 1=Strongly disagree; 2=Disagree; 3=Neutral; 4=Agree; 5=Strongly agree allowed the respondents to indicate the extent to which they agree or disagree with statements posed on the questionnaire hence avail wider choice of responses (Robson, 2002).

Closed-ended questionnaire was used so as to motivate the respondents not to think so much and hence save on time. The questionnaire focused on effect of dynamic capabilities on competitive advantage with moderation of organizational ambidexterity and mediation of leadership style of manufacturing firms in Nairobi. This was administered by the researcher with the help of research assistants so as to explain the purpose of the research, explain some areas which are not clear to the respondents and also get insight of the research study.

Although the instrument in this study had items that had been validated and used before, it was pretested because of the change in context of their use. The respondents who were used for the pretest at manufacturing firms (70 firms) at Eldoret were not part of the actual study process and were only used for testing purposes. Follow up visits were made in places where some respondents were not available or were not ready to complete or fill the questionnaire within the first time of visiting their firm. The justification for using questionnaire as a data collection instrument is because questionnaires are above the researchers' effect and variability which conserves objectivity of collected data, they less costly in terms of money and can be quickly

administer; are highly convenient for the respondents as they could fill them during their free time (Yang and Chang, 2008; Hair *et al.,* 2013).

### 3.7.3 Data Collection Procedure

Both descriptive and quantitative data were collected using the questionnaires that were administered to the respondents. The researcher coordinated the whole process by providing guidance and feedback to the research assistant. A research permit was obtained from the National Council for Science and Technology (NCST) to allow the researcher to conduct research at the manufacturing firms located in Nairobi, Kenya. A total of 770 questionnaires were administered to the participants using four research assistants who are graduate students of School of Business because of their knowledge on research study methodology in their studies and had some experience in some research projects.

The researcher took time to train the four graduate assistants on data collection process and how to show respect to respondents, how to handle research material, the general study procedure and how they will ensure they deliver the questionnaires to the targeted respondents. The respondents then filled the questionnaires by way of ticking respective responses that were reflective of his/her opinion about the various statements in the questionnaire (Saunders *et al.,* 2007; Vagias, 2006). A transmittal letter was attached to the questionnaire indicating clearly the purpose of the information sought and requesting that all the questions be answered. Once the questionnaires were received, the researcher coded, edited and the response details inputted into SPSS software for analysis.

### 3.8 Measurement of Scales

The study relied on and adapted existing operationalized items that were previously used and accepted in previous studies hence appropriate scales for the constructs developed through review of the relevant literature. Appropriate adaptations were made to suit the uniqueness of research by making the tool context-specific where necessary. All constructs were measured using ordinal data on a Likert-type of scale except for the control variables which were of interval scale (Alkharusi, 2012).

All the four variables: dynamic capabilities; organizational ambidexterity, leadership style and competitive advantage were measured using 5-point likert scales (Zikmund *et al.,* 2013) because Likert scales with five-point or more were desirable than those that were shorter hence offer more variance, more sensitive and higher degree of measurement and information. The researcher constructed scales and items based on the conceptual domain of focal constructs to cover independent variables: sensing capabilities, seizing capabilities and reconfiguration capabilities, organizational ambidexterity as the moderator, leadership style as the mediator, control variables being age and size of the firm and dependent variable being competitive advantage.

#### 3.8.1 Measurement of the Independent Variable – Dynamic Capabilities

The study's measurement of dynamic capabilities conforms to the definition of dynamic capabilities by Teece & Pisano (1994), refined by Teece, (2007), and Jiao *et al.,* (2010). Well defined constructs should be based on theory, and the operationalization of these constructs through measures with high degrees of validity and reliability is a prerequisite for any study (Churchill, 1979). DC were

operationalized using thirty-three statement items describing the three dimensions (sensing, seizing, and reconfiguration capabilities) adapted from previous studies with only minimal adjustments to ensure content validity of the measures.

Sensing capability was measured using two scales that is recognition of opportunities and threats from the environment which consisted of four items adopted from prior scholars (Cao, 2011; Lichtenthaler, 2009; Danneels 2008; Jansen, 2005) while the second scale was monitoring of internal capabilities measured using four items adopted from MacInerney-May, (2012). Seizing capabilities had three scales which included knowledge acquisition, knowledge sharing and knowledge integration as per MacInerney-May (2012) recommendations. Knowledge acquisition scale was measured using three items (MacInerney-May, 2012; Lichtenthaler, 2009; Jansen *et al*., 2005); knowledge sharing three items (MacInerney-May, 2012; Tippins & Sohi, 2003) and knowledge integration four items (MacInerney-May, (2012).

Reconfiguration capabilities variable was measured using two scales: capabilities creation and capabilities integration. Capabilities creation measured four items adopted from MacInerney-May, (2012) while capabilities integration three items adopted from various previous studies (MacInerney-May, 2012, Prieto *et al.*, 2009; Pavlou & El Sawy, 2006). Table 3.3 shows summary of the independent variables, count of items used and the sources of the measurement scales used in the study:

**Table 3.3: Summary of Independent Variable and the Related Studies**

| Research Variable | No. of Items | Sources |
|---|---|---|
| Sensing capabilities | 11 | Pavlou *et al* (2011); MacInerney-May (2012); Ellonen *et al* (2009, 2012); Teece (2007); Hou (2008); Arend (2014). |
| Seizing capabilities | 11 | Pavlou *et al* (2011); MacInerney-May (2012); Ellonen *et al* (2009, 2012); Teece (2007); Hou (2008); Arend (2014). |
| Reconfiguration capabilities | 11 | Pavlou *et al* (2011); MacInerney-May (2012); Ellonen *et al* (2009, 2012); Teece (2007); Hou (2008); Arend (2014) |
| **TOTAL 33 Scales** | | |

**Source:** Researcher (2019) adapted from MacInerney-May (2012**)**

### 3.8.2 Measurement of the Moderating Variable - Organizational Ambidexterity

The study examined organizational ambidexterity by focusing on dimensions of exploitation and exploration innovation (Gibson &Birkinshaw, 2004) of 14 item scale. The measure was on a 5-point scale ranging from 1 (strongly disagree) to 5 (strongly agree) that was developed by Lubatkin *et al.,* (2006) where exploitation innovation had 7 items and exploration innovation 7 items (Table 3.4).

**Table 3.4: Organizational Ambidexterity Measurements Items**

| Research Variable | No. of Items |
|---|---|
| Exploitation Innovation Technology | **7** |
| Exploration Innovation Technology | **7** |
| | **TOTAL 14 items** |

**Source:** Researcher (2019) adapted from Lubatkin *et al.,* (2006)

### 3.8.3 Measurement of the Dependent Variable – Competitive Advantage

Five measures were used to estimate competitive advantage that covered purely on uniqueness or difficulty to mimic, service applicability, sustainability, superiority and innovation speed according to levels of measurement classification by Trochim (2000;

2006) as derived from its operational definition. This was 5-point Likert scale as per similar efforts to operationalize competitive advantage in the past (Newbert, 2008).

### 3.8.4 Measurement of the Mediating Variable - Leadership style

The study adopted Multi Factor Leadership Questionnaire full range model developed by Avolio & Bass (2004) using ordinal scales on a 5-point Likert type scale ranging from 1 (strongly disagree) to 5 (strongly agree). This MLQ v5x accords more confidence in measuring the nine leadership factors (Table 3.5) hence representing leadership style (Muenjohn & Armstrong, 2008).A total of thirty-three items that measure leadership style from previous studies (Antonakis *et al.*, 2003; Coetzee & Schaap, 2005; Spinelli, 2006; Bass & Avolio, 2007) was used which covered idealized influence (attributed), idealized influence (behavioural), inspirational motivation, intellectual stimulation, individual consideration, contingent reward, management by exception (active), management by exception (passive) and laissez-faire.

**Table 3.5: Leadership Style Measurements Items**

| Research Variable | No. of Items |
|---|---|
| **Transformational Leadership Style** | |
| Idealized influence (attributed) | 4 |
| Idealized influence (behavioural) | 4 |
| Inspirational motivation | 4 |
| Intellectual stimulation | 4 |
| Individualized consideration | 4 |
| **Transactional Leadership Style** | |
| Contingent reward | 3 |
| Management by exception (Active) | 3 |
| Management by exception (Passive) | 3 |
| **Laissez-faire Leadership Style** | 4 |
| | **TOTAL 33 ITEMS** |

**Source:** Researcher (2019) adapted from Coetzee & Schaap (2005); Bass & Avolio (2004)

### 3.8.5 Measurement of Control variables

These are firm specific and external factors that may affect a firm's competitive advantage, regardless of its dynamic capabilities and strategic alliances. We therefore controlled for age and firm size where the age of the organization or firm size was operationalized as the number of employees in the organization. Size of the firm ranged from 300 and below to above 900 employees while the age or number of years the firm has been in operation ranged from less than 10 years to above 30 years.

### 3.8.6 Summary of the variables measurement

The summary of all the variables, count of items and the type of measurements used in the study are shown in Table 3.6.

**Table 3.6: Summary of Types of Measures**

| Research Variable | Type | No. of Items | Type of Measurements |
|---|---|---|---|
| Competitive advantage | Dependent Variable | 9 | Likert-scale of 1-5 |
| Sensing capabilities | Independent Variable | 11 | Likert-scale of 1-5 |
| Seizing capabilities | Independent Variable | 11 | Likert-scale of 1-5 |
| Reconfiguration capabilities | Independent Variable | 11 | Likert-scale of 1-5 |
| Transformational LS | Mediator Variable | 11 | Likert-scale of 1-5 |
| Transactional LS | Mediator Variable | 11 | Likert-scale of 1-5 |
| Laissez-faire LS | Mediator Variable | 11 | Likert-scale of 1-5 |
| Organizational ambidexterity | Moderator Variable | 14 | Likert-scale of 1-5 |
| | | **TOTAL 89 items** | |

**Source:** Researcher (2019)

### 3.9 Reliability and Validity of the Research Instrument

When evaluating or formulating a specific instrument, reliability and validity are two of the most important aspects to be considered (Booth, 1995) using the statistical criteria to assess whether the research provides a good measure (Whitelaw, 2001) that is the dependability or consistency of the research instrument (Neuman, 2007; Hair *et*

*al.,* 2013) Reliability is concerned with the consistency of the particular instrument, while validity is concerned with systematic or consistent error.

### 3.9.1 Pilot Test

Pilot study was done in manufacturing firms in Eldoret County so as to determine how long the questionnaire takes or whether instructions given are clear and general opinion of the respondents on each question (C. Cooper & P. Schindler, 2008, D. Cooper & Schindler, 2011). The main purpose of conducting a pilot test was to refine the questionnaire hence respondents would not have trouble in answering the questions and also reduce data documentation. Cooper and Schindler, 2008; 2011 posits that pilot test is done to identify flaws in architecture, instrumentation and to provide proxy data for likelihood sample collection.

### 3.9.2 Reliability of the research instrument

This is the dependability or consistency of measurement instrument that is the extent to which the instrument yields the same results on repeated trials (Babbie &Mouton 2001; Samuelson, 2010 and Hair *et al.,* 2013); extent in which measures are free from random error which may affect the reliability of a measure or the extent to which if it is large indicates the extend of the unreliability. Reliability of the study measures was determined using Cronbach alpha coefficient, which was used to assess the internal consistency or homogeneity among the research instrument items (Sekeran, 1992).

The questionnaire was constructed based on measures, scales and items from previous literature and further checks done through pilot study by pretesting of the instrument (Saunders *et al*., 2007) before final administration hence ensure that the measures of study are trustworthy, dependable, authentic, genuine, reputable and dependable. The data collected was subjected to Cronbach's alpha coefficients test (Iacobucci &

Duhacheck, 2003; Simatupang & Sridharan, 2005) separately for each variable so as to assess consistency and homogeneity among the variable measures (Hudson *et al.,* 2001: Suliman & Iles, 2000). The results (Table 3.7) enabled the researcher to know how data collected and analysis procedures yielded consistent findings and provide assurance that the same results could be expected on any other subsequent similar occasions or replicated elsewhere (Kimberlin & Winetrstein, 2008).

**Table 3.7: Reliability Results**

| Construct | Dimensions | No. of Items | Cronbach's alpha coefficient |
|---|---|---|---|
| Competitive advantage | Competitive Advantage | 9 | .793 |
| Dynamic capabilities | Sensing capabilities | 11 | .863 |
| | Seizing capabilities | 11 | .827 |
| | Reconfiguration capabilities | 11 | .875 |
| Leadership style | Transformational style | 11 | .860 |
| | Transactional style | 11 | .765 |
| | Laissez-Faire style | 11 | .914 |
| Organizational ambidexterity | Exploitation innovation | 7 | .649 |
| | Exploration innovation | 7 | .685 |

**Source:** Researcher (2019)

Reliability was assessed using the Cronbach Alpha coefficient so as to evaluate the internal consistency of the research tool items (Yadav, 2016) and those items that were found to have an alpha coefficient of .6 and above were accepted (Fraenkel & Wallen, 2000); an α between .80 & .95 are considered to have very good reliability because it implies very minimal error hence the results are replicable (Zikmund *et al.,* 2013) although coefficients of .62 are acceptable in social science research though caution must be taken against very high alpha coefficients of .9 as these pose a threat of multicollinearity (Hair *et al.*, 2010).

The reliability analysis scale can be accepted if the Cronbach Alpha coefficient is between .6 and 1.0, where on the scale range of .8 to <9 is very good and reliability score .9 is excellent (Hair *et al.,* 2003). Non-response rate was reduced by allowing flexible timeframe within which the respondents were given and was factored in the process thereby avoiding rushed data collection period. Reminders were made through physical callbacks by the research assistants and also physical collection of those duly-filled questionnaires. Pretest tool showed that the data collection tool was reliable enough because alpha coefficients range was from .649 to .914 for exploitation innovation and laissez-faire style respectively.

### 3.9.3 Validity of the research instrument

This is the soundness of the inferences based on the scores to show whether the scores measure what they are supposed to measure or not measure what they are not supposed to measure (Zikmund *et al*., 2013; Tomson, 2003 in Kline, 2005). The main purpose of conducting validity test is that the instrument (questionnaire) should essentially measure the concept in question and secondly, that it should do so accurately. Validity test was undertaken to ensure precision or correctness of the research findings (Lewis & Ritchie, 2003; Winter, 2000) and for purposes of generalizability.

This study addressed face validity, content validity, criterion validity, and construct validity. Face validity was measured by inspecting the concepts studied for their appropriateness to logically appear to reflect what it was intended to be measured through discussions with subject area experts and professionals in the Department of Management Science, Moi University. Two supervisors gave their intelligent judgment on the adequacy of the instrument and evaluated the relevance of each item in the instrument to the research questions and objectives. Pilot study was done in

Uasin Gishu County for initial assessment so as to check on face validity (Golafshani, 2003) to ensure that the questionnaire is free from ambiguity (Somekh & Lewin, 2005) hence bring out theoretical relatedness on construct validity. Rating scale was used by the researcher so as to determine the rate of opinions of the professionals for content validity of the research instrument which was calculated using the equation:-

$$CVI = \frac{Total\ number\ of\ valid\ questions\ in\ the\ instrument\ (N)\ x\ 100\%}{\text{Total number of questions in the instrument (n)}}$$

Where "n" is the number of items rated by all the supervisors while "N" is the total number of items in the questionnaire. The respondents were asked to comment on the appropriateness, ease of understanding and suitability of each item by looking out for issues like wording, reverse, overloading, or leading questions and prejudice (Zikmund *et al.,* 2013). The study findings had a CVI of more than 70% hence appropriate for further inspection.

Content validity confirms the validity of the measuring instruments and so as to ascertain the content validity of the instrument, all the items were sourced from extant literature by other researchers through review of previous literature and past empirical studies from where the constructs were adapted and adopted. Reasonable conclusion was made through comprehensive analysis of the literature; prior discussion with others or panel evaluation to ensure validity content (Saunders *et al.,* 2012). In order to establish content validity, the variables under study that is dynamic capabilities, organizational ambidexterity, leadership style and competitive advantage were identified from past literature.

Construct validity is the degree to which the scales measure what they intend to measure (Garver & Mentzer, 1999; Toh Tsu; Wei *et al*., 2009) that is the consistency of the measures and their relationship with other constructs (DeRue *et al.,* 2012;

Arrindell *et al*., 2005; Cavanaugh *et al.,* 2000) and this was tested using factor analysis. Construct validity which demonstrates the extent to which the constructs hypothetically relate to one another to measure a concept based on the theories underlying the research (Zikmund *et al.,* 2013) was measured by a thorough review of the theories that underlie the major variables of the study. Further to achieving construct validity, convergent and discriminant validity were established by looking at the correlation matrix and the inter-construct correlation where validity is indicated by predictable low correlations between the measures of interest and other measures not measuring the same variable.

Criterion validity was undertaken so as to establish the extent to which the instrument measured predictability of the dependent variable by other variables and this was established by generalizing the findings to the population of the manufacturing firms in which the sample was drawn from. Convergent validity exists when concepts that should be related to one another are actually related while discriminant validity is when a measure or scale is unique and not just a reflection of other variables (Hair *et al.,* 2013).

Nomological validity examined the similarity in the pattern of relationships between measures chosen to represent underlying constructs and other measures based on their signs and magnitudes. The empirical aspects were used to in making judgments based on the correlation coefficient. External validity which means the extent to which findings of a study are generalizable to individual contexts and situations was done by generalizing the findings from the study population across all manufacturing firms in Kenya.

### 3.10 Data Processing and Analysis

The collected data from the field was entered into SPSS, cleaned, inspected for preliminary assumptions that are prerequisites for certain type of analyses and then subjected to statistical analysis using descriptive statistics and inferential statistics. Analysis of the data was guided by the research objectives and hypothesis of the study.

#### 3.10.1 Data Processing

Inspection and editing of data for completeness, coding of data which involved assigning numerical symbols for quick data entry and to minimize errors and to facilitate further analysis was done. Each item in the questionnaire was coded and entered into SPSS software. Checking and cleaning of data which involved checking for inconsistencies, and missing responses to ensure accuracy and completeness was also done because presence of non-random missing data in the analysis seriously affects generalization of results while those that are random in nature are less serious as they may be replaced. Accuracy for this scenario was maintained during data coding and entry.

Data of a random nature was replaced with mean of data set as explained by Tabachnick & Fidell (2007). Data was also processed by checking on outliers because these are extreme values as compared with other observations which distort results hence limiting generalizations. In order to minimize outliers, the study ensured correctness and accuracy in data entry. Mahalanobis $D^2$ measure was used to identify and deal with multivariate and also univariate outliers (Tabachnick and Fidell 2013). This included checking for missing data and treating it and running necessary tests for factor analysis.

### 3.10.2 Missing Data Detection and Treatment

This involved initial proof reading of the original data against data entered in the computer and by examining the preliminary data output that is the descriptive statistics such as mean and standard deviations for accuracy. Data was also examined for correlations to examine their patterns so as to determine whether there were extremely high or low correlations or uncorrelated items. Data was also screened for regression assumptions and outlier detection because this was an important activity since failure to do so could distort the study findings hence making of wrong conclusions and recommendations.

Possible mistakes in the questionnaire collection is those that have not been filled by the respondent hence missing values which can distort the results of statistical analysis and so need to be addressed (Tabachnick & Fidell 2013). The indication of a missing data is when a respondent fail to answer one or more questions (Hair *et al.*, 2010; Howel, 2007) but steps were taken to prevent the problem of missing data by reducing flaws during the administration of the questionnaire and also by ensuring that every returned questionnaire was checked for completeness before it was received though it was evident that a few respondents who delivered their filled responses later on could not be reached in time to complete the questions that were left unanswered. The other source of missing data is the one that arises from errors made at the data entry stage by execution of preliminary checks like analysis of frequencies.

### 3.11 Protocol of Analysis

Data analysis was carried out using the Statistical Package for Social Sciences (SPSS) where descriptive statistics were shown using means, standard deviation and frequencies for characterization purposes.

#### 3.11.1 Descriptive Analysis

The study used descriptive statistics to describe and compare variables numerically such as frequency distributions, mean and standard deviations and also measured variability to see how spread out the scores of each variable (Samuelson, 2010). Raw data was transformed by the researcher into a form that would be easy to understand (Zikmund *et al.,* 2010) thus provide insights of the characteristics and of the samples. The demographic profile in this study consisted age and size of the firm. The analysis was done using SPSS version 23 which was considered appropriate because it provided several transformations and manipulation of the data set. The descriptive statistics analyzed provided a basis for inferential analysis.

#### 3.11.2 Factor Analysis

It was necessary to conduct factor analysis on all the three dimensions of dynamic capabilities and leadership style using varimax rotation extraction (Welch & Feeney, 2014; Tavakol & Dennick, 2011) so as to identify the latent variables in the data constructs, prepare it for regression analysis (Williams *et al.,* 2010; Idinga, 2015) and to facilitate the description of the variability among observed correlated variables in terms of a potentially lower number of underlying factors (Hair *et al.,* 2013, Field 2000). Factor analysis is a multivariate statistical procedure with the main purpose of reducing large number of variables into smaller set of variables or factors; establishing underlying dimensions between measured variables and latent constructs

thereby allowing the formation and refinement of theory and to also provide construct validity evidence of self-reporting scales (Thomson, 2004).

Validity test was done using Principal Component Analysis (PCA) to extract the factors and all the factor loadings greater than .50 were considered statistically significant for studies with sample size less than 200 (Hair *et al.,* 2010). The higher the factor loadings, the greater they were related to the variable. Varimax rotation ensures that the factors produced are independent and unrelated to each other. The resulting information from factor analysis guided in giving strong understanding of the major factors that influence the changes in a given variable.

Bartlets test of sphericity was used to assess factorability of the data and Kaiser-Meyer-Olkin measure of sampling adequacy where Bartlett test of sphericity should be statically significant at $\rho <$ .05, while KMO index should range from 0 to 1. The threshold for retaining an item as a measure of a given variable was a minimum factor loading of .5, and Eigen value of not less than 1.0 (Osborne 2015; Hair *et al.,* 2013, Field 2009). PCA was chosen as the most convenient method as it revealed the set of factors which accounted for all common and unique variances (Idinga, 2015). The criteria used for describing the results were eigen values, factor loadings where factors with values of not less 1.0 were retained for further analysis hence factors that had a factor loading of not less than .5 were retained for transformation and further analysis.

### 3.11.3 Data Transformation Process

This is transformation of data from likert scale to ratio scale before analysis of inferential statistics by changing data from its original data type to a new format that would make it suitable for further analysis. The data was transformed by getting the

means of the items that loaded to the respective factors hence the means of the various factors derived being used for further analysis. Competitive advantage and organizational ambidexterity were transformed directly because of the least number of items while factor analysis was carried out on independent variables (dynamic capabilities) and on mediator (leadership style) before transformation of the data to allow further analysis. This was done by adding all the items then divided by the number of items (DC = SE + SZ + RC/3) to transform dynamic capabilities then (LS = TR + RC + LZ/3) for leadership style transformation.

### 3.11.4 Correlation Analysis

This was done in order to measure the possibility of any existing linear relationship between the dependent variable and the other variables through determining the magnitude and direction of the possible relationships considering that both variables are at interval level of measurement and the data is parametric in nature. In a correlation analysis, two or more sets of measurements are obtained on the same individual variables or pairs of individual variables matched in the same way. The values of the correlation coefficients vary from a value of +1.00 to a value of -1.00 which represents extremely perfect relationships. When independent variables are highly correlated, it becomes difficult to establish the effect of each independent variable on the dependent variable (Hair *et al.,* 2010).

Pearson Product Moment Correlation was used to test the direction and strength of the relationship between the independent variables (dynamic capabilities) and the dependent variable (competitive advantage) according to Jahangir & Begum, (2008). Correlation is statistically significant at .05 levels if p-values are .05 and are not statistically significant if p-values are more than .05. The correlation strengths were

interpreted using Cohen (1988) decision rules where r values from .1 to .3 is weak correlation; .31 to .5 is moderate correlation and greater than .5 indicate a strong correlation between the variables. Wong & Hiew (2005) further argues that correlation coefficient value (r) ranging from .10 to .29 is considered weak, .30 to .49 medium and .50 to 1.0 strong though Fidel (2005) postulate that the coefficients should not go beyond .8 so as to avoid multicollinearity.

### 3.11.5 Inferential Statistics

The inferential statistics is the procedure of drawing predictions and conclusions about the given data which is subjected to the random variations and it includes detection and prediction of observational and sampling errors so as to make estimates and test the hypotheses using given data. This facilitated identification of important patterns to allow meaningful data analysis realization. Hypotheses testing were conducted using hierarchical and process macro analysis where at each stage of analysis, the $R^2\Delta$ showed the incremental change in variance accounted for in Y with the addition of the predictor. This study used $R^2$, $\Delta R$, F, ANOVA and t-test tools so as to determine whether to reject or not reject the hypothesis.

## 3.12 Model Specification

Multiple regression technique was used to show the amount of variations explained by the independent variables on the dependent variable through the coefficient of determination ($R^2$). Regression analysis main purpose is for analyzing the relationship between one single dependent variable and a group of independent variables (Hair *et al.,* 2010). Linear regression analysis was done in order to determine whether or not a significant relationship exists between the independent variables which for this study

are dynamic capabilities (sensing, seizing and reconfiguration) and dependent variable (competitive advantage).

Regression of the outcome variable competitive advantage with respect to sensing, seizing and reconfiguration capabilities was conducted in order to produce a model for prediction. The coefficient of determination ($R^2$) provided measure of the predictive ability of the model where when the value is close to 1, the better the regression equation fit the data (Hair *et al.,* 2010).

### 3.12.1 Testing for Direct effects

In order to achieve objectives 1a – $1_d$ being direct effects, linear regression models were tested for purposes of $H_o1a$, $H_o1_b$ and $H_o1_c$. and $H_o1_d$ The test statistics that were computed and derived include the coefficients of determination ($R^2$); the ANOVA, the beta coefficient (β) and the *p*-values. The significance level (*p*-value) for each of the variables had to be less than .05 so as to demonstrate variable significance as a predictor of the dependent variable (Hair *et al.,* 2013; Field, 2009). The decision on the tests conducted in respect of the direct effects was depicted by $H_o1_{a,}$ $H_o1_b$, $H_o1c$ and $H_o1_d$ were on the basis of the significant change in F-statistic parameter. The effects both for controls (age and size of the firm) and the direct effects were statistically processed using the specified linear equation (1) to (6) as shown below:

$$Y= \beta_0 + C + \varepsilon \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots \quad (1)$$

$$Y= \beta_0 + C + \beta_1 X + \varepsilon \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots \quad (2)$$

$$Y= \beta_0 + C + \beta_1 X_a + \varepsilon \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots \quad (3)$$

$$Y= \beta_0 + C + \beta_1 X_a + \beta_2 X_b + \varepsilon \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots \quad (4)$$

$$Y= \beta_0 + C + \beta_1 X_a + \beta_2 X_b + \beta_3 X_c + \varepsilon_1 \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots \quad (5)$$

$$Y= \beta_0 + C + \beta_1 X_a + \beta_2 X_b + \beta_3 X_c + \beta_3 X_d + \varepsilon_1 \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots \quad (6)$$

Where:

Y: dependent variable (competitive advantage)

C: control variables (age and size of the firm)

$\beta_{0:}$ constant

$X1_a$ sensing capabilities

$X1_{b:}$ seizing capabilities

$X1_{c:}$ reconfiguration capabilities

$X1_d$ Dynamic capabilities

$\beta_1$- $\beta 1_d$: The effect of slope coefficients denoting the effect of the associated IVs on DV coefficient of regression

$\varepsilon$: Error terms

### 3.12.2 Testing for Mediation Effect

The test for mediation for this study was meant to explain the mediating effect of leadership style on the relationship between dynamic capabilities and competitive advantage. This explains how or by what means an independent variable (X) affects the dependent variable (Y) through potential intervening variable (Preacher & Hayes 2008). Hayes (2017) and Preacher *et al.*, (2007) postulate that mediation is said to occur when the causal effect of an independent variable (X) on a dependent variable (Y) is transmitted by a mediator.

Hayes (2015) model 4 was used to test the mediating effect of leadership styles (transformational, transactional and laissez-faire) on the relationship between dynamic capabilities and competitive advantage. Baron and Kenny (1986) later harnessed by Hayes (2012) was adopted for testing the mediation effect of leadership style on the relationship between dynamic capabilities and competitive advantage in

order to address hypothesis $H_{o2}$-$H_{04}$. The following steps by Mackinon (2012) were followed:

Step 1: The predictor variable (dynamic capabilities) had to significantly predict the outcome variable (competitive advantage) using simple regression analysis so as to test for path c alone.

Step 2: The predictor variable had to significantly predict the mediator (leadership style) on dynamic capabilities using simple regression analysis to test for path a.

Step 3: The mediator variable had to significantly predict the outcome variable in the presence of leadership style and for the decision criterion through simple regression analysis to test the significance of path b alone.

Step 4: Multiple regression analysis with X (Dynamic capabilities) and Me (leadership style) predicting Y (competitive advantage) was conducted with the intention of testing the mediation effect that the independent variable had to predict the dependent variable less strongly in model III than in model I. If one or more of these relationships in models I to III are not significant, researchers usually conclude that mediation is not possible or likely though this is not always true (MacKinnon, 2007).

Zhao *et al.,* (2010) recommend that Baron & Kenny's (1986) three tests plus Sobel steps be replaced by one and only one test so as to establish mediation that is the indirect effect bootstrap test *a x b* is significant by generating bootstrap. He further said that mediation should be classified by type of mediation by estimating *a, b* and *c* coefficients and ensuring that path c is important for direct effect to know the kind of mediation you have or not. If *a x b* is significant and *c* is not, then you have indirect

mediation (Baron & Kenny, 1986) which is full mediation but if *a x b* is not significant but *c* is, then it is direct non-mediation. If neither *a x b or c* is significant, then you have non-effect mediation but if both *a x b* and *c* are significant, then determine the sign of *a x b x c* by multiplying the three coefficients or by multiplying c by the mean value of *a x b* from the bootstrap output. If *a x b x c* is positive then it is complementary mediation which overlaps with Baron and Kenny's partial mediation but it *a x b x c* is negative then it is competitive mediation. The test involved running a series of regression model conditions as shown below and in Figure 3.1:

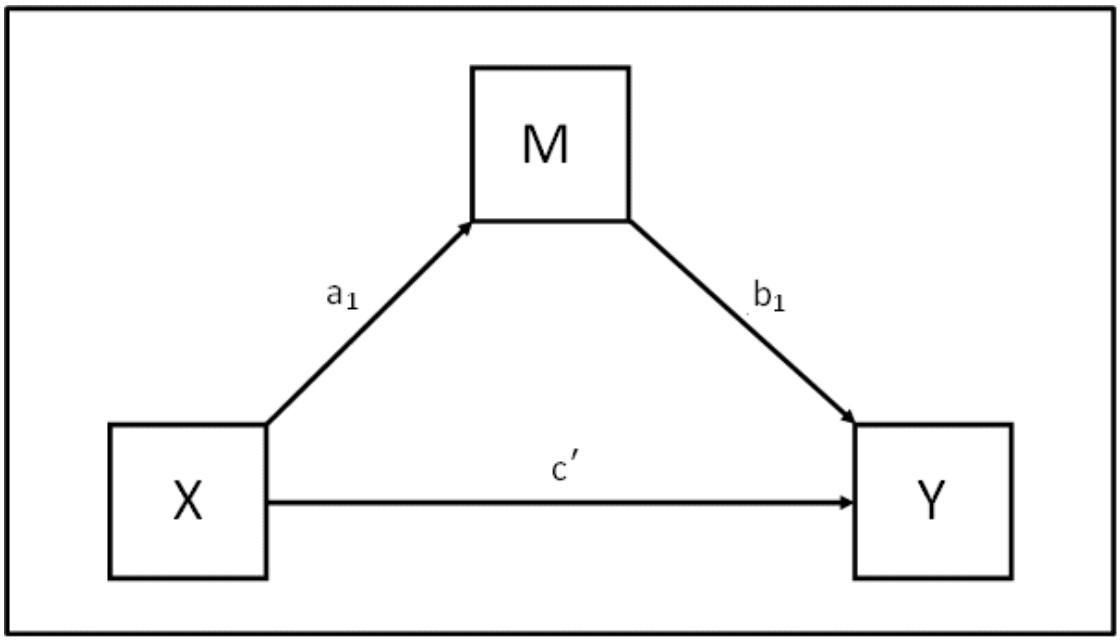



**Figure 3.1: Testing of mediation effect**
**Source:** Hayes, (2017)

Full mediation exists when the independent variable exerts its total effect through the mediating variable while partial mediation is given if the independent variable exerts some of its influence on the dependent variable through the mediating variable, and it also exerts some of its influence directly on the dependent variable and not through mediating variable. Full mediation occurs when the inclusion of the mediator

(leadership style) in model 4, drops the relationship between the independent variable (dynamic capabilities) and the dependent variable (competitive advantage) is zero.

Process macro by Hayes (2017) was adopted for this study so as to generate the output for interpretation of the results of mediation. Bootstrapping was done through repeated and random sampling observation with replacement from the data set so as to compute the desired statistic for each resample hence providing point estimates and confidence intervals by which evaluation of the possible significance of the mediation was based. The point estimates showed the mean over the number of bootstrapped samples and where zero did not fall between the resulting confidence interval of bootstrapping method, then the researcher reported that there was significant mediation effect of leadership style on the relationship between dynamic capabilities and competitive advantage.

The equation is as shown below:

$$M = a_0 + C + a_1X + \varepsilon \quad \text{(i)}$$

$$Y = b_0 + C + b_1M + \varepsilon \quad \text{(ii)}$$

$$Y = C_0 + C + b_1M + CX + \varepsilon \quad \text{(iii)}$$

$$Y = a_1 \text{ x } b_1 \text{ or } C - C'$$

$$Y = (a_1 \text{ x } b_1) + C'$$

### 3.12.3 Testing for Moderation Effect

This study assessed whether organizational ambidexterity had a moderating effect on the relationship between dynamic capabilities and competitive advantage (Figure 3.2) because a moderator is a variable that specifies conditions under which a given predictor is related to an outcome. Moderation occurs when the strength or direction of independent variable have effect on dependent variable varies as a function of the

values of another variable (Hayes 2017). This showed if DV and IV are related implying that an interaction effect is seen when the moderating variable changes the direction or magnitude of the relationship between the two variables.

Moderation effect can be enhancing that is if the moderator increases the effect of the predictor (IV) on the outcome (DV) or buffering if it decreases the effect of the predictor on the outcome or antagonistic if it reverses the effect of the predictor on the outcome (Hayes, 2016). MacKinnon, (2008) and Hayes, (2013) posits that moderation variables influences the strength and/or direction of the relation between a mediator and an outcome by enhancing, reducing, or changing the influence of the mediator.

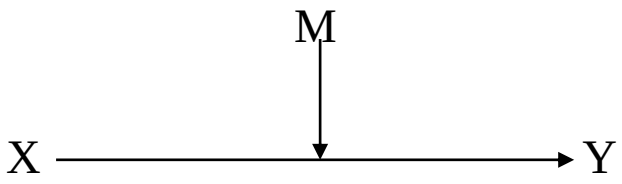



**Figure 3.2: Moderation Effect**
**Source:** Hayes (2013)

The values of independent and the moderator were mean-centered by standardizing the values into Z-scores (Cohen *et al.,* 2003) to avoid high multicollinearity with the interaction term (Cohen *et al.,* 2003) then the interaction terms were calculated. The variables were then entered in a series of blocks so as to enable the researcher to see if each new group of variables adds anything to the prediction by the previous blocks of variables (Cohen *et al*., 2003). Hierarchical multiple regression analysis was used to assess the moderating effect of organizational ambidexterity on the relationship between dynamic capabilities and competitive hence provide evidence on whether to reject or not reject $H_0$5.

Moderation was confirmed with the interaction term being significant and supported when the addition of the interaction term provided a significant increment in variance ($R^2$) associated with the independent capabilities on the dependent variable beyond the variance accounted for by the main effects (Cohen *et al.,* 2003). Testing for moderation effect was done using Hayes model 4 which tested whether the moderation of a dependent variable Y (Competitive Advantage), from an independent variable X (Dynamic Capabilities), differs across levels of a Moderation variable Mo (organizational ambidexterity).

A single regression equation forms the basic moderation model according to model 7 of Hayes (2017):

$M = a_0 + C + a_1X + a_2W + a_3 \times W + \varepsilon$ …….. ($H_{05}$)

Where:

M: Moderator (organizational ambidexterity)

$a_{1:}$ sensing capabilities

$a_{2:}$ seizing capabilities

$a_3$: reconfiguration capabilities

ε: represents the error term that is variation due to other unmeasured factors.

### 3.12.4 Testing for Moderated-Mediation Effect

The process of testing moderated mediated was informed by the work of Hayes (2017; 2015; 2013), Preacher *et al.,* (2007), Preacher and Hayes (2008), Baron and Kenny (1986) through building on the traditional work of James and Brett (1984). The choice of testing moderated mediation and not mediated moderation is in view of Preacher *et al.,* (2012) who aver that the former is more applicable than the later although they can be interchangeably referred to.

Hayes (2017) posit that a more practical model should address both the 'how' and 'when' questions thus this study adopted Model 7 so as to examine the conditioned indirect effect of the independent variable (dynamic capabilities) on the dependent variable (competitive advantage). This study therefore interpreted moderated mediation as the effect of dynamic capabilities exerts on dynamic capabilities conditioned by organizational ambidexterity.

When testing for moderated mediation, it is advisable that mediation exists between the IV and DV thus moderation was conducted after confirmation that leadership style mediates the relationship between organizational ambidexterity and competitive advantage (Preacher *et al.,* 2007 and Hayes 2012). Moderated mediation was tested using Process Macro for the decision on $H_{o6}$ on the significance or insignificance of the moderator effect (organizational ambidexterity) on the mediator (leadership style) and the effect of the interaction on the mediator subject to 95% bootstrap confidence interval. The default criteria for accepting or rejecting moderated mediation hypothesis using Process Macro is the 95% confidence interval where the confidence interval of .05 includes zero then a decision of no relationship had to be arrived and the null hypothesis rejected (Hayes, 2015).

Figure 3.3 in line with Hayes (2012) aided formation of two equations for testing moderated mediation where equation 1 tested the existence of mediation in the presence of a moderator and equation 2 tested the existence of the moderated mediation showing that the conditional effect of X on M is derived as $(a_1 + a_3W)$ for equation 1 and the effect of M on Y is $b_1$ and by extension the conditional indirect effect of X on Y is $(a_1 + a_3W)*b_1$ represented as below:

$M = M_i + a_1X + a_2W + a_3XW + r_m$ …….. (11)

$Y = Y_i + C'X + b_1M + r_y$ ……. (12)

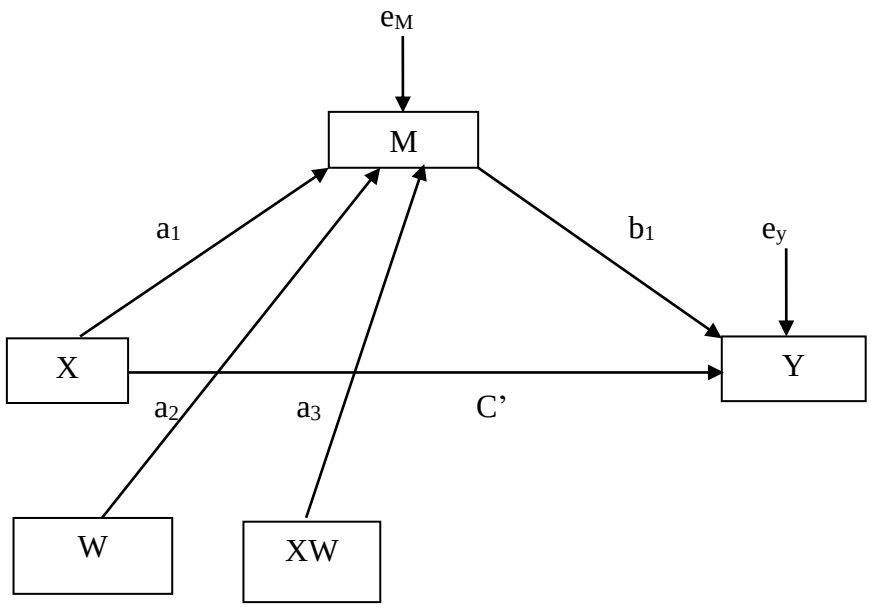



**Figure 3.3: Statistical Model**

**Source:** Hayes (2012)

Where:

X: Represent the independent variable (dynamic capabilities).

Y: Represent the dependent variable (competitive advantage).

W: Represent the moderator variable (organizational ambidexterity).

XW: Represent the outcome of the interaction of the independent variable (dynamic capabilities) and the moderator variable (organizational ambidexterity).

M: Represent the mediator variable (leadership style).

$a_1$: Represent the independent variable effect (dynamic capabilities) on the mediator.

$a_2$: Represent the effect of the moderator variable (organizational ambidexterity on the mediator (leadership style).

$a_3$: Represent the interaction effect of the independent variable (dynamic capabilities) and the moderator variable (organizational ambidexterity) on the mediator variable (leadership style)

$b_1$: Represent the mediator variable effect (leadership style) on the dependent variable (competitive advantage)

C: Represent the independent variable effect (dynamic capabilities) on the dependent variable (competitive advantage)

$\varepsilon_m$ & $\varepsilon_y$: Represent the respective error terms in each of the equations

The research hypothesis for moderated mediation was to determine the effect that the strength of the indirect effect of dynamic capabilities on competitive advantage through organizational ambidexterity changes as a result of leadership style.

### 3.13 Test of Multiple Regression Assumptions

The researcher checked the underlying assumptions of multiple regression analysis which included normality, linearity, homoscedasticity and multicollinearity (Hair, Jr. *et al*., 2003). This test was done to ensure that least square measures are unbiased, to establish whether there was an association between the variables of interest that is two sets of measurements are obtained on the same individual variables or pairs of individual variables matched in the same way and that Type I and Type II errors are avoided (Pallant, 2005). These are explained further below:

#### 3.13.1 Test of Normality

This was examined at univariate level (distribution of scores at an item-level) and at multivariate level (distribution of scores within a combination of two or more than two items) so as to assess whether the data sets are normally distributed (Saunders *et al.*, 2007) holding that the distribution of the test is bell-shaped with 0 (zero) mean and with 1 (one) standard deviation hence producing a symmetric bell-shaped curved. This assumption was critical when constructing reference intervals and when this assumption does not hold then it is impossible to draw accurate and reliable conclusions about reality (Ghasemi & Zahediasl, 2012). If this assumption is violated, then interpretation and inference may not be valid or reliable (Razalli & Wah, 2011). The study used bootstrapping to check for normality in the data distribution.

The prediction of values of Y (the dependent variables) is distributed in a way that approaches the normal curve and in order to identify the shape of the distribution in

the study, Shapiro Wilks Tests were used (Shapiro and Wilk, 1965) which were calculated for each variable because the sample was over 50 cases (Shapiro- Wilk, 1965) although SSPS gives the two default measures (K-S and S-W). Normality could be detected by looking at the *p*-value of Shapiro Wilk-test which in this case the *p*-value (sig.value) of the Shapiro-Wilk Test is greater than .05 thus confirming that the data is normal. Lilliefors significance correction which is used to test that data comes from a normally distributed population was applied.

### 3.13.2 Test of Linearity

Pearson's product moments correlation was used to test linearity and association between the variables of study (sensing, seizing and reconfiguration capabilities). All the variables were linear showing that the relationship between dependent and independent variables existed. When independent variables are highly correlated, then it is not easy to establish the effect of each independent variable on the dependent variable (Hair *et al*., 2010) hence the direction and strength of the relationship between the independent variables (sensing, seizing and reconfiguration capabilities) was tested. The decision criteria is that the null hypothesis is rejected at αx100% level of significance when the computed value and the critical value is lower than – α/2 or larger that tα/2. Rejecting a null hypothesis means there is a significant linear relationship between the variables (Kothari & Garg, 2014).

### 3.13.3 Independence of Errors

This was obtained using Durbin-Watson statistic where the assumption of independence of errors is given by D-W was estimated using Cronbach's alpha of .7 to .9. D-W value between 1 and 3 is usually considered to be accepted (Kothari & Garg, 2014) and for this case the dependent variable's variance was equal across a

range of independent variables. Serial correlation was tested using Durbin Watson test. Non independence affects the accuracy of the estimation of the standard error of regression coefficients as the OLS standard error estimator assumes independence of errors in estimation. It the standard error is underestimated then hypothesis test will be invalid and confidence intervals too narrow relative to what they should be when the independence assumption is met.

### 3.13.4 Homoscedasticity (constant of variance) of the errors

Variance of errors should be the same across all levels of independent variables (Tabachnick & Fidel, 2001) but when variance of errors differs at different values of the independent variables, heteroscedasticity is indicated. The inverse of heteroscedasticity is homoscedasticity which indicates that dependent variables' variability is equal across values of independent variable (Schutzenmeister *et al.*, 2012). Heteroscedasticity was eliminated or minimized by ensuring that the data used in hypothesis testing is approximately normal and is accurately transformed (Tabachnick and Fidell, 1996). At each level of the predictor variable, the variance of the residual terms should be constant but if the data is found to be heteroscedastic then it has to be subjected to transformation. This was ensured through Levene statistic where the decision criteria is that the Levene test statistic values should have a level of significance of above 5% ($p$-value >.05) as proof that the data is homoscedastic rather than heteroscedastic. Homoscedasticity was tested using a scatter plot and partial regression plots for the individual independent variables (Pallant, 2010) and this is indicated when the residuals are not evenly scattered around the line that is they should lie between -2 and/or +2 points (Osborne & Waters 2002).

### 3.13.5 Multicollinearity

Multicollinearity was tested using tolerance and variance inflation factor (VIF) where the rule of thumb is that VIF>4.0 and tolerance <.20 indicates multicollinearity problem in analysis. VIF is a reciprocal of the tolerance where VIF >10 was indicative of multicollinearity (Stevens, 2002) but in cases where the condition index is used rather than the VIF the criteria is to measure how dependent one independent is on another. Hair *et al.,* (2006) posits that examining the residual scatter plots is the most common way to identify any non-linear patterns in the data with an intention of detecting the inter-correlations among pairs of independent variables and hence determine the likelihood of multicollinearity.

The variance proportions associated with each variable are observed and multicollinearity is present if the condition index is equal or greater than 30 and at atleast two variance proportions for a particular independent variable greater than 50. Multicollinearity is said to occur if there exist high inter-correlations between independent variables (Tabachnick & Fidell, 2007). Multicollinearity makes determining the effects of a given predictor for example sensing capability difficult since the effects of the predictors get comfounded as a result of the high correlations amongst themselves. This was dealt with by first establishing the inter-correlation between the independent variables and those bivariate correlations of .9 and higher was seen as good candidates for deletion (Tabachnick & Fidell, 2001, Stevens, 2002). Presence of multicollinearity makes the assessment and hypothesis testing on regression coefficients unknown thus frustrates interpretation of the model coefficients (Gujarati & Porter, 2003) thus giving incorrect regression results (Palaniappan, 2017).

### 3.14 Summary of Hypotheses Testing

Hypotheses were tested using Multiple Regression analysis because it allows for the slope of one or more of the independent variables to vary across mediator and moderator variable values hence enabling investigation of a wide range of relationships (Goode & Harris, 2007). The decisions on the tests conducted in respect of the direct effects depicted by $H_{o1}$ to $H_{o5}$ were on the basis of the significant change in F-statistic parameter, beta values, $F\Delta$ and $R^2$ but for $Ho_6$ the decision on the test was based on confidence interval.

The significance level p-value for each of the variables had to be less than .05 to demonstrate if the variable was a significant predictor of the dependent variable (Hair *et al.*, 2013; Field, 2009). A low value of alpha .05 was used for the study so as to minimize Type I error probability. The less than .05 level (>.95) hence providing a 5% level of confidence in the results meaning less than 5% chance or randomness of the results. When the confidence level $p<.05$ then the study rejected the hypothesis and when $p>.05$ the null hypothesis was not rejected. The test statistics that guided this study is shown in Table 3.8:

**Table 3.8: Summary of Hypotheses Testing**

| $H_0$ | Statement | Test Statistics | Critical Values/ Decision Point | Interpretation/ Remarks |
|---|---|---|---|---|
| $Ho_{1a}$ | Sensing capability has no significant effect on competitive advantage | β, *p-value*, F, and $\Delta R^2$ | $P \leq .05$ | Reject $H_0$ or fail to reject |
| $H_{o1b}$ | Seizing capability has no significant effect on competitive advantage | β, *p-value*, F, and $\Delta R^2$ | $P \leq .05$ | Reject $H_0$ or fail to reject |
| $H_{o1c}$ | Reconfiguration capability has no significant effect on competitive advantage | β, *p-value*, F, and $\Delta R^2$ | $P \leq .05$ | Reject $H_0$ or fail to reject |
| $H_{o2a}$ | Transformational leadership style has no mediating effect on the relationship between sensing capabilities and competitive advantage | β, *p-value*, F, $\Delta R^2$ and CI | CI | Reject $H_0$ or fail to reject |
| $H_{o2b}$ | Transformational leadership style has no mediating effect on the relationship between seizing capabilities and competitive advantage | β, *p-value*, F, $\Delta R^2$ and CI | CI | Reject $H_0$ or fail to reject |
| $H_{o2c}$ | Transformational leadership style has no mediating effect on the relationship between reconfiguration capabilities and competitive advantage | β, *p-value*, F, $\Delta R^2$ and CI | CI | Reject $H_0$ or fail to reject |
| $H_{o3a}$ | Transactional leadership style has no mediating effect on the relationship between sensing capabilities and competitive advantage | β, *p-value*, F, $\Delta R^2$ and CI | CI | Reject $H_0$ or fail to reject |
| $H_{o3b}$ | Transactional leadership style has no mediating effect on the relationship between seizing capabilities and competitive advantage | β, *p-value*, F, $\Delta R^2$ and CI | CI | Reject $H_0$ or fail to reject |
| $H_{o3c}$ | Transactional leadership style has no mediating effect on the relationship between reconfiguration capabilities and competitive advantage | β, *p-value*, F, $\Delta R^2$ and CI | CI | Reject $H_0$ or fail to reject |
| $H_{o4a}$ | Laissez-faire leadership style has no mediating effect on the relationship between sensing capabilities and competitive advantage | β, *p-value*, F, $\Delta R^2$ and CI | CI | Reject $H_0$ or fail to reject |
| $H_{o4b}$ | Laissez-faire leadership style has no mediating effect on the relationship between seizing capabilities and competitive advantage | β, *p-value*, F, $\Delta R^2$ and CI | CI | Reject $H_0$ or fail to reject |
| $Ho_{4c}$ | Laissez-faire leadership style has no mediating effect on the relationship between reconfiguration capabilities and competitive advantage | β, *p-value*, F, $\Delta R^2$ and CI | CI | Reject $H_0$ or fail to reject |
| $H_{o5}$ | Organizational ambidexterity has no moderating effect on the relationship between dynamic capabilities and competitive advantage | β, *p-value*, F, $\Delta R^2$ and CI | $P \leq .05$ | Reject $H_0$ or fail to reject |
| $H_{o6}$ | Organizational ambidexterity and leadership style has no significant moderated mediation on the relationship between dynamic capabilities and competitive advantage | *p*-value and , CI | CI | Reject $H_0$ or fail to reject |

**Source:** Researcher (2019)

### 3.15 Ethical Considerations

There are two aspects relating to ethics in research: researcher's individual values relating to honesty, frankness and personal integrity and secondly the researcher's treatment of other research subjects which are consent, anonymity, confidentiality and courtesy (Walliman, 2017). These are the principles that the researcher should abide with while conducting research (Macmillan & Schumacher, 1993).

The researcher considered seeking approvals, enabling voluntary participation of the respondents, ensuring safety of the participants, guaranteeing of anonymity, confidentiality in responses, avoiding deception, and analysing and reporting of the findings. Initial approval was sought from Moi University as well as chosen institution by seeking approval to conduct the study from the National Commission for Science, Technology and Innovation (Nacosti) and Ministry of Education, Science and Technology (Appendix IV) hence avoid suspicion or resistance from the respondents. The approval letter was submitted to manufacturing firms accompanied with an introductory letter from Moi University, a copy of questionnaire and cover page explaining the importance of the study and expected findings.

Informed consent of each participant was sought by the researcher before their participation by clarifying that respondents' participation in the study was voluntary hence consent obtained from each respondent before engaging him/her (Hammersley & Traianou, 2012). The privacy of the participant was assured by not identifying the individual responses and keeping the questionnaires and data under lock and key accessed by the researcher though supervisors confirmed them after collection. Informants were anonymized in the study to ensure their privacy (Hurdley, 2010). Respondents' right to privacy and confidentiality of information provided was upheld

while respecting autonomy, avoiding harm and deception and treating all respondents equitably. The research assistants were well trained upfront on data collection procedure, how to show respect to respondents and upholding courtesy at all times during research exercise.

There was no harm to the respondents because the study was not practical in nature thus principle of participation in a voluntary manner put in place because respondents ought not be coerced into taking part in the research but were informed about the objectives of the research, what is expected of them and their consent sought (Saunder *et al.,* 2014). The questionnaires were administered at the respondents' workplace with anticipation that there was no influence or interference from other people during the administration of the questionnaires. For follow up purposes, the email of the researcher was also provided to the respondents so that follow up communication between the researcher and the respondent could be maintained.

Research should aim at collecting information from the study subjects without in any way revealing their identity, contacts or any personal information (Tamariz *et al.,* 2013). In reporting the findings, the researcher was careful to accurately represent what actually was reported by the respondents without disclosing their identity. To avoid deception, the researcher identified herself to the respondents by sharing contact details in case of any queries or further consultation.

### 3.16 Limitations of the Study

The instrument adopted was primarily designed for studies in different geographical locations with different contextual factors which could render them less appropriate for this particular study. However, less biased results were obtained through analyzing the reliability and validity of the questionnaire to the specific study sample which for

this case was manufacturing firms in Eldoret town. Steps were ensured that the final tool managed to follow and source reliable and valid results.

Secondly, it was manifest that some respondents to whom the questionnaires were administered to were very busy and could not fill the questionnaires within the first, second or third time of the visit leading to more visits, time and cost implication to the researcher and research assistants because the ultimate goal was to ensure that the questionnaires were duly filled and returned.

Common method variance is a concern in a case where studies of same subject complete all the instruments and these may be more of a problem with a single-item or poorly designed scales and less of a problem when well-designed multi-item validated scales are used (Spector 1992a; 1992b). The researcher used two managers per firm that is production and marketing so as to mitigate the problem of biasness. It is possible that the respondents in the study might have falsified their responses or might not always be truthful in their answers to a survey or might have deliberately withheld some vital information due to bureaucracy and secrecy upheld in many manufacturing firms (Yetton & Sharma 2001).

This research concentrated on companies located at Nairobi, Kenya accounting to 80% of the total firms in the country (KAM, 2018) though smaller companies which are registered with Kenya National Bureau of Statistics (KNBS) could provide important findings that would have been useful in the industry thus further research by other scholars can be carried out in future.

# CHAPTER FOUR

# DATA ANALYSIS, PRESENTATION, AND DISCUSSION OF FINDINGS

## 4.0 Introduction

This chapter provides a presentation of data analysis and interpretation of the results obtained by use of SPSS software version 23. It covers the study response rate, data cleaning and screening procedure, demographic profile of the firm, descriptive statistics of the study variables, validity and reliability of the questionnaire, factor analysis, correlation analysis, test of assumption of multiple regression analysis and discussion of the test of hypothesis and of the hypothesis testing results. It also provides findings on the moderated mediation of organizational ambidexterity and leadership style on the relationship between dynamic capabilities and competitive advantage of manufacturing firms in Nairobi, Kenya.

## 4.1 Response Rate

Three hundred and eighty five (385) firms were selected for the study having two managers per firm as the respondents hence the total number of questionnaires administered as 770 firms. Results showed that 321 (83.25%) firms were found to be useful for further analysis and the remaining 64 firms (16.25%) did not respond even after several visits and telephone calls (Table 4.1). The high response rate facilitated gathering of sufficient data that could be generalized in determining the relationship between dynamic capabilities and competitive advantage of manufacturing firms in Nairobi, Kenya.

**Table 4.1: Response Rate of Firms**

| Responses | Questionnaires | Percentage | No. of firms Represented | % |
|---|---|---|---|---|
| Administered questionnaires | 770 | 100 | 385 | 100 |
| Returned questionnaires | 641 | 83.25 | 321 | 83.25 |
| Unreturned questionnaires | 129 | 16.25 | 64 | 16.25 |
| Used questionnaires | 641 | 83.25 | 321 | 83.25 |

**Source:** Researcher (2019)

A response rate of 83.25% was achieved which was above the generally recommended threshold of between 50% and 60% according to Babbie & Benaquisto, 2009; Oso & Onen, 2005).

### 4.2 Data Coding, Screening and Cleaning

It is recommended that survey data be screened for a number of potential problems in relation to missing data hence helps in checking for and addressing errors that could have arisen as data was being entered into the software (Barnett & Lewis, 1994; Tabachnick & Fidell, 2013) and also ensure that the data subjected for further statistical investigations is free from error thus provide useful inference. The researcher received completed questionnaires and prepared them for further screening by numbering them so that each and every questionnaire was accounted for.

#### 4.2.1 Missing Values Analysis

This was evaluated with respect to cases and their distribution is shown in Table 4.2 where most cases had non-missing (95.6%) values and 5 cases (4.4%) had missing values hence no significant effect on further analysis of the data. Studies have shown that missing values are a common occurrence in social research (Hayes, 2012) and can seriously affect results of statistical analysis (Fichman, 2005)

**Table 4.2: Distribution of the number of missing values on cases**

| Number of missing values | Number of cases | Percentage |
|---|---|---|
| 0 | 316 | 98.44% |
| 1 | 5 | 1.56% |
| **Total** | **321** | **100%** |

**Source*:*** Researcher (2019)

90 variables did not have missing values while 3 had only minimal missing values that is 2 variables had three missing values and one variable had two missing values. These were deemed useable and missing data were replaced with hot deck/cold deck replacement method before further analysis was conducted (Tabachnick and Fidell, 2013).

### 4.2.2 Detection and Treatment of Outliers

Study variables were screened for presence of item outliers knowing that extreme values of the variable items compared to the rest of the data, outliers could have rendered data non-normal considering that normality was one of the study assumptions (Jose, 2013). Checking for outliers is an important step before analysis because skipping initial examination of outliers can distort statistical tests and if there happens to be problematic outliers (Hair *et al.,* 2010) then it will distort the statistics and may lead to results that do not generalize to the sample (Tabachnick and Fidell, 2013).

Table 4.3 showed that 88 variables did not have missing values (94.6%) while item 1 and two had 2.2% and 3.2% respectively leading to removal of the two missing values in order to remove the outliers which may affect data analysis and inferences of the results to a population (Tabachnick & Fidell, 2007).

**Table 4.3: Distribution of the number of missing values by variables**

| Number of missing values | Number of cases | Percentage |
|---|---|---|
| 0 | 88 | 94.6 |
| 1 | 2 | 2.2 |
| 2 | 3 | 3.2 |
| **Total** | **93** | **100%** |

**Source:** Researcher (2019)

This study used Mahalanobis $d^2$ measure to identify and deal with multivariate outliers because treating multivariate outliers would take care of univariate outliers (Tabachnick and Fidell 2013) though treating univariate outliers would not necessarily take care of multivariate outliers (Hair *et al.,* 2010). All the dimensions of the variables were subjected to a multivariate outlier screening using standardized residuals with Mahalanobis distance test ($d^2$) of $\alpha$=.001 and the results showed that there were outliers that needed to be corrected.

Mahanabolis distance ($d^2$) is the distance of a case from the centroid of the remaining cases where the centroid is the point created at the intersection of the means of all the variables (Tabachnick & Fidell 2007). Mahalanobis $D^2$ were calculated using linear regression method in SPSS, followed by the computation of the Chi-square value. Given that 4 items were used, 3 represent the degree of freedom in the Chi-square table with $p<.001$ (Tabachnick & Fidell, 2013).

**Table 4.4: Mahalanobis Distance**

| Mahalanobis Distance | Criteria | Statistic | Std. Error |
|---|---|---|---|
| Mahal. Distance | Mean | 15.6 | .13 |
| | Variance | 5.24 | |
| | Std. deviation | 2.29 | |
| | Minimum | 0.72 | |
| | Maximum | 15.60 | |
| | Skewness | 2.25 | .14 |
| | Kurtosis | 7.44 | .27 |
| **Total** | **93** | | **100%** |

a. Dependent Variable: Competitive Advantage

**Source:** Researcher (2019)

The results in Table 4.4 showed the mean is 15.60 with a normal curve of 2.25 to the left and kurtosis of 7.44 with the variance of 5.25 and standard deviation of 2.29. Any case with a probability Mahalanobis $D^2$ value of less than .001 is a multivariate outlier and was removed hence for this study two cases with a value of less than .001 were excluded from further analysis.

### 4.3 Organization Profile

This covers type of company, department, size of the firm and the age or number of years the firm has been in operation in Kenya. Results showed that product firms were 262 (82.1%) while service industries 57 (17.9%). Marketing department were 24 (7.5%) while production and or operations had 295 (92.5%). Firms with below 300 employees had the highest percentage of 57.1%, followed by employees' range of 301-600 at 24%, while above 900 employees at 10.2% and finally 601-900 employees range at 8.6%. Firms that have been operational for above 30 years had the highest percentage of 45.1% followed by those in 11-20 years range (21.6%), then less than 10 years at 18.2% and lastly 21-30 years range at 15.1% as shown in Table 4.5.

**Table 4.5: Firm Profile**

| Variable | Category | N | Frequency | Percentage |
|---|---|---|---|---|
| Type of company | Product | 319 | 262 | 82.1 |
| | Service | | 57 | 17.9 |
| Department | Production/Operations | 319 | 295 | 92.5 |
| | | | 24 | 7.5 |
| Size of the firm | Below 300 | 319 | 194 | 57.1 |
| | 301-600 | | 71 | 24.0 |
| | 601-900 | | 21 | 8.6 |
| | Above 900 | | 7 | 10.2 |
| Age of the firm | Less than 10 | 319 | 58 | 18.2 |
| | 11-20 | | 69 | 21.6 |
| | 21-30 | | 48 | 15.1 |
| | Above 30 | | 144 | 45.1 |

**Source:** Researcher (2019)

Control variables for the study were age and size of the firm. These effects had to be controlled for so as to avoid their confounding effect that could distort the resulting causal effect of dynamic capabilities on competitive advantage.

### 4.4 Descriptive Statistics for the Study Variables

Descriptive statistics are presented in terms of the mean, standard deviation, skewness and kurtosis where values of the mean provide information about how respondents as one whole agreed or disagreed with given statements while skewness and kurtosis provide information about whether data was drawn from a normal distributed population. Based on skewness and kurtosis statistic, the decision criteria to the effect that data must be in the range of +/-2 for it to be normally distributed (George & Mallery, 2010) so as to deduce normality of the collected data for each of the described variables.

### 4.4.1 Descriptive Statistics for Competitive Advantage

This section presents the perceptions of respondents regarding competitive advantage of the firm showing the level to which managers agreed or disagreed with the statements employed to measure competitive advantage. The descriptive results on competitive advantage in Table 4.6 showed that respondents were not quite sure whether their products or services are difficult to be imitated (Mean = 3.36; SD = 1.18; Skewness = -.26; Kurtosis -1.03; S.E = .066; variance = 1.39). The findings imply that competitive advantage in manufacturing firms is largely through eight different approaches out of the nine as shown by the mean, skeweness, kurtosis and standard deviation: our products are applicable to multiple situations (mean = 4.50; SD = .55; skewness = -1.65 and kurtosis = 5.58); unique product and service (mean = 4.33; SD = .74; skewness = -1.49 and kurtosis = 2.58); sustainable product (mean = 4.29; SD = .63; skewness = -1.45 and kurtosis = 3.62); can be diffentiated from others (mean = 4.19; SD = .89; skewness = -1.53 and kurtosis = 2.29); tailored to meet needs of customers (mean = 4.69; SD = .43; skewness = -1.47 and kurtosis = 2.82); high quality products (mean = 4.70; SD = .42; skewness = -1.28 and kurtosis = 1.23); easily identifiable (mean = 4.45; SD = .77; skewness = -1.94 and kurtosis = 4.21); highly preferred by customers (mean = 4.63; SD = .49; skewness = -1.59 and kurtosis = 3.68).

**Table 4.6: Descriptive Statistics Results for Competitive Advantage**

| Items | Min | Max | Mean | SE | SD | Skewness | Kurtosis |
|---|---|---|---|---|---|---|---|
| Difficult to imitate | 1.0 | 5.0 | 3.36 | .07 | 1.18 | -.26 | -1.03 |
| Applicable to multiple situations | 1.0 | 5.0 | 4.50 | .03 | .55 | -1.65 | 5.58 |
| Unique product/service | 1.0 | 5.0 | 4.33 | .04 | .74 | -1.49 | 2.58 |
| Sustainable product | 1.0 | 5.0 | 4.29 | .04 | .63 | -1.45 | 3.62 |
| Diffentiated from others | 1.0 | 5.0 | 4.19 | .05 | .89 | -1.53 | 2.29 |
| Tailored to meet customers' needs | 2.5 | 5.0 | 4.69 | .02 | .43 | -1.47 | 2.82 |
| High quality products | 3.0 | 5.0 | 4.70 | .02 | .42 | -1.28 | 1.23 |
| Easily identifiable | 1.5 | 5.0 | 4.45 | .04 | .77 | -1.94 | 4.21 |
| Highly preferred by customers | 2.0 | 5.0 | 4.63 | .03 | .49 | -1.59 | 3.68 |
| **Average mean (Composite)** | **1.56** | **5.00** | **4.35** | **.04** | **.68** | **-1.41** | **2.78** |

**Source:** Researcher (2019)

The findings showed that companies' competitive advantage is summed up to a mean (4.35), SD (.68), skewness (-1.40); kurtosis (2.78); SE (.04); minimum (1.56); maximum (5.0) implying that items of study describes competitive advantage.

### 4.4.2 Descriptive Statistics for Dynamic Capabilities

The main purpose of this section is to find out the perception of respondents regarding dynamic capabilities by presenting the extent to which respondents agreed or disagreed with the statements used to measure DC. Dynamic capabilities were categorized into three measures: sensing capabilities, seizing capabilities and reconfiguration capabilities as postulated by Teece (2007). Most of the respondents do not attend business forums that discusses business trends (mean = 4.13; SD = .95) as shown in the results. The overall mean score for sensing capability = 4.45, SD = .053; skewness = -1.45; kurtosis = 4.10; SE = .03 confirmed that items of study cover sense capabilities.

**Table 4.7: Descriptive Statistics for Dynamic Capabilities**

| Items | Min. | Max. | Mean | SE | SD. | Skewness | Kurtosis |
|---|---|---|---|---|---|---|---|
| Fast in detecting changes in the industry | 2.5 | 5.0 | 4.48 | .03 | .48 | -.96 | 1.82 |
| Often review possible influence of changes | 2.0 | 5.0 | 4.44 | .03 | .50 | -1.06 | 2.12 |
| Quickly understand new opportunities | 2.5 | 5.0 | 4.53 | .03 | .45 | -.97 | 1.48 |
| Regularly check quality of functional capabilities | 1.0 | 5.0 | 4.43 | .03 | .55 | -1.96 | 7.94 |
| Regularly check operational capabilities | 1.5 | 5.0 | 4.45 | .03 | .54 | -1.80 | 6.10 |
| Pay great attention to monitoring change of functional and operation capabilities | 1.5 | 5.0 | 4.41 | .03 | .56 | -1.80 | 6.74 |
| Pay great attention to monitoring the efficiency of new processes | 1.5 | 5.0 | 4.35 | .03 | .64 | -1.71 | 4.57 |
| Established processes to identify target market segments, changing customer needs and innovation | 1.5 | 5.0 | 4.44 | .03 | .53 | -1.31 | 3.60 |
| Observe best practices of product and service delivery to our customers | 1.5 | 5.0 | 4.53 | .03 | .48 | -1.44 | 5.23 |
| **Sensing Capabilities Composite** | **1.72** | **5.0** | **4.45** | **.03** | **.53** | **-1.45** | **4.40** |
| We attend business forums that discusses changing trends within our business operational environment | 1.0 | 5.0 | 4.13 | .05 | .95 | -1.36 | 1.24 |
| Employees regularly attend business forums to learn about new market/customer needs | 1.0 | 5.0 | 3.74 | .07 | 1.16 | -1.04 | -.002 |
| Existing knowledge is readily available to each department | 1.0 | 5.0 | 4.16 | .04 | .77 | -1.43 | 2.35 |
| Business unit periodically circulates new information or knowledge to update everyone | 1.0 | 5.0 | 3.44 | .07 | 1.28 | -.60 | -.99 |
| During major market or technological development changes, every department is made to know immediately | 1.0 | 5.0 | 4.10 | .05 | .86 | -1.28 | 1.31 |
| Employees have capabilities to produce many novel and useful ideas | 1.0 | 5.0 | 4.05 | .06 | .98 | -1.38 | 1.42 |
| Have capabilities to effectively develop novel ideas, new knowledge and insights to impact on product development | 1.0 | 5.0 | 4.23 | .04 | .78 | -1.64 | 3.24 |
| **Seizing Capabilities Composite** | **1.0** | **5.0** | **3.98** | **.05** | **.97** | **-1.25** | **1.22** |
| We transform existing resources into new capabilities | 1.5 | 5.0 | 4.16 | .04 | .75 | -1.45 | 2.51 |
| Bring new perceptile changes that lie outside existing features of existing capabilities | 1.0 | 5.0 | 4.13 | .04 | .79 | -1.42 | 2.53 |
| Effectively identify valuable capability elements to connect and combine them in new ways | 1.0 | 5.0 | 4.14 | .05 | .80 | -1.56 | 2.84 |
| Effectively recombine existing capabilities into novel combinations | 1.0 | 5.0 | 4.05 | .05 | .88 | -1.29 | 1.53 |
| We strategically change our strategies | 1.0 | 5.0 | 4.28 | .04 | .69 | -1.74 | 4.66 |
| Effectively integrate new externally sourced capabilities and combine them with existing capabilities into novel combinations | 1.0 | 5.0 | 4.13 | .05 | .85 | -1.53 | 2.31 |
| Substantially renewed our business processes | 1.0 | 5.0 | 4.18 | .05 | .80 | -1.69 | 3.64 |
| Substantially changed ways of achieving our targets and objectives | 1.5 | 5.0 | 4.27 | .04 | .69 | -1.40 | 2.44 |
| Implement new kinds of management methods more responsive within business processes | 1.5 | 5.0 | 4.28 | .04 | .68 | -1.54 | 3.37 |
| Bold efforts to maximize probability of exploiting opportunities to maximize probability of exploiting opportunities | 1.5 | 5.0 | 4.39 | .03 | .57 | -1.32 | 2.60 |
| Successfully integrate the new knowledge acquired with existing knowledge | 1.0 | 5.0 | 4.34 | .04 | .68 | -1.81 | 5.07 |
| **Reconfiguration Capabilities Composite** | **1.18** | **5.0** | **4.21** | **.04** | **.74** | **-1.52** | **3.04** |

**Source:** Researcher (2019)

Seizing capability was also tested and results showed that most of the respondents did not agree with the statement that employees regularly hold business forums to learn about new market/customer needs (mean = 3.74; SD = 1.16; SE = .65; skeweness = -1.04; kurtosis = -.002). It is also evident in this study that respondents did not agree that business unit periodically circulates new information or knowledge to update everyone (mean = 3.44; SD = 1.28; SE = .072; skeweness = -.60; kurtosis = -.99). Overall results showed that majority of the respondents agree that seizing capability is a necessary for firms (mean = 3.98; SD = 0.97; SE = .05; skeweness = -1.25; kurtosis = 1.22) proving that managers in firms are able to seize capabilities.

Final component in dynamic capabilities was reconfiguration capability that had a mean (4.21); SD (0.74); SE = (.04); skeweness (-1.52) and kurtosis (3.04). The results showed that all the respondents understood the items of study and that these items describe reconfiguration capability as shown in Table 4.7.

### 4.4.3 Descriptive Statistics for Organizational Ambidexterity

This section outlines the perception of managers regarding organizational ambidexterity using the scales or their views concerning various items or statements which is 5-point Likert scale. Results showed that managers views on the first item regarding exploitation ambidexterity that is “organization accepts demands that go beyond existing products and services” was not strongly agreed or strongly disagreed as shown by standard deviation (1.19); mean (3.13); curve skewed to the left (-.16); kurtosis (-1.20) with standard error (.07) which is above the threshold of .05. The third item was “we experiment with new products and services into our local market” proved by standard deviation (1.18); mean (3.61); curve skewed to the left (-.81); kurtosis (-.35) with standard error (.07) which is above the threshold of .05. The fourth item stated that “we commercialize products and services that are completely

new to our organization" had a mean (3.24); standard deviation (1.35); curve skewed to the left (-.33); kurtosis (-1.24); and standard error (.08).

**Table 4.8: Descriptive Statistics for Organizational Ambidexterity**

| Items | Min. | Max. | Mean | SE | SD | Skewness | Kurtosis |
|---|---|---|---|---|---|---|---|
| Organization accepts demands that go beyond existing products and services | 1.0 | 5.0 | 3.13 | .07 | 1.19 | -.16 | -1.20 |
| We invent new products and services | 1.0 | 5.0 | 3.96 | .06 | .98 | -1.08 | .63 |
| We experiment with new products and services into our local market | 1.0 | 5.0 | 3.61 | .07 | 1.18 | -.81 | -.35 |
| Commercialize products and services that are completely new to our organization | 1.0 | 5.0 | 3.24 | .08 | 1.35 | -.33 | -1.24 |
| We utilize new opportunities in new markets | 1.5 | 5.0 | 4.43 | .03 | .61 | -1.36 | 2.44 |
| Lowering costs of internal processes is an important objective | 1.5 | 5.0 | 4.48 | .03 | .61 | -1.42 | 2.38 |
| We improve our provision's efficiency of products and services | 1.5 | 5.0 | 4.50 | .03 | .59 | -1.95 | 5.81 |
| **Exploitation Ambidexterity composite** | **1.21** | **5.0** | **3.91** | **.05** | **.93** | **-1.02** | **1.21** |
| Organization regularly use new distribution channels | 1.0 | 5.0 | 3.52 | .06 | 1.09 | -.57 | -.67 |
| Regularly search for and approach new clients in new markets | 1.0 | 5.0 | 4.22 | .05 | .85 | -1.61 | 2.81 |
| Frequently refine the provision of existing products and services | 1.0 | 5.0 | 4.09 | .06 | .98 | -1.53 | 2.04 |
| We regularly implement small adaptations to existing products and services | 1.0 | 5.0 | 3.91 | .06 | .99 | -1.12 | .81 |
| Introduce improved but existing products and services for our local market | 1.0 | 5.0 | 4.32 | .04 | .77 | -1.79 | 3.85 |
| Increase economies of scales in existing markets | 1.5 | 5.0 | 4.49 | .04 | .65 | -2.07 | 5.85 |
| Organization expands services for existing clients | 2.5 | 5.0 | 4.52 | .03 | .53 | -1.10 | 1.04 |
| **Exploration ambidexterity composite** | **1.29** | **5.0** | **4.15** | **.05** | **0.84** | **-1.40** | **2.25** |

**Source:** Researcher (2019)

It is evident from Table 4.8 that items of study describe exploitation ambidexterity and exploration ambidexterity as shown by the mean (3.91); standard deviation (.93); standard error (.05) skeweness (-1.02) and kurtosis (1.21) and exploration ambidexterity mean (4.15); standard deviation (.84); standard error (.05) skeweness (-1.40) and kurtosis (2.25) respectively.

### 4.4.4 Descriptive Statistics for Leadership Style

This section outlines managers' perception on items or statements pertaining to leadership style – transformational, transactional and laissez-faire where scales range was strongly disagree (1) to strongly agree (5).

The results on transformational leadership style showed that managers were sure of all the statements regarding their leader (mean = 4.19, SD = .72, SE = .04) with normal curve skewed to the left (-1.27) and kurtosis (2.05). Transformational leadership style composite had a mean (4.19); SD (.72); SE = (.04); skeweness (-1.27) and kurtosis (2.05) while transactional leadership style composite mean (3.41); SD (1.1); SE = (.06); skeweness (-.45) and kurtosis (-.5) and finally laissez-faire composite mean (1.61); SD (.55); SE = (.04); skeweness (1.63) and kurtosis (3.6) indicating that majority of the managers are sure of their leaders transformational leadership style implying that the items of study describes transformational leadership style.

Transactional leadership style had a mean (3.41); standard deviation (1.1); skeweness (-.45); kurtosis (-.50) while laissez-faire had a mean (1.61); standard deviation (.55); skeweness (1.63); kurtosis (3.6) implying that the managers were not sure of items of study. Statements regarding transactional leadership style had one item that leaders were sure of "leader discusses in specific terms who is responsible for achieving performance targets" (mean = 3.87, SD = .928, SE = .05) with normal curve skewed to the left (-1.20), kurtosis (1.25). The remaining six items: leader keeps track of all mistakes; re-examines critical assumptions to questions whether they are appropriate; focuses attention on irregularities, mistakes, complaints and deviations from standards; provides me with assistance in exchange for my efforts; expresses satisfaction when I meet expectations by rewarding effort; directs my attention toward

failures to meet standards" showed that leaders were not sure at all of their leaders' behaviour.

Laissez-faire were all positively skewed showing that all the managers did not agree with the statement or were not sure that their leader: avoids making decisions (mean = 1.61, SD = .68, skeweness = 1.82, kurtosis = 4.35); delays responding to urgent questions (mean = 1.59, SD = .66, ); absent when needed (mean = 1.51 SD = .62); firm believer in "if it isn't broken, don't fix it (mean = 1.66, SD = .66); avoids getting involved when important issues arise (mean = 1.58, SD = .62); do not try to change anything (mean = 1.69, SD = .71); whatever others want to do is ok with our leader (mean = 1.64, SD = .59); gives little input and expects little in return (mean = 1.60, SD = .63); looks for a way to get things together when mistakes occur without investigating (mean = 1.65, SD = .69); shows no interest in how and when tasks are completed (mean = 1.58, SD = .61).

**Table 4.9: Descriptive Statistics for Leadership Style**

| Items | Min. | Max. | Mean | SE | SD | Skewness | Kurtosis |
|---|---|---|---|---|---|---|---|
| Leader instills pride in me | 1.0 | 5.0 | 3.97 | .05 | .88 | -1.28 | 1.41 |
| Leader talks enthusiastically about what needs to be accomplished | 1.5 | 5.0 | 4.31 | .03 | .60 | -1.27 | 2.26 |
| Acts in ways that builds my respect | 1.5 | 5.0 | 4.27 | .04 | .68 | -1.18 | 1.25 |
| Articulates a compelling vision by talking optimistically about the future | 1.0 | 5.0 | 4.32 | .03 | .60 | -1.40 | 3.71 |
| Seeks differing perspectives when solving problems | 1.5 | 5.0 | 4.18 | .04 | .73 | -1.27 | 1.83 |
| Displays a sense of power and confidence | 1.5 | 5.0 | 4.22 | .04 | .67 | -1.12 | 1.61 |
| Emphasizes importance of collective sense of mission and purpose | 1.5 | 5.0 | 4.23 | .04 | .70 | -1.34 | 2.29 |
| Considers moral and ethical consequences of decisions | 1.5 | 5.0 | 4.19 | .04 | .75 | -1.47 | 2.49 |
| Expresses confidence that goals will be achieved | 1.0 | 5.0 | 4.34 | .04 | .66 | -1.50 | 3.33 |
| Considers me as having different needs, abilities and aspirations | 1.0 | 5.0 | 3.85 | .05 | .90 | -.91 | .34 |
| **Transformational Leadership Composite** | **1.3** | **5.0** | **4.19** | **.04** | **.72** | **-1.27** | **2.05** |
| Keeps track of all mistakes | 1.0 | 5.0 | 3.40 | .072 | 1.29 | -.51 | -1.12 |
| Re-examines critical assumptions to question whether they are appropriate | 1.0 | 5.0 | 3.64 | .063 | 1.13 | -.62 | -.88 |
| Leader discusses in specific terms who is responsible for achieving performance targets | 1.0 | 5.0 | 3.87 | .052 | .93 | -1.20 | 1.25 |
| Focuses attention on irregularities, mistakes, complaints and deviations from standards | 1.0 | 5.0 | 3.39 | .07 | 1.1934 | -.356 | -1.088 |
| Provides me with assistance in exchange for my efforts | 1.0 | 5.0 | 3.44 | .051 | .9136 | -.39 | -.08 |
| Expresses satisfaction when I meet expectations by rewarding effort | 1.0 | 5.0 | 3.32 | .06 | 1.14 | -.35 | -.84 |
| Directs my attention toward failures to meet standards | 1.0 | 5.0 | 2.83 | .06 | 1.09 | .30 | -.76 |
| **Transactional Leadership Style Composite** | **1.0** | **5.0** | **3.41** | **.06** | **1.1** | **-.45** | **-.50** |
| Leader avoids making decisions | 1.0 | 5.0 | 1.61 | .04 | .68 | 1.82 | 4.35 |
| Delays responding to urgent questions | 1.0 | 5.0 | 1.59 | .04 | .66 | 1.75 | 3.97 |
| Absent when needed | 1.0 | 5.0 | 1.51 | .03 | .62 | 2.50 | 9.61 |
| Firm believer in “if it isn’t broken, don’t fix it | 1.0 | 4.0 | 1.66 | .04 | .66 | 1.35 | 1.91 |
| Avoids getting involved when important issues arise | 1.0 | 4.0 | 1.58 | .03 | .62 | 1.49 | 2.64 |
| Do not try to change anything | 1.0 | 4.5 | 1.69 | .04 | .71 | 1.42 | 1.99 |
| Whatever others want to do is ok with our leader | 1.0 | 4.5 | 1.64 | .03 | .59 | 1.28 | 2.40 |
| Gives little input and expects little in return | 1.0 | 4.5 | 1.60 | .03 | .63 | 1.37 | 2.21 |
| Looks for a way to get things together when mistakes occur without investigating | 1.0 | 4.5 | 1.65 | .04 | .69 | 1.59 | 2.80 |
| Shows no interest in how and when tasks are completed | 1.0 | 4.5 | 1.58 | .034 | .61 | 1.71 | 4.13 |
| **Laissez-faire Leadership Style Composite** | **1.0** | **4.5** | **1.61** | **.04** | **.55** | **1.63** | **3.6** |

**Source:** Researcher (2019)

### 4.5 Reliability Analysis

Garspm (2012) posits that intercorrelation of construct items is measured using cronbach's alpha coefficient where items are considered unidimensional and acceptable if they are .60 (Sekaran, 2003) and .70 highly preferred. The instrument and study measures were tested for preciseness and correctness of the research findings for generalizability purposes (Winter, 2003; Lewis & Ritchie, 2003).

#### 4.5.1 Reliability Analysis before factor analysis

This study assessed the reliability of the factors used by making sense of the calculated Cronbach's alpha (Saunders *et al.,* 2007). The obtained reliability index of the variables as presented in Table 4.10 is a sure indication that any other researcher can infer the original piece of research and achieve comparable evidence or results with similar or same study population.

**Table 4.10: Reliability results before factor analysis**

| Construct | Dimensions | Number of Items | Cronbach's alpha coefficient |
|---|---|---|---|
| Competitive advantage | Competitive advantage | 9 | .749 |
| Dynamic capabilities | Sensing capabilities | 11 | .834 |
| | Seizing capabilities | 11 | .809 |
| | Reconfiguration capabilities | 11 | .868 |
| Leadership style | Transformational style | 11 | .848 |
| | Transactional style | 11 | .764 |
| | Laissez-Faire style | 11 | .911 |
| Organizational ambidexterity | Exploitation innovation | 7 | .631 |
| | Exploration innovation | 7 | .671 |

**Source:** Researcher (2019)

The results support Hair *et al.,* (2007) and Henson (2001) where all the items were above .60 cut off: competitive advantage (.749); sensing capabilities (.834); seizing capabilities (.809); reconfiguration capabilities (.868); transformational leadership

style (.848); transactional leadership style (.764); laissez-faire (.911); Exploitation innovation technology (.631) and exploration innovation technology (.671) hence good internal consistency.

### 4.5.2 Reliability results after factor analysis

Results showed that after factor analysis, there were items that were dropped because they did not meet the threshold of .60 cut-off as per Hair *et al.,* (2007) recommendation and this is shown in Table 4.11. Dynamic capabilities and leadership style items were subjected to factor analysis while competitive advantage and organizational ambidexterity were transformed directly because of the number of items.

**Table 4.11: Reliability results after Factor Analysis**

| Construct | Dimensions | Number of Items | Cronbach's alpha coefficient |
|---|---|---|---|
| Dynamic capabilities | Sensing capabilities | 9 | .841 |
| | Seizing capabilities | 7 | .841 |
| | Reconfiguration capabilities | 11 | .772 |
| Leadership style | Transformational style | 10 | .845 |
| | Transactional style | 7 | .810 |
| | Laissez-Faire style | 10 | .917 |

**Source:** Researcher (2019)

Table 4.11 showed that items of study were reduced for sensing capabilities (11 to 9), seizing capabilities (11 to 7) but reconfiguration capabilities were all retained; one item for transformational leadership was removed; four in transactional leadership style and one in laissez-faire. The items removed were below .5 showing that they could not measure the item in study.

## 4.6 Factor Analysis Results

The purpose for conducting factor analysis was to identify the latent variables in the data constructs so as to prepare it for regression (Williams *et al.*, 2010; Idinga, 2015), to explore a content area, structure a domain, map unknown concepts, classify or reduce data, illuminate causal nexuses, screen or transform data, define relationships, test hypotheses, formulate theories, control variables, or make inferences (Williams *et al.*, 2010).

### 4.6.1 Factor Analysis for Dynamic Capabilities

#### 4.6.1.1 KMO results for Dynamic Capabilities

Data factorability was done using Bartlets test of sphericity and Kaiser- Meyer-Olkin measure of sampling adequacy where Bartlets test of sphericity should be statically significant at $\rho < 0.05$ while KMO index should range from 0 to 1. The threshold for retaining an item as a measure of a given variable was a minimum factor loading of .5, and Eigen value of not less than 1.0 (Osborne 2015; Hair *et al.,* 2013, Field 2009). KMO measure was (.87) which is greater than .5 while Barlett's test findings are significant ($X^2$ (528) = 4373.95, *p*-value <.001 (Tabachnick & Fidell 2007) confirming that all the changes in the three components of sensing, seizing and reconfiguration capabilities can significantly be relied upon to predict majority of changes in dynamic capabilities.

**Table 4.12: KMO and Barlett's Test Results for Dynamic Capabilities**

| KMO and Bartlett's Test | | |
|---|---|---|
| Kaiser-Meyer-Olkin Measure of Sampling Adequacy. | | .872 |
| Bartlett's Test of Sphericity | Approx. Chi-Square | 4373.954 |
| | Df | 528 |
| | Sig. | .000 |

**Source:** Researcher (2019)

### 4.6.1.2 Total Variance Explained Results for Dynamic Capabilities

Factor analysis was carried out on dynamic capabilities and the factors were extracted using principal component analysis (Osborne, 2015; Thompson, 2004) and rotation done using varimax with Kaiser Normalization (Osborne, 2015). PCA was chosen as the most convenient method as it revealed the set of factors which accounted for all common and unique variances (Idinga, 2015). The items for measuring dynamic capabilities were regrouped into three sensing, seizing, and reconfiguration capabilities. Table 4.13 showed that sensing capability accounted for 27.42% of variation in dynamic capability while seizing 36.01%; and reconfiguration 42.69% of the changes in the dynamic capabilities. Factors with Eigen values greater than 1 were chosen but results showed that only three items were considered for dynamic capabilities variables.

**Table 4.13: Total Variance Explained Results for Dynamic Capabilities**

| Total Variance Explained | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | Initial Eigen values | | | Extraction Sums of Squared Loadings | | | Rotation Sums of Squared Loadings | | |
| Component | Total | % of Variance | Cumulative % | Total | % of Variance | Cumulative % | Total | % of Variance | Cumulative % |
| 1 | 9.05 | 27.42 | 27.42 | 9.05 | 27.42 | 27.42 | 5.20 | 15.76 | 15.76 |
| 2 | 2.83 | 8.58 | 36.01 | 2.83 | 8.58 | 36.01 | 4.96 | 15.04 | 30.80 |
| 3 | 2.21 | 6.68 | 42.69 | 2.21 | 6.68 | 42.69 | 3.92 | 11.89 | 42.69 |
| 4 | 1.62 | 4.92 | 47.60 | | | | | | |
| 5 | 1.29 | 3.91 | 51.51 | | | | | | |
| 6 | 1.19 | 3.61 | 55.12 | | | | | | |
| 7 | 1.09 | 3.31 | 58.44 | | | | | | |
| 8 | 1.07 | 3.23 | 61.66 | | | | | | |

**Extraction Method**: Principal Component Analysis.
**Source:** Researcher (2019)

### 4.6.1.3 Rotated Component Matrix Results for Dynamic Capabilities

The threshold for retaining an item as a measure of a given variable was a minimum factor loading of .5, and Eigen value of not less than 1.0 (Osborne 2015; Hair *et al.*, 2013, Field 2009). Table 4.14 showed that all the components were above .5 which

the cut-off for factor loading with the lowest being .520 and the highest .713 implying that these factors were retained for data transformation and the factors which could not load were removed.

**Table 4.14: Factor Analysis Results for Dynamic Capabilities**

| Questionnaire Items | Sensing | Seizing | Reconf |
|---|---|---|---|
| Fast in detecting changes in the industry | .643 | | |
| Often review possible influence of changes | .620 | | |
| Quickly understand new opportunities | .713 | | |
| Regularly check quality of functional capabilities | .607 | | |
| Regularly check operational capabilities | .677 | | |
| Pay great attention to monitoring change of functional and operational capabilities | .637 | | |
| Pay great attention to monitoring the efficiency of new processes | .589 | | |
| Established processes to identify target market segments, changing customer needs and innovation | .637 | | |
| Observe best practices of product and service delivery to our customers | .558 | | |
| We attend business forums that discusses changing trends within our business operational environment | | .607 | |
| Employees regularly attend business forums to learn about new market/customer needs | | .715 | |
| Existing knowledge is readily available to each department | | .520 | |
| Business unit periodically circulates new information or knowledge to update everyone | | .671 | |
| During major market or technological development changes, every department is made to know immediately | | .685 | |
| Employees have capabilities to produce novel and useful ideas | | .520 | |
| Have capabilities to effectively develop novel ideas, new knowledge and insights to impact on product development | | .544 | |
| Transform existing resources into new capabilities | | | .650 |
| Bring new perceptile changes that lie outside existing features of existing capabilities | | | .666 |
| Effectively identify valuable capability elements to connect and combine them in new ways | | | .719 |
| Effectively recombine existing capabilities into novel combinations | | | .681 |
| Strategically change our strategies | | | .617 |
| Effectively integrate new externally sourced capabilities and combine them with existing capabilities into novel combinations | | | .634 |
| Substantially renewed our business processes | | | .615 |
| Substantially changed ways of achieving our targets and objectives | | | .611 |
| Implement new kinds of management methods more responsive within business processes | | | .526 |
| Bold efforts to maximize probability of exploiting opportunities | | | .544 |
| Successfully integrate new knowledge acquired with existing knowledge | | | .616 |

**Extraction Method**: Principal Component Analysis.
**Rotation Method**: Varimax with Kaiser Normalization.
a. Rotation converged in 4 iterations.

**Source:** Researcher (2019)

### 4.6.2 Factor Analysis for Leadership Style

#### 4.6.2.1 KMO results for Leadership Style

Data factorability was done using Bartlets test of sphericity and Kaiser- Meyer-Olkin measure of sampling adequacy where Bartlets test of sphericity should be statically significant at $\rho < 0.05$ and KMO index range from 0 to 1. The results further showed that the sample used to arrive at the findings was adequate with KMO of (.89) which is greater than the threshold of (.5).

**Table 4.15: KMO and Bartlett's Test results for Leadership Style**

| KMO and Barlett's Test | | |
|---|---|---|
| Kaiser-Meyer-Olkin Measure of Sampling Adequacy. | | .893 |
| Bartlett's Test of Sphericity | Approx. Chi-Square | 4737.989 |
| | Df | 528 |
| | Sig. | .000 |

**Source:** Researcher (2019)

Barlett's test Chi-Square (528) = 4737.99, *p*-value <.01 implying that significant changes in the leadership style can be predicted using the changes in the three salient operational factors – transformational, transactional and laissez-faire leadership style.

#### 4.6.2.2 Total Variance Explained Results for Leadership Style

Factor analysis was carried out on leadership style components using PCA and varimax rotation with Kaizer normalization and the results indicate that all the factors are good measures for the variations in leadership style and can be studied in three operational factors transformational, transactional and laissez-faire which accounted for 25.87%, 36.31%, and 45.02% respectively changes in leadership style (Table 4.16).

**Table 4.16: Total Variance Explained Results for Leadership Style**

| Total Variance Explained | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Component | Initial Eigen values | | | Extraction Sums of Squared Loadings | | | Rotation Sums of Squared Loadings | | |
| | Total | % of Variance | Cumulative % | Total | % of Variance | Cumulative % | Total | % of Variance | Cumulative % |
| 1 | 8.54 | 25.87 | 25.87 | 8.54 | 25.87 | 25.87 | 6.29 | 19.07 | 19.07 |
| 2 | 3.45 | 10.44 | 36.31 | 3.45 | 10.44 | 36.31 | 4.86 | 14.73 | 33.80 |
| 3 | 2.87 | 8.71 | 45.02 | 2.87 | 8.71 | 45.02 | 3.70 | 11.22 | 45.02 |
| 4 | 1.79 | 5.43 | 50.46 | | | | | | |
| 5 | 1.61 | 4.89 | 55.34 | | | | | | |
| 6 | 1.05 | 3.18 | 58.53 | | | | | | |
| 7 | 1.01 | 3.06 | 61.59 | | | | | | |

**Extraction Method**: Principal Component Analysis

**Source:** Researcher (2019)

### 4.6.2.3 Factor Analysis Results for Leadership Style

The threshold for retaining an item as a measure of a given variable was a minimum factor loading of .5, and Eigen value of not less than 1.0 (Osborne 2015; Hair *et al.*, 2013, Field 2009). Table 4.17 showed that all the components of leadership style were above .5 which is the cut-off for factor loading with the lowest being .514 and the highest .826 implying that these factors were retained for data transformation and further analysis. A factor that did not load that is below .5 was excluded and factors above .5 included for transformation.

**Table 4.17: Factor Analysis results for Leadership Style**

| Questionnaire Items | Transf. | Transt. | Laissez |
|---|---|---|---|
| Leader instills pride in me | .544 | | |
| Leader talks enthusiastically about what needs to be accomplished | .663 | | |
| Acts in ways that build my respect | .664 | | |
| Articulates a compelling vision by talking optimistically about the future | .702 | | |
| Seeks a differing perspectives when solving problems | .694 | | |
| Displays a sense of power and confidence | .674 | | |
| Emphasizes importance of collective sense of mission and purpose | .592 | | |
| Considers moral and ethical consequences of decisions | .619 | | |
| Expresses confidence that goals will be achieved | .593 | | |
| Considers me as having different needs, abilities and aspirations | .514 | | |
| Keeps track of all mistakes | | .698 | |
| Re-examines critical assumptions to questions whether they are appropriate | | .700 | |
| Leader discusses in specific terms who is responsible for achieving performance targets | | .644 | |
| Focuses attention on irregularities, mistakes, complaints and deviations from standards | | .734 | |
| Provides me with assistance in exchange for my efforts | | .628 | |
| Expresses satisfaction when I meet expectations by rewarding effort | | .613 | |
| Directs my attention toward failures to meet standards | | .566 | |
| Leader avoids making decisions | | | .763 |
| Delays responding to urgent questions | | | .733 |
| Absent when needed | | | .826 |
| Firm believer in “if it isn’t broken, don’t fix it | | | .712 |
| Avoids getting involved when important issue arise | | | .769 |
| Do not try to change anything | | | .645 |
| Whatever others want to do is ok with our leader | | | .705 |
| Gives little input and expects little in return | | | .738 |
| Looks for a way to get things together when mistakes occur without investigating | | | .727 |
| Shows no interest in how and when tasks are completed | | | .757 |

**Extraction Method:** Principal Component Analysis.
**Rotation Method**: Varimax with Kaiser Normalization.
a. Rotation converged in 5 iterations.

**Source:** Researcher (2019)

### 4.7 Data Transformation and Index Construction

After factor analysis, data was transformed by getting the means of the items that loaded to the respective factors hence the means of the various factors derived being used for further analysis. Competitive advantage and organizational ambidexterity were transformed directly because of the least number of items. Factor analysis was carried out on independent variables (dynamic capabilities) and on mediator (leadership style) before transformation of the data to allow further analysis. This was

done by adding all the items then divided by the number of items (DC = SE + SZ + RC/3) to transform dynamic capabilities and (LS = TR + RC + LZ/3) for leadership style transformation and the results for transformed data (Table 4.18).

**Table 4.18: Transformed Variables after factor analysis**

| Variables | N | Min. | Max. | Mean | Std. Dev. |
|---|---|---|---|---|---|
| Sensing capabilities | 319 | 3.00 | 5.00 | 4.45 | .35 |
| Seizing capabilities | 319 | 1.71 | 5.00 | 3.98 | .64 |
| Reconfiguration capabilities | 319 | 1.73 | 5.00 | 4.21 | .49 |
| Transformational leadership style | 319 | 2.00 | 5.00 | 4.19 | .47 |
| Transactional leadership style | 319 | 1.36 | 4.86 | 3.41 | .75 |
| Laissez-faire leadership style | 319 | 1.00 | 4.20 | 1.61 | .49 |

**Source:** Researcher (2019)

### 4.8 Tests for Multiple Regression Assumptions

Test of multiple regression assumptions is key in ensuring that the results obtained were actually representative of the sample to help obtain the best results possible (Hair *et al.*, 2010; 2013). The key assumptions tested were normality, linearity, multicollinearity, homoscedasticity and independence of errors (Hair *et al.*, 2010) later leading to testing of the hypothesis. The tests are as shown below:

#### 4.8.1 Test of Normality

The assumption of normality was examined at univariate level that is distribution of scores at an item-level and at multivariate level (distribution of scores within a combination of two or more than two items). The purpose of conducting normality test on the data was to confirm the distribution of the data that it assumes a symmetric bell-shaped curve to avoid errors in the prediction of value Y (dependent variable) in a way that approaches the normal curve (Ghasemi & Zahediasl, 2012). Shapiro Wilks Tests was used (Shapiro and Wilk, 1965) to calculate for each variable because the

sample was over 50 cases although SSPS gives the two default measures (K-S and S-W). If the p-value (Sig. value) of the Shapiro-Wilk Test is >.05 then the data is normal but if it is below .05, the data significantly deviates from a normal distribution.

Lilliefors significance correction which is used to test that data comes from a normally distributed population was applied. This also agreed with the findings of the skewness and kurtosis results discussed in construction of variables which suggested normality of data which ranged from -1.96 to +1.96. Results showed that all the variables are significant competitive advantage (.000); sensing capabilities (.000) seizing capabilities (.000); reconfiguration capabilities (.000); organizational ambidexterity (.001) and leadership style (.000) implying that the normality of data was not met but this was corrected through bootstrapping of the samples at 5000 (Table 4.19).

**Table 4.19: Test of Normality Results**

| Variables | Statistic | Df | Sig. |
|---|---|---|---|
| Competitive advantage | .963 | 319 | .000 |
| Sensing capabilities | .947 | 319 | .000 |
| Seizing capabilities | .938 | 319 | .000 |
| Reconfiguration capabilities | .926 | 319 | .000 |
| Organizational ambidexterity | .983 | 319 | .001 |
| Leadership style | .965 | 319 | .000 |

a. Lilliefors Significance Correction

**Source**: Researcher (2019)

Fig. 4.1 showed that mean = 5, SE = 15, SD = .995 for N 319 with Skewness range of ±1.96 for the data to pass the normality test while kurtosis values should be within the range of ±1.96 for the case where the data is normally distributed.

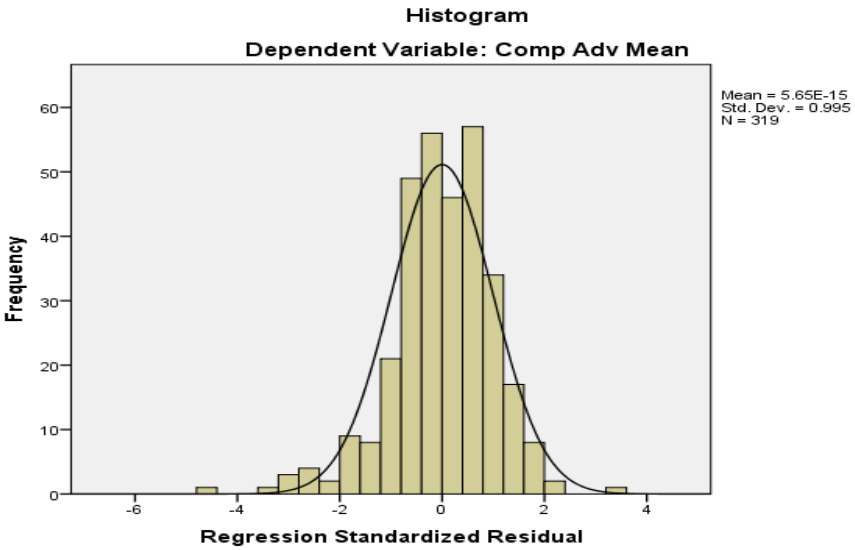



**Figure 4.1: Normality Assumption Results**

**Source:** Researcher (2019)

### 4.8.2 Test of Linearity

Linearity was tested using the mean, standard deviation, skeweness and kurtosis so as to check the actual strength of all the relationships because knowing that the level of the relationship among variables is considered as an important element in data analysis and also aid in identifying any departures from linearity which would affect correlation. Linearity was tested using Pearson Product Moment correlation coefficient to identify independent variables that provide the best predictions considered a prerequisite for running the regression analysis as shown in correlation results (Table 4.24). Linearity was also tested using the mean, standard deviation, skeweness and kurtosis (Table 4.20).

**Table 4.20: Test of Linearity Results**

| Variables | Mean | Std. Dev. | Skewness | Kurtosis |
|---|---|---|---|---|
| Competitive advantage | 4.35 | .41 | -.44 | -.09 |
| Sensing capabilities | 4.45 | .35 | -.67 | .16 |
| Seizing capabilities | 3.98 | .64 | -.83 | .57 |
| Reconfiguration capabilities | 4.21 | .49 | -1.03 | 1.88 |
| Transformational leadership style | 4.19 | .47 | -1.18 | 2.26 |
| Transactional leadership style | 3.41 | .75 | -.35 | -.64 |
| Laissez-faire leadership style | 1.61 | .49 | 2.01 | 6.10 |
| Exploitation ambidexterity | 3.91 | .57 | -.33 | -.43 |
| Exploration ambidexterity | 4.15 | .50 | -.64 | .26 |

**Source:** Researcher (2019)

The results shows that competitive advantage had (mean = 4.35, standard deviation = .41, skeweness -.44 and kurtosis (-.09); sensing capabilities (mean = 4.45, standard deviation = .35, skeweness -.67 and kurtosis (.16); seizing capabilities (mean = 3.98, standard deviation = .64, skeweness -.83 and kurtosis (.57); reconfiguration capabilities (mean = 4.21, standard deviation = .49, skeweness -1.18 and kurtosis (1.88); transformational leaderships style (mean = 4.19, standard deviation = .47, skeweness -1.18 and kurtosis (2.26); transactional leadership style (mean = 3.41, standard deviation = .75, skeweness -.35 and kurtosis (-.64); laissez-faire leadership style (mean = 1.61, standard deviation = .49, skeweness 2.01 and kurtosis (6.10); exploitation ambidexterity (mean = 3.91, standard deviation = .57, skeweness -.33 and kurtosis (-.43); and finally exploration ambidexterity (mean = 4.15, standard deviation = .50, skeweness -.64 and kurtosis (.26). Linear models predict values which fall in a straight line by having a constant unit of change or slope of the dependent variable for a constant change of the independent variables (Figure 4.2).

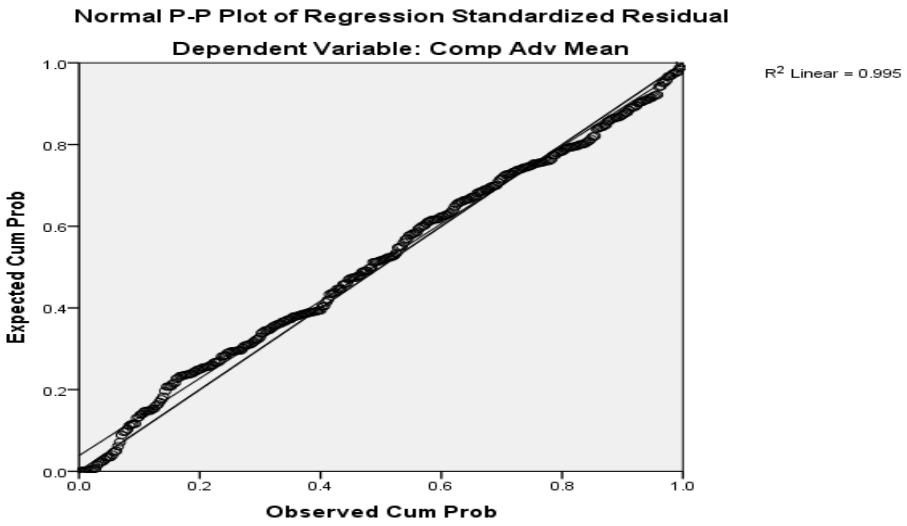



**Figure 4.2: Assumptions Linearity Results**

**Source:** Researcher (2019)

P-P plot of regression standardized residual showed that there is linear relationship between the dependent variable (competitive advantage) and the other variables ($R^2$ = .995) implying that there is 99.5% prediction of the relationship of variables hence the linearity assumption met.

### 4.8.3 Testing of Multicollinearity

The purpose of correlation analysis was to identify variables that provide the best predictions considered as a prerequisite for running regression analysis where the cut-off point for determining multicollinearity is a tolerance value that is more than .10 and a VIF value of less than 10 (Hair *et al.*, 2006; Ghozali, 2005; Morrison, 2003). The VIF values were less than ten and the tolerance level of more than .10 meaning that there was no multicollinearity among the study independent variables (Table 4.21).

**Table 4.21: Test of Multicollinearity Results**

| Variable | Tolerance | VIF |
|---|---|---|
| Sensing capabilities | .667 | 1.499 |
| Seizing capabilities | .751 | 1.332 |
| Reconfiguration capabilities | .618 | 1.617 |
| Transformational leadership style | .671 | 1.491 |
| Transactional leadership style | .784 | 1.275 |
| Laissez-faire leadership style | .775 | 1.290 |
| Exploitation ambidexterity | .697 | 1.435 |
| Exploration ambidexterity | .620 | 1.613 |

**Source:** Researcher (2019)

It is evident that multicollinearity is not prevalent in the data because the computed VIF are ranging from 1.275 to 1.617 which is far below the cut off value ten (10) as per Stevens (2002) where he confirms that VIF values higher than 10 are the ones that should indicate that multicollinearity exists in the data (Table 4.21). Tolerance levels were also checked and all of them were below 1.0 for all the variables which is the threshold above which multicollinearity would be said to exist implying that the data can be subjected to multiple regression analysis as there is no multicollinearity.

### 4.8.4 Test of Homoscedasticity

Homoscedasticity refers to the assumption that the dependent variable exhibits similar amounts of variance across the range of values for independent variables that is for each level of the predictor variable, the variance of the residual terms is found to be constant (Schutzenmeister *et al.,* 2012). The Levene's statistic for equality of variances was used to test for the assumption of homoscedasticity which for this case was to test whether the variability of competitive advantage (dependent variable) is uniform across values of the dynamic capabilities (independent variable). Violation of homoscedasticity of variance is confirmed if the Levene's test statistic is found to be

significant using a threshold (α .05) thus for cases where ($p < .05$) then the data was said to be heteroscedastic and would mean that data be subjected to transformation before applying it for any regression model (Martin & Bridgmon, 2012).

**Table 4.22: Test of Homogeneity of variances results**

| Variable | Levene Statistic | df1 | df2 | Sig. |
|---|---|---|---|---|
| Sensing capabilities | 2.22 | 26 | 287 | .001 |
| Seizing capabilities | 1.88 | 26 | 287 | .007 |
| Reconfiguration capabilities | 1.36 | 26 | 287 | .118 |
| Organizational ambidexterity | 2.32 | 26 | 287 | .000 |
| Leadership style | .85 | 26 | 287 | .674 |

**Source:** Researcher (2019)

Levene's statistics results were below 5% that is why data transformation for dynamic capabilities and leadership style was done because of homoscedasticity implying that the assumption of homoscedasticity of variance in this study was not supported (Table 4.22). The variability of competitive advantage (dependent variable) as shown in the results is not uniform across all the values of the independent variable hence necessary to subject the data to transformation before running regression analysis.

### 4.8.5 Test of Independence of Errors

Durbin-Watson was used to test for the presence of serial correlation among the residuals where the residuals or errors in prediction do not follow a pattern from case to case (Tabachnick & Fidel, 2007) and that the value of between 1.5 and 2.5 is deemed appropriate to show lack of serial correlation among the errors which in this study was 1.828 which was within the acceptable threshold.

**Table 4.23: Test of Independence of errors results**

| Variable | Durbin-Watson Test |
|---|---|
| Sensing capabilities | 1.828 |
| Seizing capabilities | 1.720 |
| Reconfiguration capabilities | 1.725 |
| Transformational leadership style | 1.684 |
| Transactional leadership style | 1.674 |
| Laissez-faire leadership style | 1.611 |
| Exploitation ambidexterity | 1.512 |
| Exploration ambidexterity | 1.577 |

**Source:** Researcher (2019)

Results showed that serial correlation range for laissez-faire and sensing capabilities was 1.611 to 1.828 respectively from lowest to the highest (Table 4.23).

## 4.9 Correlation Analysis Results

The purpose of conducting correlation analysis was to measure the possibility of any existing linear relationship between the dependent variable and the other variables through determining the magnitude and direction of the possible relationships considering that both variables are at interval level of measurement and the data is parametric in nature. Correlation is statistically significant at .05 levels if *p*-values are .05 and are not statistically significant if *p*-values are more than .05. The correlation strengths were interpreted using Cohen (1988) decision rules where r-values from .1 to .3 indicate weak correlation .31 to .5 moderate correlation strength and greater than .5 a strong correlation between the variables.

**Table 4.24: Correlation Analysis Results**

| Items | CA | DC1 | DC2 | DC3 | LS1 | LS2 | LS3 | OA1 | OA2 |
|---|---|---|---|---|---|---|---|---|---|
| Competitive advantage | 1 | | | | | | | | |
| Sensing capabilities | .534** | 1 | | | | | | | |
| Seizing capabilities | .414** | .380** | 1 | | | | | | |
| Reconfiguration capabilities | .411** | .403** | .415** | 1 | | | | | |
| Transformational leadership style | .352** | .397** | .309** | .436** | 1 | | | | |
| Transactional leadership style | .329** | .376** | .220** | .318** | .273** | 1 | | | |
| Laissez-faire leadership style | .270** | .326** | .213** | .257** | .415** | .265** | 1 | | |
| Exploitation ambidexterity | .119* | .060 | .218** | .265** | .146** | .212** | .001 | 1 | |
| Exploration ambidexterity | .335** | .256** | .261** | .439** | .296** | .251** | .144** | .513** | 1 |

*. Correlation is significant at the .05 level (2-tailed).
**.Correlation is significant at the .01 level (2-tailed)

**Source:** Researcher (2019)

Pearson correlation coefficient was used to measure the relationships between the variables (Hair *et al.*, 2013 and Field 2009) as shown in Table 4.24. Results showed that the relationship between sensing capabilities and competitive advantage is positive and significant (.534, *p*-value = .01) which suggests that there is 53% chance that sensing capabilities will increase competitive advantage. These results also show that seizing capabilities is positive and significant (.414, *p*-value = .01) implying that seizing capabilities will increase 41.4% of competitive advantage. Reconfiguration capabilities is positive and significant (.411, *p*-value = .01) showing that 41.1% of reconfiguration will lead to competitive advantage (Table 4.24).

It is also evident that transformational leadership style is positive and significant (.352, *p*-value = .01); transactional leadership style (.329, *p*-value = .01) and laissez faire (.270, *p*-value = .01) implying that all leadership style components will increase

35.2%, 32.9% and 27.0% respectively to competitive advantage. Exploitation ambidexterity has a positive and insignificant results (.119, $p$ = .05) showing that it accounts for 11.9% of competitive advantage while exploration ambidexterity (.335, p-value = .01) implying that exploration ambidexterity was expected to increase 33.5% of competitive advantage.

### 4.10 Hypothesis Testing

The regression was undertaken in two blocks (2 and 4 steps respectively), to determine both the direct and conditional relationship between the independent and dependent variables. This section is classified in terms of direct and indirect hypothesis testing where direct hypothesis applies to the first three hypotheses: sensing, seizing and reconfiguration on competitive advantage. The fourth was the mediation effect of leadership style on the relationship between sensing, seizing and reconfiguration capabilities on competitive. The indirect hypothesis testing is about moderation and the moderated mediation hypothesis. In model I the control variables were entered that is the age and size of the firm. In model II the independent variables (sensing, seizing and reconfiguration capabilities) were entered. In model III, the mediation was introduced then in model IV moderator and finally moderated mediation.

#### 4.10.1 Testing Effects of Control Variables of the Study

This was done to know how the controls affected the dependent variable in comparison with the direct effects. The findings showed that 2.1% variation of competitive advantage was predicted by firms' size and age ($R^2$ = .021) with joint prediction significant ($p$ <.010). It is also evident (Table 4.25) that age of the firm significantly affects competitive advantage ($p$ = .010) while size of the firm not significant ($p$ = .25).

**Table 4.25: Control variables results**

| Model | Unstandardized Coefficients | | Standardized Coefficients | | |
|---|---|---|---|---|---|
| **Variables** | **B** | **Std. Error** | **β** | **t** | **Sig.** |
| (Constant) | 4.23 | .065 | | 65.20 | .000 |
| Size of the firm | -.03 | .027 | -.071 | -1.15 | .250 |
| Age of the firm | .06 | .022 | .161 | 2.61 | .010 |
| **Model summary statistics** | | | | | |
| R | .145[a] | | | | |
| R Square | .021 | | | | |
| Adjusted R-Square | .015 | | | | |
| Std. Error of the Estimate | .408 | | | | |
| R-Square Change | .021 | | | | |
| F-change | 3.403 | | | | |
| Sig. F Change | .034 | | | | |
| Durbin Watson | 1.597 | | | | |

**Dependent Variable**: Competitive Advantage

**Source:** Researcher (2019)

Their joint prediction was significant (F value of 3.403, $\rho<.01$). Age of the firm significantly influenced competitive advantage ($\beta = .161$ and p-value = .010) while size of the firm was not significant ($\beta = -.071$, $p = .250$). It is worth noting also that these were only control variables and they needed not be causal hence their coefficients generally do not have a causal interpretation to the study.

### 4.10.2 Testing $H_{01a} – H_{01c}$

A regression test to determine the effects of both the control and the independent variables (direct effect) was done and the findings revealed that 36.0% variation of competitive advantage is predicted by sensing, seizing and reconfiguration ($R^2 = 36.0$).

**Table 4.26: Testing $H_{01a}$ – $H_{01c}$ results**

| Model | Unstandardized coefficients | | Standardized coefficients | | |
|---|---|---|---|---|---|
| **Variables** | **B** | **Std. Error** | **β** | **t** | **Sig.** |
| (Constant) | 1.176 | .253 | | 4.648 | .000 |
| Size of the firm | .007 | .022 | .016 | .314 | .754 |
| Age of the firm | -.003 | .019 | -.008 | -.150 | .881 |
| Sensing capabilities | .462 | .061 | .392 | 7.594 | .000 |
| Seizing capabilities | .125 | .034 | .194 | 3.653 | .000 |
| Reconfiguration capabilities | .146 | .044 | .174 | 3.323 | .001 |
| R | .600[a] | | | | |
| R Square | .360 | | | | |
| Adjusted R Square | .350 | | | | |
| Std. Error of the Estimate | .332 | | | | |
| R Square Change | .360 | | | | |
| F Change | 35.272 | | | | |
| Sig. F Change | .000 | | | | |
| Durbin Watson | 1.908 | | | | |

a. Dependent Variable: Competitive Advantage
b. Predictors: (Constant), age of the firm, size of the firm, sensing capabilities, seizing capabilities, reconfiguration capabilities,

**Source:** Researcher (2019)

The results show that all the three variables:- sensing capabilities (β=.392, p<.000), seizing capabilities (β=.194, p<.000) and reconfiguration capabilities (β=.174, p<.001); have significant effect on competitive advantage (Table 4.26). Their joint prediction was significant as shown by F-change (35.27), *p* (.000) and Durbin Watson (1.908). The variables combined contributed 36% ($R^2$ =.360) of the variance in competitive advantage which is an improvement from the first set of control variables 'contribution of 2.1% ($\Delta R^2$ = .021).

$H_{01a}$ stated that sensing capabilities had no significant effect on competitive advantage but findings in the table showed that sensing capabilities had coefficients of estimate which was positive and significant ($\beta_{1a}$ = .392, *p*-value = .000) which is less than (.05) implying that there was .392 unit increase in competitive advantage for each unit increase in sensing capabilities. This therefore led to null hypothesis being rejected

and concluded that sensing capabilities had a significant effect on competitive advantage.

$H_{01b}$ stated that seizing capabilities had no significant effect on competitive advantage. The study findings showed that seizing capabilities had a positive and significant effect on competitive advantage based on the $\beta_{1b} = .194$ with a *p*-value of .000 which is less than (.05) implying that seizing capabilities positively and significantly affect competitive advantage hence null hypothesis was rejected.

$H_{01c}$ stated that reconfiguration capabilities had no significant effect on competitive advantage and the findings showed that reconfiguration capabilities had coefficients of estimates which were positive and significant ($\beta_{1c}= .174$; p-value = .001) which is less than (.05) thus null hypothesis rejected confirming that reconfiguration capabilities had a positive and significant effect on competitive advantage.

Dynamic capabilities had no significant effect on competitive advantage ($H_{01d}$) and results showed that dynamic capabilities had coefficients of estimate which was positive and significant ($\beta_1 = .535$, *p*-value = .000) and also less than (.05) implying that there was .535 unit increase in competitive advantage for each unit increase in dynamic capabilities (Table 4.27). The results also showed that there is F change of 42.71 and $R^2$ of 28.9% and Durbin Watson in the right range that is 1.877. The test of dynamic capabilities on competitive advantage aided the other tests of mediation, moderation and moderated-mediation.

**Table 4.27: Testing $H_{01d}$ results**

| Model | Unstandardized Coefficients | | Standardized Coefficients | | |
|---|---|---|---|---|---|
| **Variables** | **B** | **Std. Error** | **β** | **t** | **Sig.** |
| (Constant) | 2.102 | .203 | | 10.349 | .000 |
| Size of the firm | -.007 | .023 | -.016 | -.311 | .756 |
| Age of the firm | .005 | .020 | .013 | .231 | .817 |
| Dynamic capabilities | .134 | .012 | .535 | 10.899 | .000 |

| **Model Summary statistics** | |
|---|---|
| R | .538[a] |
| R Square | .289 |
| Adjusted R Square | .282 |
| Std. Error of the Estimate | .349 |
| R Square Change | .289 |
| F Change | 42.708 |
| Sig. F Change | .000 |
| Durbin Watson | 1.877 |

a. Dependent Variable: Competitive Advantage
b. Predictors: (Constant), Dynamic capabilities, Size of the firm, Age of the firm

**Source:** Researcher (2019)

### 4.10.3 Testing $H_{02a}$ - $H_{02c}$

$H_{02a}$ stated that transformational leadership style has no mediating effect on the relationship between sensing capabilities and competitive advantage. The first step in this case was to determine whether sensing capabilities had a relationship with competitive advantage. The study findings (Table 4.28) showed that the control variables were insignificant because of the p>.05.

There was mediating effect of transformational leadership style on the relationship between sensing capabilities and competitive advantage (LLCI = .03; ULCI = .13) and by also calculating the product of $a_1$ x $b_1$ (.38 x .17 = .064) showed that the analysis was positive and had non-zero hence complementary mediation. $H_{02a}$ was therefore rejected. There was an increase in $R^2$ also from .17 (17%) to .31 (31%) as well as F value from 21.23 to 35.29 then 42.16 with a p-value of .00 implying that

transformational leadership style mediates the relationship between sensing capabilities and competitive advantage.

**Table 4.28: Testing $H_{02a}$ results**

| | $a_1 = M_1$ | | $b_1 = M_2$ | | Total Effect = $M_3$ | |
|---|---|---|---|---|---|---|
| **Variables** | **β** | **p-value** | **β** | **p-value** | **β** | **p-value** |
| Size of the firm | -.12 | .05 | .03 | .64 | .01 | .92 |
| Age of the firm | .04 | .38 | .02 | .65 | .03 | .54 |
| Sensing capabilities | .38 | .00 | .46 | .00 | .53 | .00 |
| Transformational leadership style | - | - | .17 | .00 | | |
| $R^2$ | .17 | | .31 | | .29 | |
| F | 21.23*** | | 35.29*** | | 42.16*** | |
| Mediation = $a_1$ x $b_1$ = .38 x .17 = **.064;** CI = .03,.13 | | | | | | |

*** p<.001, Dependent variable: competitive advantage

**Source:** Researcher (2019)

The results of total effect (β=.53, p<.00) and direct effect (β=.46, p<.00) plus indirect effect (β=.064, p<.00) indicated that sensing capabilities had a significant relationship with competitive advantage but when the mediator (transformational leadership style) was introduced then there was an increase on the relationship between sensing capabilities and competitive advantage.

$H_{02b}$ of the study stated that transformational leadership style has no mediating effect on the relationship between seizing capabilities and competitive advantage. Table 4.29 results showed that there was mediating effect of transformational leadership style on the relationship between seizing capabilities and competitive advantage (LLCI = .04; ULCI = .14) implying that transformational leadership style mediates the relationship between seizing capabilities and competitive advantage thus rejecting of the hypothesis. There is an also an increase in $R^2$ from .12 (12%) to .23 (23%) as well as F value from 13.82 to 23.15 with a p-value of .00.

**Table 4.29: Testing $H_{02b}$ results**

| | $a_1 = M_1$ | | $b_2 = M_2$ | | Total Effect = $M_3$ | |
|---|---|---|---|---|---|---|
| **Variables** | **β** | **p-value** | **β** | **p-value** | **β** | **p-value** |
| Size of the firm | -.17 | .01 | -.02 | .75 | -.06 | .32 |
| Age of the firm | .05 | .36 | .03 | .58 | .04 | .45 |
| Seizing capabilities | .31 | .00 | .33 | .00 | .41 | .00 |
| Transformational leadership style | - | - | .24 | .00 | | |
| $R^2$ | .12 | | .23 | | .17 | |
| F | 13.82*** | | 23.15*** | | 22.23*** | |
| Mediation $a_1$ x $b_1$ = .31 x .24 = **.08;** CI = .04, .14 | | | | | | |

***p<.001; Dependent variable: competitive advantage

**Source:** Researcher (2019)

$H_{02c}$ stated that transformational leadership style has no mediating effect on the relationship between reconfiguration capabilities and competitive advantage. The findings (Table 4.30) showed that there was mediating effect of transformational leadership style on the relationship between reconfiguration capabilities and competitive advantage (LLCI = .04; ULCI = .15) implying that transformational leadership style mediates the relationship between reconfiguration capabilities and competitive advantage leading to rejecting of the hypothesis. Results also showed that there is an increase in $R^2$ from .20 (20%) to .22 (22%) as well as F value from 26.74 to 21.59 with a *p*-value of .00.

**Table 4.30: Testing $H_{02c}$ results**

| | $a_1 = M_1$ | | $b_2 = M_2$ | | Total Effect = $M_3$ | |
|---|---|---|---|---|---|---|
| **Variables** | **β** | **p-value** | **β** | **p-value** | **β** | **p-value** |
| Size of the firm | -.12 | .04 | .01 | .90 | -.02 | .78 |
| Age of the firm | .09 | .04 | .08 | .08 | .10 | .04 |
| Reconfiguration capabilities | .42 | .00 | .32 | .00 | .21 | .00 |
| Transformational leadership style | - | - | .24 | .00 | | |
| $R^2$ | .20 | | .22 | | .18 | |
| F | 26.74*** | | 21.59*** | | 23.27*** | |
| Mediation $a_1$ x $b_1$ = .42 x .21 = **.09;** CI = .04, .15 | | | | | | |

***p<.001; Dependent variable: competitive advantage

**Source:** Researcher (2019)

### 4.10.4 Testing $H_{03a}$ – $H_{03c}$

$H_{03a}$ stated that transactional leadership style has no mediating effect on the relationship between sensing capabilities and competitive advantage and the findings in Table 4.31 confirmed that there was mediating effect of transactional leadership style on the relationship between sensing capabilities and competitive advantage (LLCI = .02; ULCI = .10) hence rejecting of the hypothesis. Results also showed that there was an increase in $R^2$ from .07 (7%) to .23 (23%) as well as F value from 7.63 to 23.90 with a *p*-value of .00.

**Table 4.31: Testing $H_{03a}$ results**

| | $a_1 = M_1$ | | $b_2 = M_2$ | | Total Effect = $M_3$ | |
|---|---|---|---|---|---|---|
| **Variables** | **β** | **p-value** | **β** | **p-value** | **β** | **p-value** |
| Size of the firm | .02 | .78 | .00 | .96 | .01 | .92 |
| Age of the firm | .11 | .04 | .01 | .78 | .03 | .54 |
| Sensing capabilities | .36 | .00 | .48 | .00 | .53 | .00 |
| Transactional leadership style | - | - | .15 | .00 | | |
| $R^2$ | .07 | .00 | .23 | | .18 | |
| F | 7.63*** | .00 | 23.90*** | | 22.23*** | |
| Mediation $a_1$ x $b_1$ = .36 x .15 = **.05;** CI = .02,.10 | | | | | | |

*** p<.001; Dependent variable: Competitive Advantage

**Source:** Researcher (2019)

$H_{03b}$ of the study stated that transactional leadership style has no mediating effect on the relationship between seizing capabilities and competitive advantage and the results in Table 4.32 showed that there was mediating effect of transactional leadership style on the relationship between seizing capabilities and competitive advantage (LLCI = .01; ULCI = .07) implying that transactional leadership style mediates the relationship between seizing capabilities and competitive advantage thus rejecting of the hypothesis. Results also showed that there is an increase in $R^2$ from .16 (16%) to .31 (31%) as well as F value from 19.59 to 42.16 with a *p*-value of .00.

**Table 4.32: Testing $H_{03b}$ results**

| | $a_1 = M_1$ | | $b_2 = M_2$ | | Total Effect = $M_3$ | |
|---|---|---|---|---|---|---|
| **Variables** | **β** | **p-value** | **β** | **p-value** | **β** | **p-value** |
| Size of the firm | -.03 | .09 | -.05 | .36 | -.06 | .32 |
| Age of the firm | .14 | .24 | .01 | .92 | .04 | .45 |
| Seizing capabilities | .18 | .00 | .36 | .00 | .41 | .00 |
| Transactional leadership style | - | - | .25 | .00 | | |
| $R^2$ | .16 | .00 | .31 | | .29 | |
| F | 19.59*** | .00 | 34.40*** | | 42.16*** | |
| Mediation $a_1 \times b_1$ = .18 x .25 = **.045;** CI = .01,.10 | | | | | | |

*** p<.001; Dependent variable: Competitive Advantage

**Source:** Researcher (2019)

$H_{03c}$ of the study stated that transactional leadership style has no mediating effect on the relationship between reconfiguration capabilities and competitive advantage and the findings in Table 4.33 showed that there was mediating effect of transactional leadership style on the relationship between reconfiguration capabilities and competitive advantage (LLCI = .03; ULCI = .12).

**Table 4.33: Testing $H_{03c}$ results**

| | $a_1 = M_1$ | | $b_1 = M_2$ | | Total Effect = $M_3$ | |
|---|---|---|---|---|---|---|
| **Variables** | **B** | **p-value** | **β** | **p-value** | **β** | **p-value** |
| Size of the firm | .01 | .91 | -.02 | .75 | -.02 | .78 |
| Age of the firm | .15 | .00 | .07 | .15 | .10 | .04 |
| Reconfiguration capabilities | .31 | .00 | .34 | .00 | .40 | .00 |
| Transactional leadership style | - | - | .21 | .00 | | |
| $R^{2..}$ | .13 | .00 | .22 | | .18 | |
| F | 16.00*** | .00 | 21.92*** | | 23.27*** | |
| Mediation $a_1 \times b_1$ = .31 x .21 = **.06;** CI = .03, .12 | | | | | | |

***p<.001; Dependent variable: Competitive Advantage

**Source:** Researcher (2019)

This implied that transactional leadership style mediates the relationship between reconfiguration capabilities and competitive advantage leading to rejecting the

hypothesis. Results also showed that there is an increase in R2 from .13 (13%) to .22 (22%) as well as F value from 16.00 to 21.92 with a p-value of .00.

### 4.10.5 Testing $H_{04a}$– $H_{04c}$

$H_{04a}$ stated that laissez-faire leadership style has no mediating effect on the relationship between sensing capabilities and competitive advantage. The findings (Table 4.34) showed that there was no mediating effect of laissez-faire leadership style on the relationship between sensing capabilities and competitive advantage (LLCI = -.00; ULCI = .08) though there was an increase in $R^2$ from .11 (11%) to .30 (30%) as well as F value from 12.85 to 33.17 with a *p*-value of .00 implying that laissez-faire leadership style does not mediate the relationship between sensing capabilities and competitive advantage leading to not rejecting the hypothesis.

**Table 4.34: Testing $H_{04a}$ results**

| | $a_1 = M_1$ | | $b_2 = M_2$ | | Total Effect = $M_3$ | |
|---|---|---|---|---|---|---|
| **Variables** | **β** | **p-value** | **β** | **p-value** | **β** | **p-value** |
| Size of the firm | .05 | .41 | .01 | .84 | .01 | .92 |
| Age of the firm | .01 | .93 | .03 | .83 | .03 | .54 |
| Sensing capabilities | -.33 | .00 | .49 | .00 | .53 | .00 |
| Laissez-faire leadership style | - | - | -.11 | .03 | | |
| $R^{2..}$ | .11 | .00 | .30 | | .29 | |
| F | 12.85*** | .00 | 33.17*** | | 42.16*** | |
| Mediation $a_1$ x $b_1$ = -.33 x -.11 = **.04**; CI = -.00, .08 | | | | | | |

***p<.001; Dependent variable: Competitive Advantage

**Source:** Researcher (2019)

$H_{04b}$ stated that laissez-faire leadership style has no mediating effect on the relationship between seizing capabilities and competitive advantage and the findings in Table 4.35 confirmed that laissez-faire leadership style has mediating effect on the relationship between seizing capabilities and competitive advantage (LLCI = .01; ULCI = .08). There is an increase in $R^2$ from .05 (5%) to .21 (21%) as well as F value

from 5.83 to 20.63 with a *p*-value of .00 implying that laissez-faire leadership style mediates the relationship between seizing capabilities and competitive advantage thus rejecting of the hypothesis.

**Table 4.35: Testing $H_{04b}$ results**

| | **$a_1 = M_1$** | | **$b_1 = M_2$** | | **Total Effect = $M_3$** | |
|---|---|---|---|---|---|---|
| **Variables** | **β** | **p-value** | **β** | **p-value** | **β** | **p-value** |
| Size of the firm | .09 | .15 | -.04 | .47 | -.06 | .32 |
| Age of the firm | -.01 | .86 | .04 | .46 | .04 | .45 |
| Seizing capabilities | -.22 | .00 | .37 | .00 | .41 | .00 |
| Laissez-faire leadership style | - | - | -.19 | .00 | | |
| $R^{2..}$ | .05 | .00 | .21 | | .18 | |
| F | 5.83*** | .00 | 20.63*** | | 22.23*** | |
| Mediation a1 x b1 = -.22 x -.19 = **.04;** CI = .01, .08 | | | | | | |

***p<.001; Dependent variable: Competitive Advantage

**Source:** Researcher (2019)

$H_{04c}$ stated that laissez-faire leadership style has no mediating effect on the relationship between reconfiguration capabilities and competitive advantage. The findings in Table 4.36 showed that there was mediating effect of transactional leadership style on the relationship between reconfiguration capabilities and competitive advantage (LLCI = .01; ULCI = .09) with an increase in $R^2$ from .07 (7%) to .21 (21%) as well as F value from 7.85 to 20.78 with a *p*-value of .00 implying that transactional leadership style mediates the relationship between reconfiguration capabilities and competitive advantage hence rejecting of the hypothesis.

**Table 4.36: Testing $H_{04c}$ results**

| | $a_1 = M_1$ | | $b_2 = M_2$ | | Total Effect = $M_3$ | |
|---|---|---|---|---|---|---|
| **Variables** | **β** | **p-value** | **β** | **p-value** | **β** | **p-value** |
| Size of the firm | .07 | .31 | -.01 | .92 | -.02 | .78 |
| Age of the firm | -.04 | .44 | .10 | .05 | .10 | .04 |
| Reconfiguration capabilities | -.25 | .00 | .36 | .00 | .40 | .00 |
| Laissez-faire leadership style | - | - | -.17 | .00 | | |
| $R^{2..}$ | .07 | .00 | .21 | | .18 | |
| F | 7.85*** | .00 | 20.78*** | | 23.27*** | |
| Mediation $a_1$ x $b_1$ = -.25 x -.19 = **.043;** CI = .01,.09 | | | | | | |

***p<.001; Dependent variable: Competitive Advantage

**Source:** Researcher (2019)

### 4.10.6 Testing $H_{05}$

$H_{05}$ stated that organizational ambidexterity has no moderating effect on the relationship between dynamic capabilities and competitive advantage. The findings (Table 4.37) confirmed that all control variables were insignificant that is size of the firm (β = .00, p = .99) while age of the firm (β = .01. p = .91). Furthermore, dynamic capabilities had positive and significant effect (β = .52, p=.00) at the same time organizational ambidexterity had a positive and significant effect on the relationship between dynamic capabilities and competitive advantage (β = .19, p < .001).

The model explains 33% of the variance between dynamic capabilities and competitive advantage ($R^2$ = 33%; F = 38.51; LLCI = .00, ULCI = .05) and the regression coefficient of the interaction term of dynamic capabilities and competitive advantage is (β=.12, p-value = .00). The regression coefficient suggests that the interaction between dynamic capabilities and organizational ambidexterity exerts a positive and significant moderating effect of organizational ambidexterity on the relationship between dynamic capabilities and competitive advantage hence $H_{05}$ hypothesis rejected.

**Table 4.37: Testing $H_{05}$ results**

| | Model 1 | | Model 2 | |
|---|---|---|---|---|
| **Variables** | **β** | **p-value** | **β** | **p-value** |
| Size of the firm | -.03 | .57 | -.00 | .99 |
| Age of the firm | .11 | .04 | -.01 | .91 |
| Dynamic capabilities | .31 | .00 | .52 | .00 |
| Organizational ambidexterity | .19 | .001 | | |
| Dynamic capabilities x organizational ambidexterity | .12 | .00 | | |
| $R^{2..}$ | .20 | .00 | .33 | |
| F | 15.85*** | .00 | 38.51*** | |
| CI = .00, .05 | | | | |

*** p<.001

**Source:** Researcher (2019)

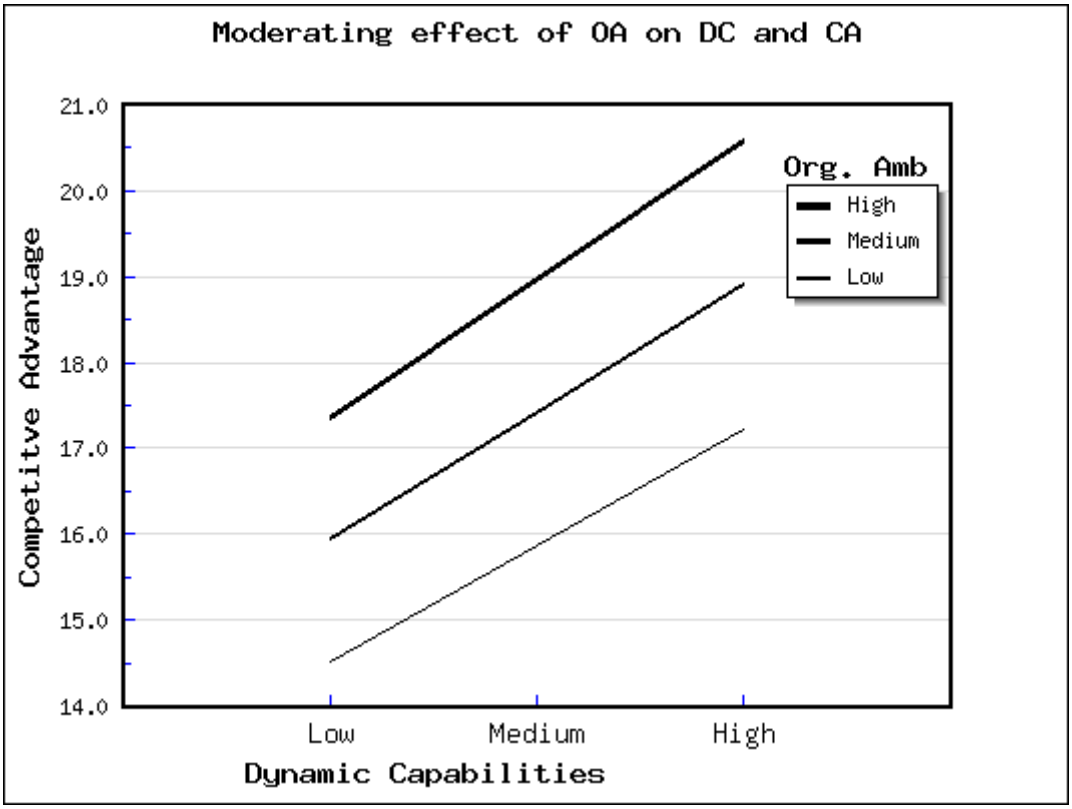
In order to better understand the nature of the interaction between organizational ambidexterity, dynamic capabilities and competitive advantage, the moderated results are presented on a moderation graph (West & Aiken, 2003) who proposed that it is insufficient to conclude if interaction exists without probing the nature of that interaction at different levels of the moderator.

Process macro analysis was done using model 7 where dynamic capabilities and organizational ambidexterity accounted for a significant amount of variance in competitive advantage (R2 = 33%, F = 38.51, p<.00). The interaction between dynamic capabilities and control variables were added to the regression model and it accounted for a significant proportion of the variance competitive advantage ($AR^2$ = .20, F = 15.85, p <.001).

The significance of the regression coefficient of organizational ambidexterity was assessed at low, medium and high levels of both dynamic capabilities and competitive advantage. The slopes in the Figure 4.3 showed that, at high levels of organizational ambidexterity, dynamic capabilities were associated with stronger and significant

competitive advantage as compared to when it is with medium and low. The analysis revealed effect of dynamic capabilities on competitive advantage has stronger significance on competitive advantage at higher levels of organizational ambidexterity than at the lower levels of the same and that low levels of dynamic capabilities showed that high organizational ambidexterity gives bigger moderating effect on the relationship than with the low level.

Results further reveals that at low levels of organizational ambidexterity, dynamic capabilities have low effects on competitive advantage whereas at high levels of organizational ambidexterity the effect of dynamic capabilities becomes higher. Slopes in the figure indicate that, at low levels of organizational ambidexterity, increasing dynamic capabilities was associated with lower but significant competitive advantage as compared to when it is with medium and high organizational ambidexterity hence the need for organizations with low organizational ambidexterity to invest more on dynamic capabilities for competitive advantage.




**Legend**: ORGAMB = Organizational Ambidexterity, LS = Leadership Style, DC = Dynamic Capabilities, CA = Competitive Advantage

**Figure 4.3: Moderation of Organizational Ambidexterity on the relationship between Dynamic Capabilities and Competitive Advantage**

**Source:** Researcher (2019)

### 4.10.7 Testing $H_{06}$

The purpose for conducting a test for moderated mediation effect was to address $H_{06}$ which states that organizational ambidexterity has no moderating effect on the relationship between dynamic capabilities and competitive advantage through leadership style. Hayes (2017) posits that the test for moderated mediation helps to reveal the contingent nature of the effect of the independent variable (dynamic capabilities) on the dependent variable (competitive advantage) through the mediator (leadership style) conditioned by changes in the moderator (organizational ambidexterity). Table 4.38 showed the results as per Hayes (2013; 2017) Model 7 and

the results confirmed that there is moderated mediation (CI = 000; 046) at the lower level (CI = 001; .070) but no moderated mediation above the mean (CI = -.002; .123).

**Table 4.38: Testing $H_{06}$ results**

| **Mean Level** | **Effect** | **Standard Error** | **LLCI** | **ULCI** |
|---|---|---|---|---|
| -1 | .021 | .016 | .001 | .070 |
| 0 | .034 | .023 | .000 | .089 |
| +1 | .048 | .033 | -.002 | .123 |
| **Index of** | **Moderated** | **Mediation** | | |
| **INDEX** | .014 | .012 | .000 | .046 |

**Source:** Researcher (2019)

Further explanation on the moderated mediation is explained using Figure 4.4 that revealed the effect of dynamic capabilities on competitive advantage giving stronger significance on competitive advantage at higher levels of organizational ambidexterity than at the lower levels of the same and that low levels of dynamic capabilities showed that high organizational ambidexterity had a bigger moderating effect on the relationship than with the low level. It further reveals that at low levels of organizational ambidexterity, dynamic capabilities have low effects on competitive advantage whereas at high levels of organizational ambidexterity the effect of dynamic capabilities becomes higher. The slopes in the figure indicate that, at low levels of organizational ambidexterity, increasing dynamic capabilities was associated with lower but significant competitive advantage as compared to when it is with medium and high organizational ambidexterity

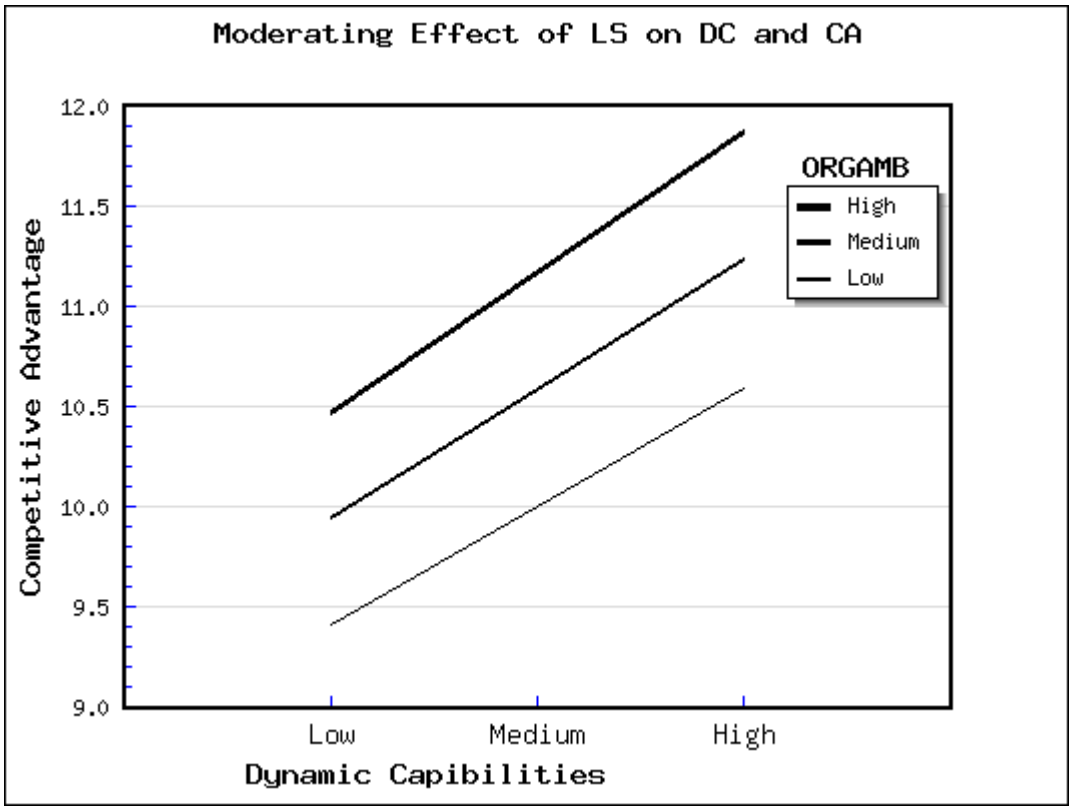



**Figure 4.4: Moderated-Mediation results**

**Source:** Researcher (2019)

### 4.11 Summary of Regression Analysis Results

This section tabulates all hypotheses that guided the study by showing the beta values for each of the test that was carried out in respect to each hypothesis and the corresponding values of significance, $R^2$, F-change and confidence intervals. The hierarchical multiple regression results also revealed an increase in $R^2$ with the addition of the blocks of variables. The controls contributed to an $R^2$ change of 2.1% but when the direct variable (dynamic capabilities) was introduced, the $R^2$ increased from 2.1% to 28.9%. Results also indicated that three variables of dynamic capabilities (sensing, seizing and reconfiguration) showed an increase in $R^2$ increased to 36.0% (R-square change of 42.9%).

**Table 4.39: Summary of Hypothesis Results**

| $H_0$ | Hypotheses Statement | Beta | *P* | $R^2$ | FΔ | Decision |
|---|---|---|---|---|---|---|
| $H_{01a}$ | There is no significant effect of sensing capabilities on competitive advantage | .392 | .000 | .360 | 35.272 | Reject |
| $H_{01b}$ | There is no significant effect of seizing capabilities on competitive advantage | .194 | .000 | .360 | 35.272 | Reject |
| $H_{01c}$ | There is no significant effect of reconfiguration capabilities on competitive advantage | .174 | .001 | .360 | 32.272 | Reject |
| $H_{01d}$ | There is no significant effect of dynamic capabilities on competitive advantage | .535 | .000 | .289 | 42.708 | Reject |
| **$H_0$** | **Hypothesis Statement** | **LLCI** | **ULCI** | **$R^2$** | **FΔ** | **Decision** |
| $H_{02a}$ | There is no significant mediating effect of transformational leadership style on the relationship between sensing capabilities and competitive advantage | .03 | .13 | .17 | 21.23 | Reject |
| $H_{02b}$ | There is no significant mediating effect of transformational leadership style on the relationship between seizing capabilities and competitive advantage | .04 | .14 | .12 | 13.82 | Reject |
| $H_{02c}$ | There is no significant mediating effect of transformational leadership style on the relationship between reconfiguration capabilities and competitive advantage | .04 | .15 | .20 | 26.74 | Reject |
| $H_{03a}$ | There is no significant mediating effect of transactional leadership style on the relationship between sensing capabilities and competitive advantage | .02 | .10 | .07 | 7.63 | Reject |
| $H_{03b}$ | There is no significant mediating effect of transactional leadership style on the relationship between seizing capabilities and competitive advantage | .01 | .10 | .16 | 19.59 | Reject |
| $H_{03c}$ | There is no significant mediating effect of transactional leadership style on the relationship between reconfiguration capabilities and competitive advantage | .03 | .12 | .13 | 16.00 | Reject |
| $H_{04a}$ | There is no significant mediating effect of laissez-faire leadership style on the relationship between sensing capabilities and competitive advantage | -.00 | .08 | .11 | 12.85 | Fail to reject |
| $H_{04b}$ | There is no significant mediating effect of laissez-faire leadership style on the relationship between seizing capabilities and competitive advantage | .01 | .08 | .05 | 5.83 | Reject |
| $H_{04c}$ | There is no significant mediating effect of laissez-faire leadership style on the relationship between reconfiguration capabilities and competitive advantage | .01 | .09 | .07 | 7.85 | Reject |
| $H_{05}$ | There is no significant moderating effect of organizational ambidexterity on the relationship between dynamic capabilities and competitive advantage | .00 | .05 | β=12 | - | Reject |
| $H_{06}$ | There is no significant moderated mediation effect of organizational and leadership on the relationship between dynamic capabilities and competitive advantage | .00 | .05 | - | - | Reject |

**Source:** Researcher (2019)

## 4.12 Discussion for the Research Findings

Hypotheses of the study were tested at 5% level of significance and the beta coefficients indicated the slope of the model that relates the independent variables to the dependent variable (Dunn, 2001). The discussions of the findings are based on both literature and empirical results of hypothesis presented in chapter one which provides the basis for explanation as to why the hypothesis were rejected or not.

### 4.12.1 Effect of Sensing Capabilities on Competitive Advantage

Objective $1_a$ of the study was to assess the effect of sensing capabilities on competitive advantage and the results showed that there is positive and statistically significant effect of sensing capabilities on competitive advantage ($\beta = .392$, $p = .000$) implying that sensing capabilities which comprise constant scanning, searching, identifying opportunities, threats, changes and also competitor's possible responses to the focal enterprise actions in firms (Li and Liu, 2014) affect competitive advantage. Cao, (2011) studied similar dimensions as Teece, (2007) which are sensing (shaping) opportunities and threats to firm's scanning, filtering, monitoring, assessing, creating, interpreting, figuring out, learning and calibrating business opportunities and threat which involves a deliberate investment in continuous search for internal and external information about customer needs, technological shifts and opportunities, supplier and competitor responses, structural evolution in the market among others.

Hypotheses test results indicated that sensing capabilities was a predictor of competitive advantage corroborating the findings by Osisioma *et al*, (2016), Li & Liu (2014), Woldesenbet, *et al* (2012), Karagouni *et al*, 2012 and Wu (2010) among other studies. Firms that display the propensity to sense opportunities and threats so as to make timely decisions in implementing strategic decisions and changes efficiently end up pursuing the right direction in order to achieve competitive advantage (Li & Liu,

2014). A study by Wu (2010) on 253 Taiwanese firms found out that those firms that possess dynamic capabilities will enhance their competitive advantages in the market.

Sensing capabilities play a crucial part in identification and assessment of opportunities (Gathungu & Mwangi, 2012). This is also a tool for developing an organization which is skilful at learning, perceiving, and responding to market dynamics and that the capability of a firm to assess and apply external knowledge depends on previous related knowledge (Likoum *et al.,* 2018) thus previously acquired knowledge infers a capability to identify the worth of new information, integrate it and make use of it commercially in order for the organization to be competitive (Cohen & Levinthal, 1990a). This study further corroborated the findings of Woldesenbet *et al* (2012) that found out that firms apply sensing capabilities in their creative search to identify opportunities and threats, changing customer demands and the dynamic competition landscape. Rakthin *et al.,* 2016 postulate that sensing capability as a process and product innovation is the development of novel, appropriate, and unique products or services by a firm through openness to embracing new concepts, products, and procedures, firm's readiness to transform and adopt latest technology and market trends.

Market intelligence is required since product innovation process can be improved through market knowledge (Luca & Atuahene-Gima, 2007) hence sensing capability encourages firms to exert effort in acquiring market facts, operating on varying circumstances to outsmart competitors, creating and sustaining cordial relationships with staff and customers and also involving inner strengths in conformity with external environments (Desarbo *et al.,* 2005, Likoum *et al.,* 2018). Information about firm's customers, competitors, suppliers and other market factors makes up a treasured

portion of that firm's knowledge base and that knowledge is fundamental in the search of opportunities (Abubakar *et al.,* 2017, Nonaka, 2007) hence sensing capability can generate high market knowledge, which is speculated to be keen for any active capability (Teece, 2007, Teece, 2012). It is worth noting also that the tendency to procure external market information or an idea of customer desires, needs, and service procedures is identified as imperative for new innovation and competitive advantage (Johan and Anna, 2018, Rakthin *et al*., 2016) of the firm.

### 4.12.2 Effect of Seizing Capabilities on Competitive Advantage

Objective $1_b$ of the study was to examine the relationship between seizing capabilities and competitive advantage of manufacturing firms in Nairobi, Kenya which was hypothesized that there was no significant effect seizing capabilities on competitive advantage ($H_{01b}$). The findings showed that seizing capabilities had a positive and statistically significant effect on competitive advantage ($\beta = .194$, $p = .000$) implying that seizing capabilities which comprise of correcting decisions and executing them so that they simultaneously align with the enterprises' assets and strategic goals (Li & Liu, 2014) through capturing value from opportunities by mobilizing existing resources towards these new innovative goals (Teece, 2014).

Seizing capabilities are about pro-activeness, response to opportunities, appropriate approach for firms that are facing competition (Lumpkin & Dess, 2001), firm's ability to attend to products, processes or service opportunities, selection of business models and identifying talent to coordinate firm's functional activities (Cao, 2011) through creating, acquiring and sharing knowledge to respond to opportunities and threats from the operating environment (Eisenhardt & Martin, 2000; Verona & Ravasi, 2003). This is the firm's learning capability reflected by the ability to create internal

knowledge, to acquire external knowledge, and to assimilate internal and external knowledge through sharing for capability creation (acquisition, knowledge sharing and knowledge integration) that allows concrete benefiting from sensing hence enterprises need seizing, or decision-making capabilities (MacInerney-May 2012; Pavlou & El Sawy, 2011; Lichtenthaler, 2009; Jansen *et al*, 2008).

Cao, (2011) used seizing capability to refer to firm's ability to attend to products, process or service opportunities, selection of business models and identifying talent to coordinate firm's functional activities by making the correct decisions and executing them so that they simultaneously align with the enterprises' assets and strategic goals in order to maintain competitive advantage (Li & Liu, 2014). Organizations must mobilize their existing resources towards these new innovative goals (Teece, 2014) by being future oriented, have good management capabilities, ready to sometimes even cannibalize its own products so as to prosper over time (McGrath, 2001) in order to capture value from opportunities. Firms are expected to poses knowledge-acquisition capability because the capability to create knowledge internally may not be sufficient to cope with the challenges arising from changes in the operating environment (Lichtenthaler, 2009).

### 4.12.3 Effect of Reconfiguration Capabilities on Competitive Advantage

Objective $1_c$ was to establish the relationship between reconfiguration capabilities and competitive advantage of manufacturing firms in Nairobi, Kenya. The hypothesis was that there was no significant effect of reconfiguration capabilities on competitive advantage of manufacturing firms in Kenya. The study findings ($\beta$= .174, $p$= .001) supported this objective leading to null hypothesis being rejected thus agreeing with the reviewed literature on the effects of reconfiguration capabilities on competitive advantage where it involves organization's potential to generate capabilities to

integrate current capabilities (Lavie, 2006; Capron & Mitchell, 2009) that is creation and integration of internally or externally acquired capabilities.

This is the transformation of existing capabilities for example to change the form, shape, or appearance of capabilities existing within the firm (Teece, 2007) and redeployment or recombination of existing capabilities (Ahuja & Katila, 2004). Reconfiguration capabilities had a significant effect on firm performance as per the study carried out on the Indian SMEs (Batra *et al.*, 2015) that concluded that firms which reconfigured their resources according to the prevailing opportunities were more likely to succeed.

It is the ability to recombine both tangible and intangible assets so that they meet the demands of markets and technological changes (Li & Liu, 2014; O'Reilly & Tushman, 2008; Teece, 2007). While an enterprise competencies provide competitive advantage at a given time, the changing business environment calls for new competitive assets and thus new competencies (Li & Liu, 2014). This is true today as product and technology life cycles are shortening, becoming more interdisciplinary thus more demanding and that financial requirements are rapidly rising (Rese & Baier, 2011; Santamaria &Surocca, 2011). Reconfiguration and recombination of the firm's assets, processes and structures to match the shifting operating environment calls for business model redesigning, alignment and revamping of routines Cao, (2011) for sustained competitive advantage.

### 4.12.4 Effect of Dynamic capabilities on Competitive Advantage

Objective $1_d$ of the study was to determine the relationship between dynamic capabilities and competitive advantage of manufacturing firms in Nairobi, Kenya and was hypothesized that there was no significant effect of dynamic capabilities on

competitive advantage ($H_{01d}$). In line with the objective and the hypothesis postulated in the study, indeed findings indicated that dynamic capabilities ((β= .535, *p*= .000) significantly affect competitive advantage thus confirming past studies that assessed direct effect of dynamic capabilities and competitive advantage of the firm (Chukwumeka, 2018); Wu, 2010; Hou and Chien, 2010; Ogunkoya *et al.,* 2014).

Dynamic capabilities of the firm are the fundamental source of competitive advantage (Hou, 2010); are instrumental in determining the capacity of the firm to successfully implement actions that shall result in sustained competitive advantage (Leornard-Baton (1992) and that it is a critical determinant of firm's competitive advantage (Hou and Chien, 2010). It is paramount for managers and executives to evaluate internal and external costs of their products and services, gather market information, conduct market research to understand the needs and wishes of their customers, work on their production costs, forecast and evaluate the organizational performance so as to attain competitive advantage in their operational activities (Afonina, 2015).

Organizational performance is the extent to which an organization meets the needs of its stakeholders and also fulfills its own needs for survival which is of immense interest in the field of management and business research (Ofoegbu and Akanbi, 2012) facilitating the achievement of corporate strategic goals and mission & values (Cho *et al.*, 2012) through activities that are aimed at achieving, evaluating and fine tuning the ways to achieve the organizational goals and competitive advantage (Yap, 2012). Berghman *et al.,* (2012) posits that in highly competitive environments, the company's potential to develop products and introduce new technology enables firms to develop markets hence competitive advantage.

In Kenya, Onyanchu *et al.,* (2018) studied the effect of dynamic capabilities on firm performance of manufacturing firms in Nairobi, Kenya. Ngugi (2016) research on effect of dynamic capabilities on Commercial Bank of Africa confirmed that any firm's success entails aligning dynamic capabilities of the firm available resources to meet market needs and that these needs must generate competitiveness. Mwangi (2008) also studied effect of dynamic capabilities, competitive advantage and performance of independent Kenya's oil firms.

This study confirms previous studies that dynamic capabilities enhances competitive advantage of manufacturing firms in Kenya as shown by the prediction of 53.5% denoted by $R^2$ (.535) implying that prediction parameters contribute 53.5% of competitive advantage whereas random variations and other factors excluded from the study contributes 46.5% which is in line with Schilke (2014) whose findings indicated that competitive advantage and dynamic capabilities are positively correlated in moderately dynamic atmosphere as opposed to highly dynamic or stable atmosphere. This study focuses on organization's ability to recognized opportunity (sensing capability), create, acquire and share knowledge (seizing capability), and generate adequate varieties to accommodate the dynamism from the environment (reconfiguration capability) as responsible for competitive advantage of the firm.

### 4.12.5 The Mediating effect of Leadership Style on the relationship between Dynamic Capabilities and Competitive Advantage

Objective $2_a$ determined the mediating effect of transformational leadership style on the relationship between sensing capabilities and competitive advantage of manufacturing firms, Nairobi, Kenya. The study findings (LLCI = .03, ULCI = .13) supported the objective and the null hypothesis was rejected. Objective $2_b$ examined the mediating effect of transformational leadership style on the relationship between

dynamic capabilities and competitive advantage of manufacturing firms, Nairobi, Kenya. The study findings (LLCI = .04, ULCI = .14) supported the objective and the null hypothesis was rejected. Objective $2_c$ assessed the mediating effect of transformational leadership style on the relationship between dynamic capabilities and competitive advantage of manufacturing firms, Nairobi, Kenya.

The study findings (LLCI = .04, ULCI = .15) hence supporting the objective and null hypothesis being rejected. Literature suggests that transformational leadership has greater performance outcomes (Epitropaki and Martin, 2005) than transactional leadership, but Bass and his colleagues (2003) showed that the establishment of clear standards, expectations, and trust in the leader that occur in effective transactional leadership are needed as a pre-requisite for transformational leadership.

Objective $3_a$ determined the mediating effect of transactional leadership style on the relationship between sensing capabilities and competitive advantage of manufacturing firms, Nairobi, Kenya and the study findings were significant (LLCI = .02, ULCI = .10) hence supporting of the objective and null hypothesis being rejected. Objective $3_b$ examined the mediating effect of transactional leadership style on the relationship between seizing capabilities and competitive advantage of manufacturing firms, Nairobi, Kenya and the results were significant (LLCI = .01, ULCI = .10) leading to supporting of the objective and null hypothesis being rejected. Objective $3_c$ assessed the mediating effect of transactional leadership style on the relationship between reconfiguration capabilities and competitive advantage of manufacturing firms, Nairobi, Kenya and the results were significant (LLCI = .03, ULCI = .12) hence supporting of the objective and null hypothesis being rejected

Objective $4_a$ determined the mediating effect of laissez-faire leadership style on the relationship between sensing capabilities and competitive advantage of manufacturing firms, Nairobi, Kenya where the findings (LLCI = -.00, ULCI = .08) revealed that laissez-faire does not mediate the relationship between sensing capabilities and competitive advantage thus the objective not supported and null hypothesis not rejected. Objective $4_b$ examined the mediating effect of transactional leadership style on the relationship between seizing capabilities and competitive advantage of manufacturing firms, Nairobi, Kenya. The results showed that laissez-faire mediates the relationship between seizing capabilities and competitive advantage of manufacturing firms in Nairobi, Kenya (LLCI = .01, ULCI = .08) hence supporting the objective and null hypothesis being rejected. Objective $4_c$ assessed the mediating effect of transactional leadership style on the relationship between reconfiguration capabilities and competitive advantage of manufacturing firms, Nairobi, Kenya. The study findings were significant (LLCI = .01, ULCI = .09) hence supporting the objective and null hypothesis being rejected.

As a mediator, leadership styles modifies the form or strength of the relation between dynamic capabilities and competitive advantage (Aguinis, 2004; Aiken & West, 1991) so as to capture the dimensions of transformational, transactional and laissez-faire styles. The mediation model therefore was guided by the resource-based view's theoretical perspective (Barnery, 2010) that intangible resources interact with strategic posture to yield competitive advantage (Newbert, 2007) of the firm as leadership style plays a role in the complex and intangible net of relationships in a firm, which is difficult for outsiders to immediately observe and imitate (Panagopoulus & Avlonitis, 2010).

### 4.12.6 The Moderating Effect Organizational Ambidexterity on the Relationship between Dynamic Capabilities and Competitive Advantage

Objective 5 was to assess the moderating effect of organizational ambidexterity on the relationship between dynamic capabilities and competitive advantage of manufacturing firms in Nairobi, Kenya and hypothesis five stated that organizational ambidexterity does not moderate the relationship between dynamic capabilities and competitive advantage. The findings of this study (β = .12, p-value=.01, LLCI = .00, ULCI = .05) supports the objective hence the null hypothesis was rejected confirming that organizational ambidexterity moderated the relationship between dynamic capabilities and competitive advantage of manufacturing firms.

Chi *et al.,* (2017) posit that information technology ambidexterity moderates the inter-firm IT governance strategies on relational performance. Ambidexterity is the organizational ability to engage in the dual aspects of organizational growth that is exploration and exploitation innovation (Jansen *et al.,* 2008; Junni *et al.,* 2013; Nemanich & Vera, 2009) and at the same time management paradox (Yoon & Chae, 2012). In the context of acquisitions, ambidextrous organizations will be capable of creating synergies between the acquirer and target to generate valuable future exploitative opportunities (Jansen *et al.,* 2008; Nemanich & Vera, 2009; Rao-Nicholson *et al.,* 2016). This study also confirms the work of Zimmermann (2015) that reconciling capabilities and ambidexterity theories as a multi-level perspective.

### 4.12.7 The Moderating Effect Organizational Ambidexterity on the Relationship between Dynamic Capabilities and Competitive Advantage

Objective 6 was to examine the moderated mediation of organizational ambidexterity and leadership style on the relationship between dynamic capabilities and competitive

advantage of manufacturing firms in Nairobi, Kenya. Hypothesis six stated that there is no moderated mediation of organizational ambidexterity and leadership style on the relationship between dynamic capabilities and competitive advantage. The findings of this study showed that there was moderated mediation (CI = 000; 046) at the lower level (CI = 001; .070) but no moderated mediation above the mean (CI = -.002; .123) indicating that, at low levels of organizational ambidexterity, increasing dynamic capabilities was associated with lower but significant competitive advantage as compared to when it is with medium and high organizational ambidexterity

# CHAPTER FIVE

# SUMMARY OF FINDINGS, CONCLUSIONS AND RECOMMENDATIONS

## 5.0 Introduction

This chapter presents summary of the findings, hypotheses tested and why they were supported or not supported followed by conclusions based on the findings, implications of the study in practice and theory, the conclusions draw and the recommendations made thereafter providing suggestions for further research

## 5.1 Summary of the Findings

The research was guided by six objectives out of which all the six were supported as follows:

Objective $1_a$ was to examine effect of sensing capabilities on competitive advantage. The relationship was positive and statistically significant (β= .392, $\rho$=000) hence the objective was attained because there was a significant effect of sensing capabilities on competitive advantage leading to rejection of the hypothesis. This confirms that firms should sense their capabilities in order to be competitive. Objective $1_b$ was to assess effect of seizing capabilities on competitive advantage and results were positive and statistically significant (β= .194, $\rho$=000). The objective was attained considering that there was a significant effect of seizing capabilities on competitive advantage leading to rejection of the hypothesis. Objective $1_c$ was to determine the effect of reconfiguration capabilities on competitive advantage and the results were positive and statistically significant (β = .174, $\rho$=.001) hence the objective was attained as shown by the significant effect of reconfiguration capabilities on competitive advantage leading to rejection of the hypothesis hence the need for reconfiguration of capabilities by firms in order to be competitive. Objective $1_d$ was to examine the

effect of dynamic capabilities on competitive advantage and the results were positive and significant (β= .535, $\rho$=000) hence the objective attained and hypothesis rejected.

Objective $2_a$ was to assess the mediating effect of transformational leadership style on the relationship between sensing capabilities and competitive advantage and the results (LLCI = .03, ULCI = .13) were positive and significant hence objective $2_a$ attained leading to rejection of the hypothesis. Objective $2_b$ was to determine the mediating effect of transformational leadership style on the relationship between seizing capabilities and competitive advantage and the results (LLCI = .04, ULCI = .14) were positive and significant hence objective $2_b$ attained leading to rejection of the hypothesis. Objective $2_c$ was to examine the mediating effect of transformational leadership style on the relationship between reconfiguration capabilities and competitive advantage and the results (LLCI = .04, ULCI = .15) were positive and significant hence objective $2_c$ attained leading to rejection of the hypothesis.

Objective $3_a$ was to assess the mediating effect of transactional leadership style on the relationship between sensing capabilities and competitive advantage and the results (LLCI = .02, ULCI = .10) were positive and significant hence objective $3_a$ attained leading to rejection of the hypothesis. Objective $3_b$ was to determine the mediating effect of transactional leadership style on the relationship between seizing capabilities and competitive advantage and the results (LLCI = .01, ULCI = .10) were positive and significant hence objective $3_b$ attained leading to rejection of the hypothesis. Objective $3_c$ was to examine the mediating effect of transactional leadership style on the relationship between reconfiguration capabilities and competitive advantage and the results (LLCI = .03, ULCI = .12) were positive and significant hence objective $3_c$ attained leading to rejection of the hypothesis.

Objective $4_a$ was to assess the mediating effect of laissez-faire leadership style on the relationship between sensing capabilities and competitive advantage and the results (LLCI = -.00, ULCI = .08) were not positive and significant hence objective $4_a$ was not attained leading to failure to reject the hypothesis. Objective $4_b$ was to examine the mediating effect of laissez-faire leadership style on the relationship between seizing capabilities and competitive advantage and the results (LLCI = .01, ULCI = .08) were positive and significant hence objective $4_b$ attained leading to rejection of the hypothesis. Objective $4_c$ was to determine the mediating effect of laissez-faire leadership style on the relationship between reconfiguration capabilities and competitive advantage and the results (LLCI = .01, ULCI = .09) were positive and significant hence objective $4_c$ attained leading to rejection of the hypothesis.

Objective 5 examined the moderating effect of organizational ambidexterity on the relationship between dynamic capabilities and competitive advantage and the results were positive and significant (LLCI = .00, ULCI = .05 $\beta$=.12 and p-value of .00) thus the objective attained confirming that organizational ambidexterity moderates the relationship between dynamic capabilities and competitive advantage hence $H_0$5 rejected.

Objective 6 examined the moderated-mediation of organizational ambidexterity and leadership style on the relationship between dynamic capabilities and competitive advantage. The relationship was positive and statistically significant (LLCI = .00, ULCI = .05) hence objective 6 attained and $H_0$6 rejected.

### 5.2 Conclusion of the Study

Empirical findings of this study confirmed the significant relationship between dynamic capabilities and competitive advantage as well as moderating effect of

organizational ambidexterity on the relationship between leadership style on dynamic capabilities and competitive advantage. Based on the hypothesis of dynamic capabilities the findings therefore agreed with reviewed literature.

The results show that firms which deploy relevant capabilities as dynamic capabilities hold the potential for competitive advantage especially in a turbulent environment such as those of manufacturing firms. We found out also that firms with a stronger commitment to deploying dynamic capabilities are more successful while those that do not deploy their dynamic capabilities are not competitive. The study suggests that firms need to continuously deploy all firm relevant capabilities in line with the Dynamic Capabilities View and Resource-Based View and Porter's Forces Theories because lack of deployment of a single dynamic capability can negatively affect the other dynamic capabilities since they are correlated and interwoven.

Follow-up studies could focus on a deeper investigation of each dynamic capability, especially on the paths and positions affecting the development of dynamic capabilities. Undertaking a longitudinal research would also be valuable since the results of deploying and developing dynamic capabilities usually cannot be seen in the short term period in an organization. The same or a similar study could also be conducted in other industries or a cross-industry analysis could reveal commonalities and diversities in deploying dynamic capabilities across industries. Further, future studies exploring the dynamic capabilities field should involve other qualitative approaches such as focus groups, interviews or observation methods.

This study main focus was relationship between dynamic capabilities and firm's competitive advantage, on manufacturing firms located in Nairobi, Kenya and the results confirmed that the dimensions of dynamic capabilities are positively correlated

with the competitive advantage of the firms. Based on these findings it was concluded that, sensing capabilities helps enhance firms' competitive advantage through the early detection of competition; seizing capabilities strengthens organization to be able to identify and acquire needed knowledge both internally and externally which ultimately lead to competitive advantage and reconfiguration capabilities which drives the firm's competitive advantage by recognizing and transforming existing knowledge into new resources.

The study investigated the emerging concept of competitive advantage in the area of dynamic capabilities, leadership style and organizational ambidexterity of manufacturing firms where there is contemporary unstable operating environment that poses an ever changing customer needs thus firms' need to strive to survive. This therefore calls for a paradigm shift from the conventional manufacturing usually the norm or practice in many firms to a demand-based and target market-based-production of goods and services. The other focus was on leadership style and how this influences firm responsiveness in integrating, building and reconfiguring internal and external resources and competencies for survival, through the use of dynamic capabilities. In conclusion, the study presents important implications for both academic and empirical strategic management literature and practice.

## 5.3 Implications of the Study

This section covers the implications of the study in theory and practice.

### 5.3.1 Implications for Theory

The study provides empirical evidence on the relationship between the different dynamic capabilities: sensing capabilities, seizing capabilities and reconfiguration capabilities; and their effect on competitive advantage, moderated by organizational

ambidexterity and mediated by leadership style (transformational, transactional and laissez-faire). The theoretical contribution is in various ways. First is how the dynamic capabilities concept is key in differentiating competitive advantage and for this case, research findings supported Resource-Based View as a managerial framework used to determine the strategic resources with the potential to deliver competitive advantage to a firm (Barney, 1991) and can be exploited by the firm in order to achieve sustainable competitive advantage. This theory was chosen because RBV focuses managerial attention on the firm's internal resources in an effort to identify those assets, capabilities and competencies with the potential to deliver superior competitive advantages (Barney, 1991).

Secondly, the results of the study supported the dynamic capabilities theory which posits dynamic capabilities as the firm's ability to integrate, build, and reconfigure internal and external competencies to address rapidly changing environments (Teece *et al.,* 1997) hence the three distinguishing features of dynamic capabilities: sensing, seizing and reconfiguration capabilities. The findings also supported the moderating effect of organizational ambidexterity on the relationship between dynamic capabilities and competitive advantage thus if firms do not sense, seize or reconfigure their capabilities then they are likely to not remain competitive. These findings are consistent with previous research which associates organizational ambidexterity to firms' resources contributing enormously to the firm's competitive advantage (Porters 1998).

In view of the aforementioned, the current study is in tandem to those earlier studies because the three dynamic capabilities (sensing, seizing and reconfiguration) hence this study is in line with Resource Based View theory. The above explanations show

the theoretical underpinnings of both the direct and the moderating relationships. In addition to the consistency of the findings to the Porters, Resource Based View and Dynamic Capabilities theories, the current study findings also extended these theories.

This study also has made contributions on dynamic capabilities by being the first known study to investigate the relationship between dynamic capabilities, organizational ambidexterity, leadership style and competitive advantage. This is because the one by Teece & Pisano (2012) looked at the relationship between sensing, seizing and reconfiguration capabilities while Onyanchu (2018) studied the moderating effect if leadership style on the relationship between dynamic capabilities and firm performance. This therefore extended both the Resource-Based View and Porters theories through the positive and significant relationship between these capabilities and competitive advantage.

The study has also shown the mediating effect of leadership style (transformational, transactional and laissez-faire) on the relationship between dynamic capabilities (sensing, seizing and reconfiguration) on competitive advantage. This supports the Porters forces theory and Transformational-Transactional Leadership Theory that discusses the various factors that can make a firm become more competitive by concentrating on the resources that are both tangible and intangible. The moderating effect of organizational ambidexterity on the relationship between dynamic capabilities and competitive advantage were the key focus of the study as an extension of Resource Based View, Porters, and Dynamic Capabilities theories making it part of the response for the call on more research on the intermediate mechanisms unto which dynamic capabilities relate with competitive advantage of the firm (Porter, 2008).

Finally, the study findings on the moderated mediation of organizational ambidexterity and leadership style on the relationship between dynamic capabilities and competitive advantage is part of the response for the call for more research on these also so as to know the effect of the moderated mediation of organizational ambidexterity and leadership style, on the relationship between dynamic capabilities and competitive advantage of the firm. This study was contextualized to the manufacturing firms in Kenya and provides a sharper theoretical lens and valuable contribution to strategic theories of the Resource-Based view and Dynamic Capabilities Theories (Alvarez & Busenitz, 2001). The above explanation confirms the theory of the direct, mediating, moderating and moderated mediation relationships.

### 5.3.2 Implications for Practice

The findings of this study provide an insightful explanation to manufacturing firms' management to consider dynamic capabilities and encourage their managers to concentrate on sensing, seizing and reconfiguration of their tangible and intangible resources or capabilities that will help the firm to be competitive (Porter, 1998).

Finally, the moderation of organizational ambidexterity on the relationship between dynamic capabilities and competitive advantage is of significant application by management in the manufacturing firms and other employers. From the current study findings on the moderation of organizational ambidexterity on both dynamic capabilities and competitive advantage had significant positive effects consistent with the other studies where dynamic capabilities had positive effect on competitive advantage of the firm.

Firms should recognize shifts in the operating environment that could impact firm's business through regularly scanning the local and international business environment; create internal knowledge, acquire and assimilate or share knowledge and also integrate and transform existing capabilities both tangible and intangible capabilities.

### 5.3.3 Managerial Practical Implications

The study results have important implications for practicing managers and leaders in those practicing managers will know some useful implications for application in designing strategies to be used in enhancing and sustaining competitive advantage through the appropriate model for use when acquiring resources and selecting the competencies and capabilities that would avail desired results efficiently and effectively. The results will guide CEOs and various firm stakeholders in the manufacturing firms on how to maximize dynamic capabilities for competitive advantage.

The study found out that application of dynamic capabilities results in increased competitive advantage. First, sensing capabilities, seizing capabilities and reconfiguration capabilities have direct effects on competitive advantage although these capabilities are not distinct, it was concluded that firms that display high propensity to sense opportunities and threats, are able to make timely decisions and changes, in the right direction, enabling them to achieve competitive advantage and increased performance. Results further showed that those firms with high concentration of seizing capabilities, or reconfiguration capabilities are able to adapt and integrate external opportunities and to reconfigure internal processes on which they leverage for competitive advantage. The findings showed that manufacturing firms should often assess their level of sensing capabilities, seizing capabilities and

reconfiguration capabilities that enable them to deliver their short, through medium, to long term strategies.

Secondly, the results showed the effect of leadership style of the CEOs in fostering strategic flexibility in the deployment of dynamic capabilities in tandem with the shifting operating environment to impact on competitive advantage. For firms to improve the deployment of dynamic capabilities and consequently competitive advantage, owners should recruit CEOs who possess transformational compatible leadership style that will allow their organizations to sense, seize and reconfigure capabilities appropriately. The applicability of sensing capabilities, seizing capabilities and reconfiguration capabilities may not universally influence competitive advantage though but instead, it is contingent on the behaviour of the top leadership of the firm.

Manufacturing firms with CEOs who display transformational leadership style are able to sense (scanning) for opportunities and threats and are quick at seizing any opportunities available for sustainable competitive advantage even though they are slow at sensing and seizing these opportunities. Transactional leaders are able to seize and reconfigure opportunities which assist them to improve their performance, although they too are slow at sensing or scanning the environment while firms with leaders who practice laissez faire style have the ability to scan (sense) external and internal opportunities and threats and are able to reconfigure resources and capabilities so as to respond to changes in the operating environment.

Third, the findings are useful to other manufacturing firms outside Kenya or firms in other sectors within Kenya. If Kenyan manufacturing firms are not assisted to sustain firm's competitive advantage their leader-follower relationship, their inconsistent

performance patterns will have spillover effects to those firms that are directly or indirectly associated with them. The study results provided an important corroboration that competitive advantage of firms with balanced level of sensing capabilities, seizing capabilities and reconfiguration capabilities tend to improve. The correlations between sensing capabilities, seizing capabilities and reconfiguration capabilities and competitive advantage are stronger when there is appropriate leadership style.

From the above, it is implied that Kenyan manufacturing firms are still internal process-oriented, relying heavily on top-down directions on process execution but if firms are to sustain competitive advantage then they must improve on their ways of scanning the environment, adopt and adapt new ways of responding to the environmental changes and most importantly, transform or reconfigure resources and capabilities to efficiently and effectively respond the shifting operating environment.

One of the practical implications is that manufacturers may develop their dynamic capabilities based on the CEOs leadership style and if the CEOs leadership rating is obtained through regular surveys then results might inform the best strategy to be adopted in explicating dynamic capabilities that would utilize the firm‘s resources for competitive advantage. It is worth noting that ambidextrous organizations that possess organizational ambidexterity are a complex set of decisions and routines that help organizations sense and seize new opportunities through the reallocation of organizational assets and to mitigate the effects of path dependence hence sustained competitive advantage.

Some practical implications for developing dynamic capabilities by the managers will include promoting networking by having special networking teams, mentorship or

coaching at all levels and areas within the firm (for new employees, during innovation activities and projects, in training activities and through a learning model), fair and open communication that is inside and outside the firm's boundaries and also by having an open door policy, managers being able to identify high-potential employees and exploit their knowledge and capabilities at all times

### 5.4 Recommendations for Further Research

The study offers a significant contribution to academic research and practices though had some limitations that open up opportunities for further future research. First, the study context of the manufacturing firms where many of the firms focused were large may limit the generalizability of the current findings to other small and medium-sized corporations operating outside this sector. However, many manufacturing firms in Kenya and many other emerging economies fall under SMEs that play a critical role in the industrial growth (Kaivanto & Stoneman, 2007; Luukkonen, 2005) thus future research can be done in Small and Medium Enterprises or other firms under KNBS list which is bigger that those under KAM.

We acknowledge some response bias could still exist in this study and future research work should seek to collect data from different sources at different time points to minimize common method bias, to test for causal relationships and to understand better how and why dynamic capabilities, leadership style and organizational ambidexterity affects competitive advantage. In particular, process-based studies should take into account the proposition that organizational ambidexterity is dynamic and, as environments vary, firms and practices need to select different ambidexterity strategies (temporal, spatial, and contextual ambidexterity) according to Markides (2013) or three strands of organizational ambidexterity (structural, contextual and cyclical) which this study did not focus.

The moderating effect of organizational ambidexterity on the relationship between dynamic capabilities and competitive advantage needs to be investigated further. The hypotheses were tested after controlling using size of firm and age of the firm, for internal validity of results but future researchers may try to investigate the effects of these control factors or others and expand the scope to other sectors so that their results can revalidate the generalizability of the model.

Future researchers may also examine the same constructs of dynamic capabilities: sensing, seizing and reconfiguration as the independent variable, organizational ambidexterity which is the moderating variable, leadership style as the mediating variable and the dependent variable (competitive advantage) using other analysis approaches or software apart from SPSS. Organizational ambidexterity on the other hand is a multi-level construct (Birkinshaw and Gupta, 2013) thus future research should therefore examine a multi-level model of the organizational ambidexterity and competitive advantage link which would, in the professional firm context with different practice areas and client teams (Raisch *et al*. 2009; Junni *et al.* 2013).

Dynamic capabilities are a relatively new construct, future researchers should investigate and replicate the findings in organizations dealing with non-manufacturing firms and across other managers operating in different levels within the organizations (for example IT, finance, procurement, HR, CEO) among others. Researchers also need to examine the effect of other organizational ambidexterity or leadership style that may impact on the relationship between dynamic capabilities and competitive advantage for example leadership styles like transactional, transformational and laissez faire individually on the dynamic capabilities and their eventual effects on the relationship with competitive advantage. There is also need for other researchers to focus on the relationship between dynamic capabilities and other competitive

advantage variables in different contexts in order to explore more dynamic capabilities.

The study used a cross-sectional design and cannot reflect the lag time or long-term effects of sensing capabilities, seizing capabilities and reconfiguration capabilities on competitive advantage hence future studies could take longitudinal approach to examine the relationship between these dynamic capabilities and competitive advantage over a long time-series context. The study therefore recommends that the manufacturing firms' managers should endeavor to encourage quick response to environmental changes, by enhancing their employees' capability to detect, monitor and respond to competition; conscious efforts should be made to encourage sharing of ideas among workers to build a learning culture among the employees and to be creative and innovative to enable organizations to be ambidextrous hence competitive advantage; and also frequent exposure of employees to the latest technologies, trends, business models and customer relationship management strategies in the sector in order for them to help the organization in sensing, seizing and reconfiguration of its dynamic capabilities.

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# APPENDICES

## Appendix I: Introduction Letter

Dear Sir/Madam,

I am Leah Chemely Rono, a Ph.D candidate in the School of Business and Economics, Moi University in partial fulfillment for the award of my Doctor of Philosophy, Degree (Strategic Management Option). I am collecting data to enable me compile a research thesis entitled: *Dynamic Capabilities, Organizational Ambidexterity, Leadership Style, and Competitive Advantage of manufacturing firms in Nairobi County, Kenya*

Kindly spare your time to fill this questionnaire for me. The information provided will be treated with utmost confidentiality and will be used purely for research purposes. No respondent's identity will be published or released to anyone. Your participation is entirely voluntary and the questionnaire will be anonymous

Your participation in facilitating this study by filling the questionnaire will be highly appreciated. Thank you.

Yours faithfully

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ELDORET.

## Appendix II: Questionnaire

### Section A: Organization Profile

Kindly fill in the correct information ***(Tick as appropriate)***

1. **What is the type of your company?**

   Product ☐

   Service ☐

2. **What is your department?**

   Production/Operations Manager ☐

   Marketing Manager ☐

3. **What is the size of your firm? (The number of full time employees including management).**

   Below 300 employees ☐

   301 – 600 employees ☐

   601 – 900 employees ☐

   Above 900 employees ☐

4. **What is the age or number of years your firm has been in operation?**

   Less than 10 years

   11 – 20 years

   21 – 30 years

   Above 30 years

**Section B: Competitive Advantage**

Kindly, indicate the extent to which you agree or disagree that the statement reflects the situation in your organization **(compared to your competitors). Note:** (1 = strongly disagree, 2 = disagree, 3 = neither disagree nor agree, 4 =agree, 5 = strongly agree).

| S. No | ITEMS | 1 | 2 | 3 | 4 | 5 |
|---|---|---|---|---|---|---|
| 1. | Our products/services are difficult to copy or imitate | | | | | |
| 2. | Our products/services are applicable to multiple situations | | | | | |
| 3. | Our products/services are unique | | | | | |
| 4. | Our products/services are sustainable | | | | | |
| 5. | Our products/services can be differentiated from others | | | | | |
| 6. | Our products/services are tailored to meet the needs of the customers | | | | | |
| 7. | Our products/services are of high quality | | | | | |
| 8. | Our products/services are identifiable | | | | | |
| 9. | Our products/services are highly preferred by customers | | | | | |

**Section C: Dynamic Capabilities**

Kindly, indicate the extent to which you agree or disagree that the statement reflects the situation in your organization **(compared to your competitors). Note:** (1 = strongly disagree, 2 = disagree, 3 = neither disagree nor agree, 4 =agree, 5 = strongly agree).

| S. No. | ITEM | 1 | 2 | 3 | 4 | 5 |
|---|---|---|---|---|---|---|
| **SENSING CAPABILITY** | | | | | | |
| 1. | We are fast in detecting major changes in the industry for example competition, technology, regulation, environment etc. | | | | | |
| 2. | We often review the possible influence of government changes on our operating environment | | | | | |
| 3. | Our organization quickly understands new opportunities to serve our clients/customers better | | | | | |
| 4. | We regularly check the quality of our functional capabilities in comparison with the competition | | | | | |
| 5. | We regularly check the quality of our operational capabilities in comparison with competition | | | | | |
| 6. | We pay great attention to monitoring the change of functional and operational capabilities | | | | | |
| 7. | After changing existing capabilities or integrating new capabilities, we pay great attention to monitoring the efficiency of new processes | | | | | |
| 8. | We have feedback measures/mechanisms to access customer feedback systematically and frequently | | | | | |
| 9. | We use established processes to identify target market segments, changing customer needs and customer innovation | | | | | |

| | | | | | | |
|---|---|---|---|---|---|---|
| 10. | Our organization always observe best practices of product and service delivery to our customers | | | | | |
| 11. | We attend business forums that discusses the changing trends within our business operational environment | | | | | |
| **SEIZING CAPABILITY** | | | | | | |
| 1. | We strategically identify and acquire external knowledge very quickly i.e. the market, customer trends, technology among others | | | | | |
| 2. | Our employees attend business forums to learn about new market or customer trends, business strategies/models, technologies thus quickly implement them | | | | | |
| 3. | We are able to acquire knowledge about competitive and market trends from external sources | | | | | |
| 4. | Existing knowledge is readily available to each department within our business unit i.e. market or technology | | | | | |
| 5. | Our business unit periodically circulates new information or knowledge in the form of documents (reports, bulletins, newsletters) to update everyone within the business | | | | | |
| 6. | During major market or technological development changes, every department is made to know quickly/immediately | | | | | |
| 7. | Our employees have the capabilities to produce many novel and useful ideas | | | | | |
| 8. | We have the capabilities to successfully learn new things within this business unit | | | | | |
| 9. | We have the capabilities to effectively develop novel ideas, new knowledge and insights with the potential to impact on product development hence maintain our competitive position | | | | | |
| 10. | Our flexible structure makes us respond to market dynamics quickly | | | | | |
| 11. | We have a data bank for all our customers with an intention of finding solutions for our customers within a short period of time | | | | | |
| **RECONFIGURATION CAPABILITY** | | | | | | |
| 1. | We transform existing resources into new capabilities i.e. new organization structure, new technical equipment, new product offering, new services delivery systems among others | | | | | |
| 2. | We bring new perceptible changes that lie outside the existing features of existing capabilities | | | | | |
| 3. | We effectively identify valuable capability elements to connect and combine them in new ways | | | | | |
| 4. | We can effectively recombine existing capabilities into ‘novel’ combinations | | | | | |
| 5. | We strategically change our strategies | | | | | |
| 6. | We can effectively integrate new externally sourced capabilities and combine them with existing capabilities into ‘novel’ combinations | | | | | |
| 7. | We have substantially renewed our business processes | | | | | |
| 8. | We substantially changed ways of achieving our targets and objectives | | | | | |

| | | | | | | |
|---|---|---|---|---|---|---|
| 9. | We implement new kinds of management methods that are currently more responsive within our business processes | | | | | |
| 10. | We are bold in our efforts to maximize the probability of exploiting opportunities | | | | | |
| 11. | We can successfully integrate the new knowledge acquired with our existing knowledge | | | | | |

**Section D: Organizational Ambidexterity**

Kindly, indicate the extent to which you agree or disagree that the statement reflects the situation in your organization **(compared to your competitors). Note:** (1 = strongly disagree, 2 = disagree, 3 = neither disagree nor agree, 4 =agree, 5 = strongly agree).

| S. No | ITEMS | 1 | 2 | 3 | 4 | 5 |
|---|---|---|---|---|---|---|
| 1. | Our organization accepts demands that go beyond existing products and services | | | | | |
| 2. | We invent new products and services | | | | | |
| 3. | We experiment with new products and services in our local market | | | | | |
| 4. | We commercialize products and services that are completely new to our organization | | | | | |
| 5. | We frequently utilize new opportunities in new markets | | | | | |
| 6. | Lowering costs of internal processes is an important objective | | | | | |
| 7. | We improve our provision's efficiency of products and services | | | | | |
| 8. | Our organization regularly uses new distribution channels | | | | | |
| 9. | We regularly search for and approach new clients in new markets | | | | | |
| 10. | We frequently refine the provision of existing products and services | | | | | |
| 11. | We regularly implement small adaptations to existing products and services | | | | | |
| 12. | We introduce improved, but existing products and services for our local market | | | | | |
| 13. | We increase economies of scales in existing markets | | | | | |
| 14. | Our organization expands services for existing clients | | | | | |

**Section E: Leadership Style**

Kindly, indicate the extent to which you agree or disagree that the statement reflects the situation in your organization. **Note:** (1 = strongly disagree, 2 = disagree, 3 = neither disagree nor agree, 4 =agree, 5 = strongly agree).

| S. No. | SCALE ITEMS | 1 | 2 | 3 | 4 | 5 |
|---|---|---|---|---|---|---|
| **TRANSFORMATIONAL LEADERSHIP STYLE** | | | | | | |
| 1. | Our leader instills pride in me | | | | | |
| 2. | Our leader talks enthusiastically about what needs to be accomplished and suggests new ways of looking at how to | | | | | |

| | | | | | | |
|---|---|---|---|---|---|---|
| | complete assignments | | | | | |
| 3. | Our leader acts in ways that builds my respect | | | | | |
| 4. | Our leader articulates a compelling vision by talking optimistically about the future | | | | | |
| 5. | Our leader seeks differing perspectives when solving problems | | | | | |
| 6. | Our leader displays a sense of power and confidence | | | | | |
| 7. | Our leader emphasizes the importance of having a collective sense of mission and purpose | | | | | |
| 8. | Our leader considers the moral and ethical consequences of decisions | | | | | |
| 9. | Our leader expresses confidence that goals will be achieved | | | | | |
| 10. | Our leader considers me as having different needs, abilities, and aspirations | | | | | |
| 11. | Our leader spends time teaching and coaching | | | | | |
| **TRANSACTIONAL LEADERSHIP STYLE** | | | | | | |
| 1. | Our leader keeps track of all mistakes | | | | | |
| 2. | Our leader re-examines critical assumptions to questions whether they are appropriate | | | | | |
| 3. | Our leader discusses in specific terms who is responsible for achieving performance targets | | | | | |
| 4. | Our leader focuses attention on irregularities, mistakes, complaints, failures, exceptions and deviations from standards | | | | | |
| 5. | Our leader provides me with assistance in exchange for my efforts | | | | | |
| 6. | Our leader treats me as an individual rather than just as a member of a group | | | | | |
| 7. | Our leader expresses satisfaction when I meet expectations by rewarding effort | | | | | |
| 8. | Our leader directs my attention toward failures to meet standards | | | | | |
| 9. | Our leader waits for things to go wrong before taking action | | | | | |
| 10. | Our leader prefers closed cultures, mechanistic structures, and rigid systems and procedures. | | | | | |
| 11. | Our leader does not give me freedom to think innovatively or bring new ideas | | | | | |
| **LAISSEZ-FAIRE LEADERSHIP STYLE** | | | | | | |
| 1. | Our leader avoids making decisions | | | | | |
| 2. | Our leader delays responding to urgent questions | | | | | |
| 3. | Our leader is absent when needed | | | | | |
| 4. | Our leader is a firm believer in “if it isn’t broken, don’t fix it.” | | | | | |
| 5. | Our leader avoids getting involved when important issues arise | | | | | |
| 6. | As long as things are working, my leader do not try to change anything | | | | | |
| 7. | Whatever others want to do is OK with our leader | | | | | |
| 8. | Our leader gives little input and expects little in return | | | | | |
| 9. | Our leader looks for a way to get things together when mistakes occur without investigating, | | | | | |

| | | | | | | |
|---|---|---|---|---|---|---|
| 10. | Our leader shows little or no interest in how and when tasks are completed | | | | | |
| 11. | I am content to let others continue working in the same ways always | | | | | |

## Appendix III: List of Manufacturing Firms in Nairobi, Kenya

1. AAM Resources
2. ABC Bank
3. Associated Batteries Manufacturing (EA) Ltd.
4. Access Alliance Ltd.
5. Acquila Development Co. Ltd.
6. Adafric Communications Ltd.
7. Adpak International Ltd.
8. Africa Spirits Ltd.
9. African Banking Corporation Limited (ABC Bank)
10. African Cotton Industries Ltd.
11. African Retail Traders
12. Africote Ltd.
13. Afro Plastics (K) Ltd.
14. Agri Pro-Pak Ltd.
15. Agriner Agricultural Development
16. Agro-Irrigation & Pump
17. Aial Group Limited
18. AkinyiOdongo Kenya Ltd.
19. Alamdar Trading Company Ltd.
20. Alexander Forbes Risk Insurance Brokers
21. Allied East Africa Ltd.
22. Alltex EPZ Ltd.
23. Alloy Steel Casting Ltd.
24. Allpack Industries
25. All Seasons Communications Ltd.
26. Almasi Beverages Ltd.
27. Alpha Fine Foods Ltd.
28. Alpha Grain Millers
29. Alpha Medical Manufactures Ltd.
30. Alpharama Ltd.
31. Alpine coolers Ltd.
32. Amedo Centre Kenya Ltd.
33. Analabs Ltd.
34. Andaris Energy Limited
35. Apex Steel Ltd. – Rolling Mill Division
36. Aquamist Ltd.
37. Arvind Engineering Ltd.
38. Asano International Ltd.
39. Ascent Capital Advisory Services
40. Ashut Engineers Ltd.
41. ASKADOC
42. ASL Ltd. – Steel Division
43. ASP Company Ltd.
44. Assa Abloy East Africa Ltd.
45. Associated Battery Manufactures (E.A.) Ltd.
46. Associated Paper & Stationery Ltd.
47. Athi River Mining Ltd.
48. Athi River Steel Plant Ltd.
49. Athi River Tanneries Ltd.
50. Aucma Digital Technology Africa Ltd.
51. Auto Ancilliaries Ltd.
52. Auto Industries Ltd.
53. Auto Springs East Africa Ltd.
54. Autolitho Ltd.
55. Autosterile (EA)
56. Avery (East Africa) Ltd.
57. Avery Dennison Kenya Ltd.
58. Aviano East Africa
59. Azus Leather Limited
60. Bag and Envelope Converters Ltd.
61. Bamburi Cement Ltd.
62. Bamburi Special Products Ltd.
63. Banbros Ltd.
64. Bank of Africa
65. Basco Products (K) Ltd.
66. Basf East Africa Ltd.
67. Baumann Engineering Ltd.
68. Bayer East Africa Ltd.
69. Beberavi Collections Ltd.
70. Beiersdorf East Africa Ltd.
71. Belfast Millers Ltd.
72. Beta Healthcare International Ltd.
73. Betatrad (K) Ltd.
74. Beverage Services (K) Ltd.
75. Bdelo Ltd.
76. Bhachu Industries
77. Bio Food Products Ltd.
78. Biodeal Laboratories Ltd.
79. Biopharma Ltd.
80. Blue Nile Wire Products Ltd.
81. Blue Ring Products Ltd.
82. BlueKey Software Solutions (K) Ltd.
83. Blue Waves Enterprises Ltd.
84. BMG Holdings ltd.
85. Bobmil Industries Ltd.
86. BOC Kenya Ltd.
87. Boyama Building Materials
88. Brand ID Technologies (EA) Ltd.
89. Brand Printers
90. Breakfast Cereal Company (K) Ltd.
91. British American Tobacco Kenya Ltd.
92. Broadband Communication Network Ltd.
93. Brush Manufactures
94. Budget Furniture Ltd.
95. Budget Shoes Ltd.
96. Bunda Cakes & Feeds Ltd.
97. Bureau Veritas Kenya Ltd.
98. Buyline Industries Ltd.
99. C & P Shoes Industries Ltd.
100. C. Dormans Ltd.
101. C.CzarnikowSugar(EA) Ltd.
102. Cadbury Kenya Ltd.
103. Cannaneast Company Ltd
104. Candy Kenya Ltd.
105. Canon Chemicals Ltd. (former United Chemicals Ltd.)
106. Capel Food Ingredients
107. Capital Colors Creative Designers Ltd.
108. Carbacid (CO2) Ltd.
109. Carton Manufactures Ltd.
110. Central Glass Industries Ltd.
111. Cement Company Ltd
112. Centrofood Industries Ltd.
113. Centurion Systems Ltd.
114. Ceven Ltd.
115. CFC stanbic Bank
116. CFL Advocates
117. Chalange Industries Ltd.
118. Chase Bank (K) Ltd.
119. IMCD Kenya Ltd. Formerly Chemicals and Solvents (EA) Ltd.
120. Chemtech International Ltd.
121. Chemraw EA Ltd.
122. Chirag Kenya Ltd.
123. Choda Fabricators Ltd.
124. Chrysal Africa Ltd.

125. Chryso Eastern African Ltd.
126. Chui Auto Spring Industries Ltd.
127. Cica Motors
128. Citigroup Kenya
129. City Clock (K) Ltd.
130. City Engineering Works Ltd.
131. Cityscape Trends Services Ltd.
132. CMC Motors Group Ltd.
133. Cocorico Investment Ltd.
134. Coffee Agriworks Ltd.
135. Colour Labels Ltd.
136. Colour Packaging Ltd.
137. Colourprint Ltd.
138. Commercial Bank of Africa
139. Complast Industries Ltd.
140. Compulynx Ltd.
141. Coninx Industries Ltd.
142. Confini Ltd.
143. Consumer Options Ltd.
144. Contrive Industries Ltd.
145. Control Risk East Africa
146. Cooper K-Brands Ltd.
147. Cooperative Bank of Kenya
148. Corn Products Kenya Ltd.
149. Corporate Facilities
150. Cosmos Ltd.
151. Crop Nutrition Laboratory Services Ltd.
152. Crown Beverages
153. Crown Paints (Kenya) Ltd.
154. Crystal Industries Ltd.
155. Danish Cleantech Group
156. Danone Baby Nutrition Africa and Overseas
157. Darfords Enterprises Ltd.
158. Davis & Shirtliff Ltd.
159. Dawa Ltd.
160. De La Rue Currency and Security Print Ltd.
161. Decase Chemicals (Ltd.)
162. Delegation of German Industries
163. Del Monte Kenya Ltd.
164. Deloitte & Touche
165. Delta Blade Consultants
166. Deluxe Inks Ltd.
167. Desbro Kenya Ltd.
168. Devki Steel Mills Ltd.
169. Dharamshi & Co. Ltd
170. Digital Hub Ltd.
171. Digitech East Africa Ltd.
172. Dilpack Kenya Ltd.
173. Diverse Management Consultancy Ltd.
174. Dodhia Packaging Ltd.
175. Dodi Autotech (K) Ltd.
176. DPL Festive Ltd.
177. Doshi& Company Hardware Enterprises Ltd.
178. Dune Packaging Ltd.
179. Dynaplas Ltd.
180. e Management Africa
181. East Africa packaging Industries Ltd.
182. East Africa Spectre Ltd.
183. East African Breweries Ltd.
184. East African Cables Ltd.
185. East African Development Bank, Country Office (Kenya)
186. East African Foundry Works (K) Ltd.
187. East African Glassware Mart Ltd.
188. East African Malt Ltd. (EAML)
189. East African Sea Food Ltd.
190. East African Paper Mills
191. East African Portland
192. Eastern Produce Kenya Ltd (Kakuzi)
193. Easy Clean Africa Ltd.
194. Economic Housing Group Ltd.
195. Economic Industries Ltd.
196. Edible Oil Products Ltd.
197. Elegant Printing Works Ltd.
198. Elekea Ltd.
199. Elex Products Ltd.
200. Elgon Kenya Ltd.
201. Elite Tools Ltd.
202. Ellams Products
203. Elle Kenya Ltd.
204. Elys Chemicals Industries Ltd.
205. E-Momentum Interactive Systems Ltd.
206. Endermann Gypsum Ltd.
207. English Press Ltd.
208. Ennsvalley Bakery Ltd.
209. Enviro-Hub Holdings Ltd.
210. Erdemann Co. (K) Ltd.
211. Ernst & Young
212. Eslon Plastics of Kenya Ltd.
213. Essential Drugs Ltd.
214. Ethical Fashion Artisons EPZ Ltd.
215. Euro Packaging Ltd.
216. Europack Industries Ltd.
217. Excel Chemicals Ltd.
218. Express Communications Ltd.
219. Fantex (K) Ltd.
220. Farm refrigeration & Electrical Systems Ltd.
221. Farmers Choice Ltd.
222. Fine Engineering Works Ltd.
223. Fine Wood Works Ltd.
224. Finlay Brushware Ltd.
225. Five Star Industries Ltd.
226. Flair Kenya Ltd.
227. Flame Tree Africa Ltd.
228. Flamingo Tiles (Kenya) Limited
229. Flora Printers
230. Forces Equipment (Kenya) Ltd.
231. Foton East Africa Ltd.
232. Franciscan Kolbe Press
233. Fresh Produce Exporters
234. Association of Kenya
235. Friendship Container Manufacturers Ltd.
236. Frigoken Ltd.
237. From Eden
238. Furniture International Ltd.
239. Galaxy Paints & Coating Co. Ltd.
240. GE East Afrika Services Ltd.
241. Gems Skills (Kenya) Ltd.
242. General Aluminium Fabricators Ltd.
243. General Mills East Africa Ltd.
244. General Motors East Africa Ltd.
245. General Plastics Ltd.
246. General Printers Ltd.
247. Giloil Company Ltd.
248. Glaciers Products (Amor Mia, Dairyland, Mio)
249. GlaxoSmithkline Kenya Ltd.
250. Global Fresh Ltd.
251. Global Apparrels Ltd.
252. Golden Africa Kenya Ltd.
253. Gonas Best Ltd.
254. Gone Fishing Ltd.
255. Grain Industries Ltd.
256. Grant Thornton Consulting Ltd.
257. Green Forest Foods Ltd
258. Green Pencils Ltd.
259. GS1 Kenya
260. Guaca Stationers Ltd.

261. H.B. Fuller
262. Haco Tiger brands East Africa Ltd.
263. Halliday Finch Ltd.
264. Handa (K) Ltd
265. Happy Cow Ltd.
266. Harveer Bas Body Builders Ltd.
267. Heavy Engineering Ltd.
268. Henkel Kenya Company Ltd.
269. Henkel Polymer Company Ltd.
270. Heritage Foods Kenya Ltd.
271. Highchem East Africa Ltd.
272. Highlands Canners Ltd.
273. Highland Mineral Water Co. Ltd.
274. Hi-Plast Ltd.
275. Hi-Tech Inks and Coatings
276. Holman Brothers (E.A) Ltd.
277. Honda Motorcycle Kenya Ltd.
278. Honey Care Africa Ltd.
279. Hotpoint Appliances Limited
280. House of Major
281. House of Sahara Enterprises Limited
282. Imani Flowers Ltd.
283. Industrial & Commercial Development Corporation
284. Industrial and Scientific Support Services
285. Industrial Promotion Services
286. Insight Kenya
287. Insight Management Consultants Ltd.
288. Insteel Ltd.
289. Insta Products (EPZ) Ltd.
290. Institute of Packaging Professionals
291. Interconsumer Products Ltd.
292. International Energy Technik Ltd.
293. International Green Structures Manufacturing Kenya Ltd.
294. International Paper and Board Supplies Ltd.
295. International Supply Chain Solutions Ltd.
296. Intersoft Ltd.
297. Intertek International Ltd.
298. Intraspeed Arcpro
299. Iron Art Ltd.
300. Ipay Ltd.
301. Jambo Biscuits (K) Ltd.
302. Jamlam Industries Ltd.
303. Jay Giriraj Industries
304. Johnson Diversey East & Central Africa Ltd.
305. Josper Occupational Health & Safety
306. Jambo East Africa Ltd
307. Jumbo Chem Kenya Ltd.
308. Jumbo Quality Products
309. Jungle Group Holdings
310. Just Plastics Ltd.
311. Kaizen Institute Africa
312. Kaluworks Ltd.
313. KAM Industries Ltd.
314. Kamba Manufacturing (1986) Ltd.
315. Kamili Packers Ltd.
316. Kamyn Industries Ltd
317. Kanaga & Associate Advocates
318. Kankam Exporters Ltd.
319. Kanku Kenya Ltd.
320. Kansai Plascon Kenya Ltd.
321. Kapa Oil Refineries Ltd.
322. Karcher Ltd.
323. Karirana Estate Ltd.
324. Kartasi Industries Ltd.
325. Kedsta Investment Ltd.
326. Kel Chemicals Ltd.
327. Kema E.A. Ltd.
328. Kemia International Ltd.
329. Ken Nat Ink & Chemicals Ltd.
330. Kenafric Bakery
331. Kenafric Dairies Manufacturers Ltd.
332. Kenafric Industries Ltd.
333. Kenblest Ltd.
334. Kenbro Industries Ltd.
335. Kenchic Ltd.
336. Kenpoly Manufacturers Ltd.
337. Kenrub Ltd.
338. Kens Metal Industries Ltd.
339. Kentainers Ltd.
340. Kenwest Cables Ltd.
341. Kenya Breweries Ltd.
342. Kenya Builders & Concrete Ltd.
343. Kenya Coach Industries Ltd.
344. Kenya Electricity Generating Company Ltd (KENGEN)
345. Kenya Fire Appliances Company Ltd.
346. Kenya Flower Council
347. Kenya Horticultural Exporters (1977)
348. Kenya National Cleaner Production Centre
349. Kenya Nut Company Ltd.
350. Kenya Power & Lighting Co. Ltd.
351. Kenya Stationers Ltd.
352. Kenya Suitcase Manufacturers Ltd
353. Kenya Sweets Ltd.
354. Kenya Tea Development Agency
355. Kenya Trading (EPZ) Ltd.
356. Kenya Tents Ltd
357. Kenya Wine Agencies Ltd.
358. Kenya Wood Products Ltd.
359. Kenya Vehicle Manufacturers Ltd.
360. Kevian Kenya Ltd.
361. Kaolin Crowners Company Ltd.
362. Khetshi Dharamshi & Co. Ltd.
363. Kibo Africa Ltd.
364. Kikoy Co. Ltd.
365. Kim-Fay East Africa Ltd.
366. King Finn Kenya Ltd.
367. Kinpash Enterprises Ltd.
368. Kip Melamine Co. Ltd.
369. Kirinyaga Flour Mills
370. Kitchen King Ltd
371. Knights & Apps Ltd.
372. Koba Waters Ltd./Bromhill Springs Water
373. Koto Housing Kenya Ltd.
374. Krish Commodities Ltd.
375. Kuguru Food Complex Ltd.
376. Kurawa Industries Ltd.
377. Kuza Project
378. Kwale International Company Ltd.
379. Kwality Candies & Sweets Ltd
380. Kwality Packaging House Ltd.
381. L.G. Harris &Co. Ltd.
382. L.A.B International Kenya Ltd.
383. L`Oreal East Africa Ltd.
384. Label Converters

385. Labh Singh Harnam Singh Ltd.
386. Laboratory & Allied Ltd.
387. Lab Works East Africa Ltd.
388. Laminate Tubes Industries
389. Laneeb Plastic Industries Ltd.
390. Lean Energy Solutions Ltd.
391. Leather Industries of Kenya
392. Leera Apparels Ltd.
393. Leeways Control Systems and Suppliers
394. Le-Stud Ltd.
395. Libya Oil Kenya Ltd. (Formerly Mobil Oil Kenya)
396. Little Cribs Ltd.
397. Load Trailers
398. Lori Systems Ltd.
399. Lynxbits Global Ltd.
400. Mabati Rolling Mills Ltd.
401. Machinery and equipment consultants
402. Magnate Ventures Ltd.
403. Mahee Flowers
404. Mainport Training and Inspection Kenya Ltd.
405. Mainsteam Bookshop
406. Major Furniture
407. Malplast Industries Ltd.
408. Mafuko Industries Ltd.
409. Mama Millers Ltd.
410. Manchester Outfitters
411. Manipal International Printing Press Ltd.
412. Manji Food Industries Ltd.
413. Mann Manufacturing Co. Ltd.
414. Manufacturers & Suppliers (K) Ltd.
415. Maroo Polymers Ltd.
416. Marshall Fowler (Engineers) Ltd.
417. Marubeni Corporation Nairobi Office
418. Marvel Lifestyle Ltd.
419. Mash East Africa Ltd.
420. Master Fabricators Ltd.
421. Mastermind Tobacco (K) Ltd.
422. Match Masters Ltd.
423. Matengo Githae & Associates
424. Mayfeeds Kenya Ltd.
425. Mckay and Company Advocates
426. Mecol Ltd.
427. Medivet Products Ltd.
428. Mega (EA) Plastics
429. Megatech Ltd.
430. Megh Cushion Industries Ltd.
431. Meghraj Capital Ltd.
432. Melvin Marsh International
433. Metal Crowns Ltd.
434. Metlex International Ltd.
435. Metoxide Africa Ltd.
436. Metro Plastics Kenya Ltd.
437. Metsec Cables Ltd.
438. MFI Ultra Print Ltd.
439. Midco Textiles (EA) Ltd.
440. Millennium Management Consultants
441. Milly Fruit Processors Ltd
442. Mills Industries Ltd.
443. Mini Bakeries (Nbi) Ltd.
444. Miritini Kenya Ltd.
445. Mitsubishi Corporation Liaison Office
446. Mitsui & Co. Europe PLC
447. Mobius Motors Kenya Ltd.
448. Modern Lithographic (K) Ltd.
449. Modulec Engineering Systems Ltd.
450. Monwalk Investments Ltd.
451. Morani Ltd.
452. Multivac North Africa Kenya
453. Munyiri Special Honey Ltd.
454. Muri Mwaniki & Wamiti Advocates
455. Muriu Mungai & Company
456. Murphy Chemicals Ltd.
457. Murumba & Awele Advocates
458. Mustek East Africa
459. Muthaura Mugambi & Njonjo Advocates
460. Mutsimoto Motor Company
461. Mwanachi Bakers
462. Nails & Steel Products Ltd.
463. Naline Steelworks
464. Nairobi Bottlers Ltd.
465. Nairobi Flour Mills Ltd.
466. Nairobi Plastics Ltd.
467. Nampak Kenya Ltd.
468. Napro Industries Ltd.
469. NAS Airport Services Ltd.
470. Nation Media Group Ltd.
471. National Cement Ltd.
472. Nationwide Electrical Industries Ltd.
473. Ndalex Digital Technology
474. Negawatt Ltd.
475. Nestle Foods Kenya Ltd.
476. New Kenya Co-Operative Creameries Ltd.
477. Newline Ltd.
478. New Wide Garments Kenya EPZ Ltd. Promasidor
479. Ngecha Industries Ltd.
480. NIC Bank Ltd.
481. Nicey Nicey Maize Millers
482. Nicola Farms Ltd.
483. Njimia (K) Ltd.
484. Nkemi Consulting
485. Norbrook Kenya Ltd.
486. Nokia Siemens Networks Kenya Ltd.
487. Norda Industries Ltd.
488. Novastar Ventures
489. Odex Chemicals Ltd.
490. Oilzone (E.A) Ltd.
491. Olivado EPZ
492. Optimum Lubricants Ltd.
493. Orbit Chemical Industries Ltd.
494. Orbit Engineering Ltd.
495. Orbit Enterprises Ltd.
496. Oriental Mills Ltd.
497. Origicheck Company
498. Osho Chemicals Industries Ltd.
499. Oss.chemie (K) Ltd.
500. Packaging Industries Ltd.
501. Packaging Masters Ltd.
502. Palmhouse Diaries Ltd.
503. Palmy Enterprises
504. Panah Ltd.
505. Panesar`s Kenya Ltd.
506. Paper House of Kenya Ltd
507. Paperbags Ltd.
508. Passion Profit Ltd.
509. Patco Industries Ltd.
510. Patnet Steel Makers Manufacturers
511. Patronics Services Ltd.
512. PCTL Automation Ltd.
513. Pearl Industries Ltd.

514. Pembe Flour Mills Ltd.
515. Penny Galore Ltd.
516. Pentagon Agencies
517. Pernod Ricard Kenya Ltd.
518. PG Bison Ltd.
519. Pharm Access Africa Ltd.
520. Pharmaceutical Manufacturing Co. (K) Ltd.
521. Philips EA Ltd.
522. Pipe Manufacturers Ltd.
523. PKF Consulting
524. Plast Packaging Industries Ltd.
525. Plastic Electrons
526. Plastic & Rubber Industries Ltd.
527. Plateau Motors Ltd.
528. Platinum Distillers Ltd.
529. Polybend Ltd.
530. PolyChem East Africa Ltd.
531. Polyflex Industries Ltd.
532. Polythene Industries Ltd.
533. Powerex Lubricants Ltd.
534. Premier Flour Mills Ltd.
535. Premier Food Industries Ltd.
536. Premier Industries Ltd.
537. Premier Solar Solutions Ltd.
538. Pressmaster Ltd.
539. Prime Cartons Limited
540. Printing Services Ltd.
541. Printpak Multi Packaging Ltd.
542. Printwell Industries Ltd.
543. Pristine International Ltd.
544. Procter & Gamble East Africa Ltd.
545. Proctor & Allan (E.A.) Ltd.
546. Promasidor (Kenya) Ltd.
547. Propack Kenya Ltd.
548. Prosel Ltd
549. Protea Chemicals Kenya Ltd.
550. Protel Studios
551. Punchlines Ltd.
552. Purple Iris Africa
553. Pyrrex General Agencies Ltd.
554. PZ Cussons EA Ltd.
555. Qplast Industries Ltd.
556. Questa Care Ltd.
557. R.T. (East Africa) Ltd.
558. Rafiki Millers Ltd.
559. Rainforest Farmlands (K) Ltd.
560. Raka Milk Processes
561. Raiser Resource Ltd.
562. Ramco Printing Works Ltd.
563. Razco Ltd.
564. Reckitt Benckiser (E.A.) Ltd.
565. Red Lands Roses Ltd.
566. Regal Pharmaceuticals Ltd.
567. Regal Press Kenya Ltd.
568. Reliable Concrete Works Ltd.
569. Reliable Electricals Engineers (Nrb) Ltd.
570. Rentco East Africa Ltd.
571. Repelectric (K) Ltd.
572. Re-Suns Spices Ltd.
573. Revolution Stores Ltd.
574. Richfield Engineering Ltd.
575. RitePak Limited
576. Roc Industries Ltd.
577. Rockey Africa Limited
578. Rodl& Partner Ltd.
579. Rodwell Press Ltd.
580. Rok Industries Ltd.
581. Roka Industries Ltd.
582. Rosewood Furniture Manufacturers Ltd.
583. Royal Garment Industries Ltd
584. Rubber Products Ltd.
585. Ruidu (Kenya) Company Ltd.
586. Rumorth EA Ltd.
587. Rushabh Industries Ltd.
588. Rutuba Bio Agri & Organic Fertilizers Co. Ltd.
589. Safal Mitek Ltd.
590. Safaricom Ltd.
591. Safechem (K) Ltd.
592. Safepak Ltd.
593. Sagissa Process Engineering (K) Ltd.
594. Saj Ceramics Ltd.
595. Salim wazarani Kenya Company
596. Samco Holdings Ltd.
597. Sameer Africa Ltd.
598. Sameer Agriculture & Livestock (Kenya) Ltd.
599. Sanblasting & Coatings (Kenya) Ltd.
600. Sandstorm Africa Ltd.
601. Sanergy
602. Sanpack Africa Ltd.
603. Sanvoks Industries Limited
604. Savannah Cement Ltd.
605. Savannah Saw Mills
606. SBC Kenya Ltd.
607. SC Johnson and Son Kenya
608. Sacles& Software (K) Ltd.
609. Scandic Ltd.
610. Scania East Africa Ltd.
611. Scrumptious Eats Ltd
612. Selecta Kenya Gmbh & Sons K.G
613. Semco Business Park
614. Service Shoes Africa Ltd.
615. Sevenseas Technology
616. Seweco Paints Ltd.
617. SGS Kenya
618. Shah Timber Mart Ltd.
619. Shamco Industries Ltd.
620. Sheffield Steel Systems Ltd.
621. Shneider Electric Ltd.
622. Shri Krishana Overseas Ltd.
623. Siera Cables East Africa
624. Sierra Flora
625. Sigma Supplies Ltd.
626. Signode Packagoing Systems Ltd.
627. Silafrica Kenya
628. Silpack Industries Ltd.
629. Silvercoin Imports
630. Silverspread Hardware
631. Simba Corporation Limited
632. Singh Retread Ltd.
633. Sintel Security Print Solutions Ltd.
634. Siya Industries (K) Ltd.
635. Skanem Interlabels Nairobi Ltd.
636. Sketchers Design Promoters Ltd.
637. Sky Foods
638. Skylark Construction Ltd
639. Skylight Chemicals Ltd.
640. Skyline Holdings Ltd.
641. Smartpack Limited
642. Socabelec (EA) Ltd.
643. Social Bites Ltd.
644. Sohansons Ltd.
645. SoilexProsolve Ltd.
646. Solar Power & Infrastructure Limited
647. Solimpexs Africa Ltd.
648. Soloh Worldwide Inter-Enterprises Ltd.
649. Sols Inclination Ltd.
650. Solvochem east Africa Ltd.
651. Songyi Motocycles International Ltd.

652. Soni Technical Services Ltd.
653. Soroya Motors spares
654. SoSureAFRIpads Ltd.
655. Space & Style Ltd.
656. Specialized Engineering Co. (EA) Ltd.
657. Specialized Power Systems Ltd.
658. Spectre International Ltd.
659. Spectrum Network Ltd.
660. Sperkjet East Africa Ltd.
661. Spice World Ltd.
662. Spinnders & Spinners Ltd.
663. Springbox Kenya Ltd.
664. Sproxil East Africa
665. St. Theresa Industries
666. Standard Chartered Bank (K) Ltd.
667. Standard Group Ltd.
668. Stanlib Kenya Ltd.
669. Statpack Industries Ltd.
670. Stawi Foods and Fruits Ltd.
671. Steel Structures Ltd.
672. Steelmakers Ltd.
673. Steelwool (Africa) Ltd.
674. Straightline Enterprises Ltd.
675. Strategic Industries Ltd.
676. Strategic value Ltd.
677. Stratostaff EA Ltd.
678. Styloplast Ltd.
679. Silafrica Kenya
680. Summit Energy Systems
681. Sunam Shakti
682. Sunflag Textile & Knitwear Mills Ltd.
683. Sunland Roses Ltd.
684. Sunny Processors Ltd.
685. Supa Snacks Ltd.
686. Supa Brite Ltd.
687. Super Manufacturers Ltd.
688. Superfit Steelcon Ltd.
689. Superfoam ltd.
690. Suprima Industries (K) Limited
691. Swivel Marketing Ltd.
692. Symbiotic Media Consortium
693. Synergy Lubricants Solutions
694. Synergy-Pro
695. Syngenta East Africa Ltd.
696. Synresins Ltd.
697. Syspro Kenya Ltd.
698. Tarpo Industries Ltd.
699. Tata Chemicals Magadi Ltd.
700. Tatu City Ltd.
701. Taws Ltd.
702. Techno Brain Ltd.
703. Techno Plast Ltd.
704. Technoconstruct Kenya Ltd.
705. Technosteel Industries Ltd.
706. Techpak Industries Ltd.
707. Teita Estate Ltd.
708. Tetra Pak Ltd.
709. The Copy Cat Ltd.
710. The Helios Group
711. The Leadership Group Ltd.
712. The Print Exchange
713. Theevan Enterprises Ltd.
714. Thermopak Ltd.
715. Tile & Carpet Centre Ltd.
716. Timber Treatment International Ltd.
717. TimSales Ltd.
718. Tissue Kenya Ltd.
719. Tononoka Rolling Mills Ltd.
720. Tononoka Steel Ltd.
721. Top Pak Ltd.
722. Torrent East Africa Ltd.
723. Towertech Africa Ltd.
724. Toyota Kenya Ltd.
725. Toyota Tshusho East Africa Ltd.
726. Tracesoft Ltd.
727. Treadsetter Tyres Ltd.
728. Tri-Clover Industries (K) Ltd.
729. Tropikal Brand (Afrika) Ltd.
730. Trufoods Ltd.
731. Trust Feeds Ltd.
732. Trust Flour Mills Ltd.
733. TSS Spinning and Weaving Ltd.
734. Tulips Collections
735. Turea Ltd.
736. Twiga Stationers & Printers Ltd.
737. Twyford Ceramics Ltd.
738. Ultravetis East Africa Ltd.
739. Umati Capital (Kenya) Ltd.
740. Umoja Maintenance Cement (K) Ltd.
741. Underwriting Africa Insurance Brokers
742. Unga Group Ltd.
743. Unifilters Kenya Ltd.
744. Unilever East Africa Ltd.
745. Uni-Plastics
746. United Aryan (EPZ) Ltd.
747. United Bags Manufacturers Ltd.
748. United Distillers and Vintners (UDV)
749. Universal Corporation Ltd.
750. Unumed Ltd.
751. Usafi Services Ltd.
752. vaja`s Manufacturers Ltd
753. Vallem Construction Ltd.
754. Valencia Cosmetics Ltd.
755. Valuepak Foods
756. Valley Confectionary Ltd
757. Varoma Tech Limited
758. VarsaniBrakelinings Ltd.
759. Vava Coffee Ltd.
760. Vectors Kenya Ltd.
761. Vehicle and Equipment Leasing Ltd.
762. Vetcare Kenya Limited
763. Vert Limited
764. Victory Farms Limited
765. Victoria Juice Company
766. Viking Industries Ltd.
767. Vinepack Ltd.
768. VirjiVishram Patel & Sons
769. Virtual City Ltd.
770. Viscar Industrial Capacity Ltd.
771. Vitafoam Products Ltd.
772. Vivo Energy Kenya Ltd.
773. W.E. Tilley (Muthaiga) Ltd.
774. Wanji Food Industries Ltd.
775. Waridi Creations Ltd.
776. Warren Enterprises Ltd.
777. Warriors Insight Limited
778. Welding Alloys Ltd.
779. West African Seasoning Co. Ltd.
780. Westminister Paints and Resins Ltd.
781. Winnie`s Pure Health
782. Wire Products Ltd.
783. Wonderpac Industries Ltd.
784. Wood Makers (K) Ltd.
785. Woodtex Kenya Ltd.
786. Wotech Kenya Ltd.
787. Wrigley Company (E.A) Ltd.
788. Xpressions Flora Ltd
789. Zain Pharmaceuticals
790. Zaki LLC
791. Zeelandia East Africa Limited

792. Zene Ltd.
793. Zenith Steel Fabricators Ltd.
794. Zheng Hong (K) Ltd.
795. Zingo Investments Limited

## Appendix IV: NACOSTI Approval Letter

Republic of Kenya
MINISTRY OF EDUCATION
STATE DEPARTMENT OF EARLY LEARNING & BASIC EDUCATION

Telegrams: "SCHOOLING", Nairobi
Telephone: Nairobi 020 2453699
Email: rrenairobi@gmail.com
cdenairobi@gmail.com

REGIONAL DIRECTOR OF EDUCATION
NAIROBI REGION
NYAYO HOUSE
P.O. Box 74629 – 00200
NAIROBI

When replying please quote

Ref: **RCE/NRB/GEN/1/VOL. 1**

DATE: **26th June, 2019**

Leah Chemely Rono
Moi University
P O Box 3900-30100
**ELDORET**

**RE: RESEARCH AUTHORIZATION**

We are in receipt of a letter from the National Commission for Science, Technology and Innovation regarding research authorization in Nairobi County on **"Dynamic capabilities, leadership style, organizational ambidexterity and competitive advantage of manufacturing firms in Nairobi, Kenya".**

This office has no objection and authority is hereby granted for a period ending **24th June, 2020** as indicated in the request letter.

Kindly inform the Sub County Director of Education of the Sub County you intend to visit.

**KINOTI KIOGORA**
**FOR: REGIONAL DIRECTOR OF EDUCATION**
**NAIROBI**

REGIONAL DIRECTOR OF EDUCATION
NAIROBI
27 JUN 2019
MINISTRY OF EDUCATION
P. O. Box 74629, NAIROBI

C.C
Director General/CEO
National Commission for Science, Technology and Innovation
**NAIROBI**

**NATIONAL COMMISSION FOR SCIENCE, TECHNOLOGY AND INNOVATION**

Telephone: +254-20-2213471,
2241349,3310571,2219420
Fax: +254-20-318245,318249
Email: dg@nacosti.go.ke
Website : www.nacosti.go.ke
When replying please quote

NACOSTI, Upper Kabete
Off Waiyaki Way
P.O. Box 30623-00100
NAIROBI-KENYA

Ref. No. **NACOSTI/P/19/51314/31188**

Date: **25th June, 2019**

Leah Chemely Rono
Moi University
P.O. Box 3900-30100
**ELDORET.**

**RE: RESEARCH AUTHORIZATION**

Following your application for authority to carry out research on ***"Dynamic capabilities, leadership style, organizational ambidexterity and competitive advantage of manufacturing firms in Nairobi, Kenya,"*** I am pleased to inform you that you have been authorized to undertake research in **Nairobi County** for the period ending **24th June, 2020.**

You are advised to report to **the County Commissioner and the County Director of Education, Nairobi County** before embarking on the research project.

Kindly note that, as an applicant who has been licensed under the Science, Technology and Innovation Act, 2013 to conduct research in Kenya, you shall deposit **a copy** of the final research report to the Commission within **one year** of completion. The soft copy of the same should be submitted through the Online Research Information System.

**BONIFACE WANYAMA**
**FOR: DIRECTOR-GENERAL/CEO**

Copy to:

The County Commissioner
Nairobi County.

27/06/2019

COUNTY COMMISSIONER
NAIROBI COUNTY
P. O. Box 30124-00100, NBI
TEL: 341666

The County Director of Education
Nairobi County.

# Appendix V: Regression Results

## A) Testing Control variables

**Model Summary[b]**

| Model | R | R Square | Adjusted R Square | Std. Error of the Estimate | Change Statistics | | | | | Durbin-Watson |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | R Square Change | F Change | df1 | df2 | Sig. F Change | |
| 1 | .145[a] | .021 | .015 | .40897 | .021 | 3.403 | 2 | 316 | .034 | 1.597 |

a. Predictors: (Constant), Age of the firm, Size of the firm

b. Dependent Variable: CA

**Coefficients[a]**

| Model | Unstandardized Coefficients | | Standardized Coefficients | t | Sig. | Correlations | | | Collinearity Statistics | |
|---|---|---|---|---|---|---|---|---|---|---|
| | B | Std. Error | Beta | | | Zero-order | Partial | Part | Tolerance | VIF |
| 1 (Constant) | 4.232 | .065 | | 65.197 | .000 | | | | | |
| Size of the firm | -.031 | .027 | -.071 | -1.153 | .250 | -.001 | -.065 | -.064 | .809 | 1.237 |
| Age of the firm | .058 | .022 | .161 | 2.609 | .010 | .130 | .145 | .145 | .809 | 1.237 |

a. Dependent Variable: CA

## B) Testing Direct effects

**Model Summary[b]**

| Model | R | R Square | Adjusted R Square | Std. Error of the Estimate | Change Statistics | | | | | Durbin-Watson |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | R Square Change | F Change | df1 | df2 | Sig. F Change | |
| 1 | .600[a] | .360 | .350 | .80612116 | .360 | 35.272 | 5 | 313 | .000 | 1.908 |

a. Predictors: (Constant), Zscore: reconfigurationmean, Age of the firm, Zscore: sensingcapmean, Size of the firm, Zscore: seizingcapmean

b. Dependent Variable: Zscore: Comp Adv Mean

**Bootstrap for Model Summary**

| Model | Durbin-Watson | Bootstrap[a] | | | |
|---|---|---|---|---|---|
| | | | | 95% Confidence Interval | |
| | | Bias | Std. Error | Lower | Upper |
| 1 | 1.908 | -.660 | .128 | 1.009 | 1.508 |

a. Unless otherwise noted, bootstrap results are based on 5000 bootstrap samples

**Coefficients[a]**

| Model | Unstandardized Coefficients | | Standardized Coefficients | t | Sig. | Correlations | | | Collinearity Statistics | |
|---|---|---|---|---|---|---|---|---|---|---|
| | B | Std. Error | Beta | | | Zero-order | Partial | Part | Tolerance | VIF |
| 1 (Constant) | -.009 | .133 | | -.065 | .948 | | | | | |
| Size of the firm | .017 | .053 | .016 | .314 | .754 | -.001 | .018 | .014 | .788 | 1.269 |
| Age of the firm | -.007 | .046 | -.008 | -.150 | .881 | .130 | -.008 | -.007 | .739 | 1.353 |
| Zscore: sensingcapmean | .392 | .052 | .392 | 7.594 | .000 | .534 | .394 | .343 | .766 | 1.306 |
| Zscore: seizingcapmean | .194 | .053 | .194 | 3.653 | .000 | .414 | .202 | .165 | .727 | 1.376 |
| Zscore: reconfigurationmean | .174 | .052 | .174 | 3.323 | .001 | .411 | .185 | .150 | .743 | 1.345 |

a. Dependent Variable: Zscore: Comp Adv Mean

**ANOVA[a]**

| Model | | Sum of Squares | Df | Mean Square | F | Sig. |
|---|---|---|---|---|---|---|
| 1 | Regression | 114.603 | 5 | 22.921 | 35.272 | .000[b] |
| | Residual | 203.397 | 313 | .650 | | |
| | Total | 318.000 | 318 | | | |

a. Dependent Variable: Zscore: Comp Adv Mean

b. Predictors: (Constant), Zscore: reconfigurationmean, Age of the firm, Zscore: sensingcapmean, Size of the firm, Zscore: seizingcapmean

**C) Testing for Mediation**

**1) Sensing capabilities, transformational leadership style and competitive advantage**

```
Run MATRIX procedure:
************* PROCESS Procedure for SPSS Release 2.16.1 *************
          Written by Andrew F. Hayes, Ph.D.       www.afhayes.com
    Documentation available in Hayes (2013).
www.guilford.com/p/hayes3
**************************************************************************
Model = 4
    Y = ZCA
    X = Zsensing
    M = Ztransfo
Statistical Controls:
CONTROL= Sof      Fage
Sample size
        319
**************************************************************************
Outcome: Ztransfo
Model Summary
         R      R-sq       MSE         F       df1       df2         p
      .410      .168      .840    21.227     3.000   315.000      .000
Model
             coeff        se         t         p      LLCI      ULCI
constant      .078      .147      .530      .597     -.211      .366
Zsensing      .383      .053     7.274      .000      .280      .487
Sof          -.121      .060    -2.003      .046     -.239     -.002
Fage          .044      .051      .871      .384     -.056      .145
**************************************************************************
Outcome: ZCA
Model Summary
         R      R-sq       MSE         F       df1       df2         p
      .557      .310      .699    35.286     4.000   314.000      .000
Model
             coeff        se         t         p      LLCI      ULCI
constant     -.106      .134     -.795      .427     -.370      .157
Ztransfo      .168      .051     3.277      .001      .067      .270
Zsensing      .464      .052     8.927      .000      .362      .566
Sof           .026      .055      .466      .642     -.083      .135
Fage          .021      .047      .459      .647     -.070      .113
************************** TOTAL EFFECT MODEL ***********************
Outcome: ZCA
Model Summary
         R      R-sq       MSE         F       df1       df2         p
      .535      .287      .720    42.164     3.000   315.000      .000
Model
             coeff        se         t         p      LLCI      ULCI
constant     -.093      .136     -.687      .492     -.361      .174
Zsensing      .528      .049    10.825      .000      .432      .624
Sof           .005      .056      .097      .922     -.104      .115
Fage          .029      .047      .611      .542     -.064      .122
***************** TOTAL, DIRECT, AND INDIRECT EFFECTS****************
Total effect of X on Y
    Effect        SE         t         p      LLCI      ULCI
      .528      .049    10.825      .000      .432      .624
Direct effect of X on Y
    Effect        SE         t         p      LLCI      ULCI
      .464      .052     8.927      .000      .362      .566
Indirect effect of X on Y
```

```
            Effect   Boot SE  BootLLCI  BootULCI
Ztransfo      .065      .026      .025      .124
******************** ANALYSIS NOTES AND WARNINGS ********************
Number of bootstrap samples for bias corrected bootstrap confidence
intervals:
     5000
Level of confidence for all confidence intervals in output:
    95.00
------ END MATRIX -----
```

**Seizing capabilities, transformational leadership style and competitive advantage**

```
Run MATRIX procedure:
************* PROCESS Procedure for SPSS Release 2.16.1**************
          Written by Andrew F. Hayes, Ph.D.       www.afhayes.com
    Documentation available in Hayes (2013).
www.guilford.com/p/hayes3
**************************************************************************
Model = 4
    Y = ZCA
    X = Zseizing
    M = Ztransfo
Statistical Controls:
CONTROL= Sof      Fage
Sample size
        319
**************************************************************************
Outcome: Ztransfo
Model Summary
         R      R-sq       MSE         F       df1       df2         p
      .341      .116      .892    13.818     3.000   315.000      .000
Model
             coeff        se         t         p      LLCI      ULCI
constant      .145      .154      .943      .346     -.158      .449
Zseizing      .308      .055     5.596      .000      .200      .416
Sof          -.168      .062    -2.721      .007     -.289     -.046
Fage          .049      .053      .919      .359     -.056      .153
**************************************************************************
Outcome: ZCA
Model Summary
         R      R-sq       MSE         F       df1       df2         p
      .477      .228      .782    23.154     4.000   314.000      .000
Model
             coeff        se         t         p      LLCI      ULCI
constant     -.047      .145     -.325      .745     -.332      .238
Ztransfo      .245      .053     4.644      .000      .141      .349
Zseizing      .332      .054     6.142      .000      .226      .438
Sof          -.019      .058     -.322      .748     -.134      .096
Fage          .027      .050      .547      .585     -.071      .125
************************** TOTAL EFFECT MODEL************************
```

```
Outcome: ZCA
Model Summary
         R      R-sq       MSE         F       df1       df2         p
      .418      .175      .833    22.232     3.000   315.000      .000
Model
             coeff        se         t         p      LLCI      ULCI
constant     -.011      .149     -.076      .939     -.305      .282
Zseizing      .407      .053     7.658      .000      .303      .512
Sof          -.060      .060    -1.006      .315     -.177      .057
Fage          .039      .051      .764      .446     -.062      .140
***************** TOTAL, DIRECT, AND INDIRECT EFFECTS***************
Total effect of X on Y
    Effect        SE         t         p      LLCI      ULCI
      .407      .053     7.658      .000      .303      .512
Direct effect of X on Y
    Effect        SE         t         p      LLCI      ULCI
      .332      .054     6.142      .000      .226      .438
Indirect effect of X on Y
            Effect   Boot SE  BootLLCI  BootULCI
Ztransfo      .075      .024      .039      .138
******************** ANALYSIS NOTES AND WARNINGS ********************
Number of bootstrap samples for bias corrected bootstrap confidence
intervals:
     5000
Level of confidence for all confidence intervals in output:
    95.00
------ END MATRIX -----
```

**Reconfiguration capabilities, transformational leadership and competitive advantage**

```
Run MATRIX procedure:
************* PROCESS Procedure for SPSS Release 2.16.1**************
          Written by Andrew F. Hayes, Ph.D.       www.afhayes.com
    Documentation available in Hayes (2013).
www.guilford.com/p/hayes3
**************************************************************************
Model = 4
    Y = ZCA
    X = Zreconfm
    M = Ztransfo
Statistical Controls:
CONTROL= Sof      Fage
Sample size
        319
**************************************************************************
Outcome: Ztransfo
Model Summary
         R      R-sq       MSE         F       df1       df2
p
      .451      .203      .805    26.759     3.000   315.000
.000
Model
             coeff        se         t         p      LLCI      ULCI
constant     -.048      .142     -.334      .739     -.328      .233
Zreconfm      .422      .051     8.308      .000      .322      .521
Sof          -.119      .059    -2.013      .045     -.235     -.003
Fage          .086      .049     1.761      .079     -.010      .182
**************************************************************************
```

```
Outcome: ZCA
Model Summary
         R      R-sq       MSE         F       df1       df2         p
      .464      .216      .794    21.589     4.000   314.000      .000
Model
             coeff        se         t         p      LLCI      ULCI
constant     -.261      .141    -1.844      .066     -.539      .017
Ztransfo      .208      .056     3.707      .000      .097      .318
Zreconfm      .316      .056     5.684      .000      .207      .426
Sof           .008      .059      .130      .897     -.108      .124
Fage          .085      .049     1.741      .083     -.011      .181
************************** TOTAL EFFECT MODEL************************
Outcome: ZCA
Model Summary
         R      R-sq       MSE         F       df1       df2         p
      .426      .181      .826    23.265     3.000   315.000      .000
Model
             coeff        se         t         p      LLCI      ULCI
constant     -.271      .144    -1.877      .061     -.555      .013
Zreconfm      .404      .051     7.854      .000      .303      .505
Sof          -.017      .060     -.284      .777     -.135      .101
Fage          .103      .050     2.076      .039      .005      .200
***************** TOTAL, DIRECT, AND INDIRECT EFFECTS****************
Total effect of X on Y
    Effect        SE         t         p      LLCI      ULCI
      .404      .051     7.854      .000      .303      .505
Direct effect of X on Y
    Effect        SE         t         p      LLCI      ULCI
      .316      .056     5.684      .000      .207      .426
Indirect effect of X on Y
            Effect   Boot SE  BootLLCI  BootULCI
Ztransfo      .087      .029      .038      .152
******************** ANALYSIS NOTES AND WARNINGS*********************
Number of bootstrap samples for bias corrected bootstrap confidence
intervals:
     5000
Level of confidence for all confidence intervals in output:
    95.00
                ------ END MATRIX -----
```

**2) Sensing capabilities, transactional leadership style and competitive advantage**

```
Run MATRIX procedure:
************* PROCESS Procedure for SPSS Release 2.16.1**************
          Written by Andrew F. Hayes, Ph.D.       www.afhayes.com
    Documentation available in Hayes (2013).
www.guilford.com/p/hayes3
**************************************************************************
Model = 4
    Y = ZCA
    X = Zsensing
    M = Ztransac
Statistical Controls:
CONTROL= Sof      Fage

Sample size
        319
**************************************************************************
```

```
Outcome: Ztransac
Model Summary
         R      R-sq       MSE         F       df1       df2         p
      .397      .157      .851    19.587     3.000   315.000      000
Model
             coeff        se         t         p      LLCI      ULCI
constant     -.333      .148    -2.257      .025     -.624     -.043
Zsensing      .355      .053     6.690      .000      .251      .459
Sof           .016      .061      .269      .788     -.103      .136
Fage          .105      .051     2.040      .042      .004      .205
**************************************************************************
Outcome: ZCA
Model Summary
         R      R-sq       MSE         F       df1       df2         p
      .552      .305      .704    34.403     4.000   314.000      000
Model
             coeff        se         t         p      LLCI      ULCI
constant     -.044      .135     -.328      .743     -.311      .222
Ztransac      .147      .051     2.867      .004      .046      .248
Zsensing      .476      .052     9.233      .000      .375      .578
Sof           .003      .055      .055      .956     -.106      .112
Fage          .013      .047      .286      .775     -.079      .106
************************** TOTAL EFFECT MODEL************************
Outcome: ZCA
Model Summary
         R      R-sq       MSE         F       df1       df2         p
      .535      .287      .720    42.164     3.000   315.000     .000
Model
             coeff        se         t         p      LLCI      ULCI
constant     -.093      .136     -.687      .492     -.361      .174
Zsensing      .528      .049    10.825      .000      .432      .624
Sof           .005      .056      .097      .922     -.104      .115
Fage          .029      .047      .611      .542     -.064      .122

***************** TOTAL, DIRECT, AND INDIRECT EFFECTS***************
Total effect of X on Y
    Effect        SE         t         p      LLCI      ULCI
      .528      .049    10.825      .000      .432      .624
Direct effect of X on Y
    Effect        SE         t         p      LLCI      ULCI
      .476      .052     9.233      .000      .375      .578
Indirect effect of X on Y
            Effect   Boot SE  BootLLCI  BootULCI
Ztransac      .052      .022      .016      .103
******************** ANALYSIS NOTES AND WARNINGS *******************
Number of bootstrap samples for bias corrected bootstrap confidence
intervals:
     5000
Level of confidence for all confidence intervals in output:
    95.00
------ END MATRIX -----
```

**Seizing capabilities, transactional leadership style and competitive advantage**

```
Run MATRIX procedure:
************* PROCESS Procedure for SPSS Release 2.16.1**************
          Written by Andrew F. Hayes, Ph.D.       www.afhayes.com
    Documentation available in Hayes (2013).
www.guilford.com/p/hayes3
```

```
**************************************************************************
Model = 4
    Y = ZCA
    X = Zseizing
    M = Ztransac
Statistical Controls:
CONTROL= Sof      Fage

Sample size
        319
**************************************************************************
Outcome: Ztransac
Model Summary
         R      R-sq       MSE         F       df1       df2         p
      .260      .068      .941     7.632     3.000   315.000      .000
Model
            coeff        se         t         p      LLCI      ULCI
constant     -.340      .158    -2.143      .033     -.651     -.028
Zseizing      .181      .057     3.200      .002      .070      .292
Sof          -.031      .063     -.488      .626     -.155      .094
Fage          .135      .054     2.471      .014      .027      .242
**************************************************************************
**
Outcome: ZCA
Model Summary
         R      R-sq       MSE         F       df1       df2         p
      .483      .233      .776    23.904     4.000   314.000      .000
Model
            coeff        se         t         p      LLCI      ULCI
constant      .074      .145      .509      .611     -.211      .359
Ztransac      .251      .051     4.903      .000      .150      .352
Zseizing      .362      .052     6.937      .000      .259      .465
Sof          -.052      .058     -.907      .365     -.165      .061
Fage          .005      .050      .107      .915     -.093      .104
************************** TOTAL EFFECT MODEL ***********************
Outcome: ZCA
Model Summary
         R      R-sq       MSE         F       df1       df2         p
      .418      .175      .833    22.232     3.000   315.000      .000
Model
            coeff        se         t         p      LLCI      ULCI
constant     -.011      .149     -.076      .939     -.305      .282
Zseizing      .407      .053     7.658      .000      .303      .512
Sof          -.060      .060    -1.006      .315     -.177      .057
Fage          .039      .051      .764      .446     -.062      .140
***************** TOTAL, DIRECT, AND INDIRECT EFFECTS****************
Total effect of X on Y
    Effect        SE         t         p      LLCI      ULCI
      .407      .053     7.658      .000      .303      .512
Direct effect of X on Y
    Effect        SE         t         p      LLCI      ULCI
      .362      .052     6.937      .000      .259      .465
Indirect effect of X on Y
           Effect   Boot SE  BootLLCI  BootULCI
Ztransac      .045      .020      .014      .095
******************** ANALYSIS NOTES AND WARNINGS*********************
Number of bootstrap samples for bias corrected bootstrap confidence
intervals:
     5000
```

```
Level of confidence for all confidence intervals in output:
    95.00
------ END MATRIX -----
```

**Reconfiguration capabilities, transactional leadership style and competitive advantage**

```
Run MATRIX procedure:
************* PROCESS Procedure for SPSS Release 2.16.1**************
          Written by Andrew F. Hayes, Ph.D.       www.afhayes.com
    Documentation available in Hayes (2013).
www.guilford.com/p/hayes3
**************************************************************************
Model = 4
    Y = ZCA
    X = Zreconfm
    M = Ztransac
Statistical Controls:
CONTROL= Sof      Fage
Sample size
        319
**************************************************************************
Outcome: Ztransac
Model Summary
         R      R-sq       MSE         F       df1       df2         p
      .364      .132      .876    16.002     3.000   315.000      .000
Model
             coeff        se         t         p      LLCI      ULCI
constant     -.451      .149    -3.038      .003     -.744     -.159
Zreconfm      .311      .053     5.866      .000      .206      .415
Sof           .007      .062      .112      .911     -.114      .128
Fage          .151      .051     2.954      .003      .050      .251
**************************************************************************
Outcome: ZCA
Model Summary
         R      R-sq       MSE         F       df1       df2         p
      .467      .218      .792    21.917     4.000   314.000      .000
Model
             coeff        se         t         p      LLCI      ULCI
constant     -.178      .143    -1.241      .216     -.460      .104
Ztransac      .206      .054     3.849      .000      .101      .312
Zreconfm      .340      .053     6.411      .000      .236      .444
Sof          -.018      .058     -.315      .753     -.133      .097
Fage          .072      .049     1.460      .145     -.025      .168
************************** TOTAL EFFECT MODEL************************

Outcome: ZCA
Model Summary
         R      R-sq       MSE         F       df1       df2         p
      .426      .181      .826    23.265     3.000   315.000      .000
Model
             coeff        se         t         p      LLCI      ULCI
constant     -.271      .144    -1.877      .061     -.555      .013
Zreconfm      .404      .051     7.854      .000      .303      .505
Sof          -.017      .060     -.284      .777     -.135      .101
Fage          .103      .050     2.076      .039      .005      .200
***************** TOTAL, DIRECT, AND INDIRECT EFFECTS***************
Total effect of X on Y
    Effect        SE         t         p      LLCI      ULCI
      .404      .051     7.854      .000      .303      .505
```

```
Direct effect of X on Y
    Effect         SE          t          p       LLCI       ULCI
      .340       .053      6.411       .000       .236       .444
Indirect effect of X on Y
            Effect   Boot SE  BootLLCI  BootULCI
Ztransac      .064       .023       .029       .120
******************** ANALYSIS NOTES AND WARNINGS**********************
Number of bootstrap samples for bias corrected bootstrap confidence
intervals:
     5000
Level of confidence for all confidence intervals in output:
    95.00
------ END MATRIX -----
```

**3) Sensing capabilities, laissez-faire leadership style and competitive advantage**

```
Run MATRIX procedure:
************* PROCESS Procedure for SPSS Release 2.16.1 *************
          Written by Andrew F. Hayes, Ph.D.       www.afhayes.com
    Documentation available in Hayes (2013).
www.guilford.com/p/hayes3
**************************************************************************
Model = 4
    Y = ZCA
    X = Zsensing
    M = Zlaissez
Statistical Controls:
CONTROL= Sof      Fage
Sample size
        319
**************************************************************************
Outcome: Zlaissez
Model Summary
          R       R-sq        MSE          F        df1        df2          p
      .330       .109       .899     12.854      3.000    315.000       .000
Model
             coeff         se          t          p       LLCI       ULCI
constant      -.101       .152      -.666       .506      -.400       .197
Zsensing      -.325       .055     -5.964       .000      -.433      -.218
Sof            .051       .062       .818       .414      -.072       .174
Fage           .005       .053       .088       .930      -.099       .108
**************************************************************************
Outcome: ZCA
Model Summary
          R       R-sq        MSE          F        df1        df2          p
      .545       .297       .712     33.168      4.000    314.000       .000
Model
             coeff         se          t          p       LLCI       ULCI
constant      -.104       .135      -.772       .441      -.370       .161
Zlaissez      -.109       .050     -2.167       .031      -.207      -.010
Zsensing       .493       .051      9.631       .000       .392       .594
Sof            .011       .056       .198       .843      -.098       .120
Fage           .029       .047       .625       .532      -.063       .122
************************ TOTAL EFFECT MODEL************************
```

```
Outcome: ZCA
Model Summary
         R      R-sq       MSE         F       df1       df2         p
      .535      .287      .720    42.164     3.000   315.000      .000
Model
             coeff        se         t         p      LLCI      ULCI
constant     -.093      .136     -.687      .492     -.361      .174
Zsensing      .528      .049    10.825      .000      .432      .624
Sof           .005      .056      .097      .922     -.104      .115
Fage          .029      .047      .611      .542     -.064      .122
***************** TOTAL, DIRECT, AND INDIRECT EFFECTS****************
Total effect of X on Y
    Effect        SE         t         p      LLCI      ULCI
      .528      .049    10.825      .000      .432      .624
Direct effect of X on Y
    Effect        SE         t         p      LLCI      ULCI
      .493      .051     9.631      .000      .392      .594
Indirect effect of X on Y
            Effect   Boot SE  BootLLCI  BootULCI
Zlaissez      .035      .020     -.002      .080
******************** ANALYSIS NOTES AND WARNINGS*********************
Number of bootstrap samples for bias corrected bootstrap confidence
intervals:
     5000
Level of confidence for all confidence intervals in output:
    95.00
------ END MATRIX -----
```

**Seizing capabilities, laissez-faire leadership style and competitive advantage**

```
Run MATRIX procedure:
************* PROCESS Procedure for SPSS Release 2.16.1 *************
          Written by Andrew F. Hayes, Ph.D.       www.afhayes.com
    Documentation available in Hayes (2013).
www.guilford.com/p/hayes3
**************************************************************************
Model = 4
    Y = ZCA
    X = Zseizing
    M = Zlaissez
Statistical Controls:
CONTROL= Sof      Fage
Sample size
        319
**************************************************************************
Outcome: Zlaissez
Model Summary
         R      R-sq       MSE         F       df1       df2         p
      .229      .053      .956     5.829     3.000   315.000      .001
Model
             coeff        se         t         p      LLCI      ULCI
constant     -.130      .160     -.814      .416     -.444      .184
Zseizing     -.218      .057    -3.831      .000     -.331     -.106
Sof           .092      .064     1.449      .148     -.033      .218
Fage         -.010      .055     -.178      .859     -.118      .098
**************************************************************************
```

```
Outcome: ZCA
Model Summary
          R       R-sq        MSE          F        df1        df2          p
       .456       .208       .802     20.632      4.000    314.000       .000
Model
              coeff         se          t          p       LLCI       ULCI
constant       -.036       .146       -.244       .807       -.324       .252
Zlaissez       -.188       .052      -3.639       .000       -.289      -.086
Zseizing        .366       .053       6.862       .000        .261       .471
Sof            -.043       .059       -.725       .469       -.158       .073
Fage            .037       .050        .742       .459       -.062       .136
************************** TOTAL EFFECT MODEL************************
Outcome: ZCA
Model Summary
          R       R-sq        MSE          F        df1        df2          p
       .418       .175       .833     22.232      3.000    315.000       .000
Model
              coeff         se          t          p       LLCI       ULCI
constant       -.011       .149       -.076       .939       -.305       .282
Zseizing        .407       .053       7.658       .000        .303       .512
Sof            -.060       .060      -1.006       .315       -.177       .057
Fage            .039       .051        .764       .446       -.062       .140
***************** TOTAL, DIRECT, AND INDIRECT EFFECTS****************
Total effect of X on Y
    Effect         SE          t          p       LLCI       ULCI
      .407       .053      7.658       .000       .303       .512
Direct effect of X on Y
    Effect         SE          t          p       LLCI       ULCI
      .366       .053      6.862       .000       .261       .471
Indirect effect of X on Y
            Effect   Boot SE  BootLLCI  BootULCI
Zlaissez      .041       .017       .014       .082
******************** ANALYSIS NOTES AND WARNINGS ********************
Number of bootstrap samples for bias corrected bootstrap confidence
intervals:
     5000
Level of confidence for all confidence intervals in output:
    95.00
           ------ END MATRIX -----
```

**Reconfiguration capabilities, laissez-faire leadership style and competitive advantage**

```
Run MATRIX procedure:
************* PROCESS Procedure for SPSS Release 2.16.1**************
          Written by Andrew F. Hayes, Ph.D.       www.afhayes.com
    Documentation available in Hayes (2013).
www.guilford.com/p/hayes3
**************************************************************************
Model = 4
    Y = ZCA
    X = Zreconfm
    M = Zlaissez
Statistical Controls:
CONTROL= Sof      Fage
Sample size
        319
**************************************************************************
```

```
Outcome: Zlaissez
Model Summary
         R      R-sq       MSE         F       df1       df2         p
      .264      .070      .939     7.854     3.000   315.000      .000
Model
             coeff        se         t         p      LLCI      ULCI
constant      .008      .154      .052      .958     -.295      .311
Zreconfm     -.249      .055    -4.550      .000     -.357     -.142
Sof           .065      .064     1.016      .310     -.061      .190
Fage         -.041      .053     -.773      .440     -.145      .063
**************************************************************************
Outcome: ZCA
Model Summary
         R      R-sq       MSE         F       df1       df2         p
      .458      .209      .801    20.781     4.000   314.000      .000
Model
             coeff        se         t         p      LLCI      ULCI
constant     -.269      .142    -1.897      .059     -.549      .010
Zlaissez     -.173      .052    -3.331      .001     -.276     -.071
Zreconfm      .361      .052     6.902      .000      .258      .463
Sof          -.006      .059     -.098      .922     -.122      .110
Fage          .096      .049     1.962      .051      .000      .192
************************** TOTAL EFFECT MODEL ***********************
Outcome: ZCA
Model Summary
         R      R-sq       MSE         F       df1       df2         p
      .426      .181      .826    23.265     3.000   315.000      .000
Model
             coeff        se         t         p      LLCI      ULCI
constant     -.271      .144    -1.877      .061     -.555      .013
Zreconfm      .404      .051     7.854      .000      .303      .505
Sof          -.017      .060     -.284      .777     -.135      .101
Fage          .103      .050     2.076      .039      .005      .200
***************** TOTAL, DIRECT, AND INDIRECT EFFECTS
*****************
Total effect of X on Y
    Effect        SE         t         p      LLCI      ULCI
      .404      .051     7.854      .000      .303      .505


Direct effect of X on Y
    Effect        SE         t         p      LLCI      ULCI
      .361      .052     6.902      .000      .258      .463
Indirect effect of X on Y
            Effect   Boot SE  BootLLCI  BootULCI
Zlaissez      .043      .018      .013      .086
******************** ANALYSIS NOTES AND WARNINGS*********************
Number of bootstrap samples for bias corrected bootstrap confidence
intervals:
     5000
Level of confidence for all confidence intervals in output:
    95.00
                ------ END MATRIX -----
```

**D) Moderation and Moderated-mediation results**

```
Run MATRIX procedure:
************* PROCESS Procedure for SPSS Release 2.16.1*************
          Written by Andrew F. Hayes, Ph.D.       www.afhayes.com
    Documentation available in Hayes (2013).
www.guilford.com/p/hayes3
**************************************************************************
Model = 7
    Y = ZCA
    X = ZDC
    M = ZLS
    W = ZAMB
Statistical Controls:
CONTROL= Sof      Fage
Sample size
        319
**************************************************************************
Outcome: ZLS
Model Summary
         R      R-sq       MSE         F       df1       df2         p
      .449      .202      .811    15.850     5.000   313.000      .000
Model
             coeff        se         t         p      LLCI      ULCI
constant     -.298      .146    -2.046      .042     -.585     -.011
ZDC           .306      .058     5.282      .000      .192      .420
ZAMB          .189      .055     3.443      .001      .081      .297
int_1         .121      .046     2.614      .009      .030      .212
Sof          -.034      .059     -.567      .571     -.150      .083
Fage          .107      .051     2.107      .036      .007      .206
Product terms key:
 int_1    ZDC         X     ZAMB
**************************************************************************
Outcome: ZCA
Model Summary
         R      R-sq       MSE         F       df1       df2         p
      .574      .329      .679    38.508     4.000   314.000      .000
Model
             coeff        se         t         p      LLCI      ULCI
constant      .018      .133      .132      .895     -.245      .280
ZLS           .112      .050     2.238      .026      .014      .211
ZDC           .524      .051    10.296      .000      .424      .624
Sof          -.001      .054     -.015      .988     -.107      .106
Fage         -.006      .046     -.120      .905     -.097      .086
****************** DIRECT AND INDIRECT EFFECTS*********************
Direct effect of X on Y
    Effect        SE         t         p      LLCI      ULCI
      .524      .051    10.296      .000      .424      .624
Conditional indirect effect(s) of X on Y at values of the
moderator(s):
Mediator
         ZAMB    Effect   Boot SE  BootLLCI  BootULCI
ZLS    -1.000      .021      .016      .001      .070
ZLS      .000      .034      .023      .000      .089
ZLS     1.000      .048      .033     -.002      .123
Values for quantitative moderators are the mean and plus/minus one SD
from mean.
Values for dichotomous moderators are the two values of the
moderator.
****************** INDEX OF MODERATED MEDIATION ******************
```

```
Mediator
        Index  SE(Boot)  BootLLCI  BootULCI
ZLS      .014      .012      .000      .046
******************** ANALYSIS NOTES AND WARNINGS**********************
Number of bootstrap samples for bias corrected bootstrap confidence
intervals:
     5000
Level of confidence for all confidence intervals in output:
    95.00
NOTE: The following variables were mean centered prior to analysis:
 ZDC      ZAMB
------ END MATRIX -----
```