STRATEGIC DRIVERS INFLUENCING PRODUCTION RESHORING DECISION AMONG MANUFACTURING MULTINATIONAL CORPORATIONS IN KENYA

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Strategic Drivers Influencing P roduction Reshoring Decision Among Manufacturing Multinational Corporations in Kenya

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DECLARATION

This thesis is my original work and has not been presented for a degree in any other university

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DEDICATION

This research is dedicated to my wife Mildred and my children David, John and Kairu for their prayers and support throughout the entire period of the study. Your encouragement enabled me to keep going until completion.

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May the Ancient of Days meet your needs accordingly to His riches in glory.

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LIST OF ABBREVIATIONS AND ACCROYNMS

AGOA	African Growth and Opportunity Act (2000)
EAC	East African Community
ERBV	Extended Resource-based View
FDI	Foreign Direct Investment
GOK	Government of Kenya
IACC	International Anti-Counterfeiting Coalition
IASSC	International Association for Six Sigma Certification
KAM	Kenya Association of Manufacturers
KIPPRA	Kenya Institute of Public Policy Research and Analysis
MNCs	Multinational Corporations
NACOSTI	National Commission for Science, Technology and Innovation
OECD	Organization for Economic Co-operation and Development
PRA	Property Rights Alliance
RBV	Resource-based View
TCE	Transaction Cost Economies
UK	United Kingdom
UNIDO	United Nations Industrial Development Organization

US	United States of America
WBG	World Bank Group
WEF	World Economic Forum

OPERATIONAL DEFINITION OF TERMS

Hidden Cost: Hidden cost refers to wrong estimation of benefits and risk when making the initial decision to move production to an offshore location (Kinkel & Maloca, 2009). Under estimation of offshore location coordination costs and risk of theft and loss of intellectual property operation costs are hidden costs that are initially unforeseen (Moser & Beyer, 2011; Larsen et al., 2011).

Market Condition: Market condition refers to the characteristics or features within industry sectors that affect both buyers and seller. Features such as market size, share of production sold in host and home countries and growth rates influence manufacturing decisions. Wu and Zhang (2014) posit that market size and demand volatility are major drivers in production reshoring.

Multinational Corporation: A Multinational corporation (MNC) refers to a company that has an integrated global philosophy encompassing both domestic and foreign operations in more than one country. MNCs have production activities in two or more countries (Hill, 2005). Multinational corporations are usually large entities with operations across national boarder (Daniels, Radebaugh & Sullivan, 2009).

Production Cost: Production cost refers to the cost incurred by a manufacturing entity to create or produce a product. It denotes the various types and forms of costs that go into the production process and include direct labour cost and

direct factory overheads cost (such as, energy, consumable supplies, other factory costs (Jones & Kay, 2007).

Product Quality: Product quality refers to the features and characteristics of a product that determines a consumer's desirability of the product. Manufacturing entities strive to ensure that their products meet and exceed customer expectations (Miskolci, 2011). Research studies show that there is a correlation between a consumers' propensity to purchase a product and the perceived quality of the said product (Miskolci, 2011).

Operational Flexibility: Operational flexibility refers to the ability of a multinational manufacturing entity to respond quickly to changing demands of a customer with little or no effect on time, cost or performance. Operational flexibility is a multinational corporation's ability to transfer resources between different locations in response to changes in its operating environment (Kogut, 1985; Fisch & Zschoche, 2012).

Reduced Time to Market: Reduced time to market refers to the efforts of MNCs to shorten the delivery times to end customers in the markets that they serve. Supply chain disruptions may result in increased costs along the value chain (De Backer et al., 2016; Wilkinson et al., 2015).

Reshoring Decision: Reshoring refers to the decision of a multinational manufacturing entity to relocate its production activities from an offshore location to its home country or another

location nearer its home base. Kinkel and Maloca (2009) see reshoring as the re-concentration of parts of production from a multinational corporation's own foreign locations as well as from foreign suppliers to the MNC's domestic production site.

Strategic Drivers: Strategic drivers refers to the pull and push factors that are influencing manufacturing multinational corporations to make decisions to reshore production. Weismann *et al*. (2017) note that drivers for reshoring result from competitive dynamics in the global landscape, MNCs home and host country, supply chain and firm specific dynamic.

ABSTRACT

The global manufacturing landscape has over the last few decades been dramatically transformed by offshoring strategies as large manufacturing entities from Western Europe and the United States of America moved their production activities to low-labour cost locations. Offshoring and outsourcing strategies have contributed significantly to the globalization of manufacturing activities. More recently since the 2007 - 2008 global financial crisis reshoring of production has gained prominence among multinational corporations with increased cases of production reshoring recorded. This study sought to explore the strategic drivers influencing production reshoring decision among manufacturing multinational corporations in Kenya and was guided by the following research objectives; finding out extent to which production cost, product quality, operational flexibility, reduced time to market and hidden cost influenced reshoring decision. The study also considered the moderating influence of market condition on the relationship between the independent variables and the dependent variable. The study adopted cross sectional research design and census method. The study targeted 96 manufacturing multinational corporations with membership at the Kenya Association of Manufacturers. The study achieved a response rate of 88.4%. Binary logistic regression model was used to examine the influence of the study variables on reshoring decision. The study found that production cost, product quality, operational flexibility, reduced time to market and hidden cost have positive and significant influence on production reshoring decision. Further the moderating variable market condition was found to have a moderating influence on the relationship between the independent variables and dependent variable. The inclusion of all the five independent variables and the moderating variable explained 78.9% of the changes in reshoring decision for every change in all the predictor variables. The study model was found to be the optimal model. The study made a number of recommendations including; need for policy interventions by the Kenyan Government on manufacturing costs in order to realize the aspirations of Kenya's Vision 2030 on industrialization; investment in agile manufacturing by MNCs to improve production process sophistication and capacity for short production runs; investment in supportive infrastructure to improve supply chain efficiencies and enable manufacturing entities improve on customer responsiveness and overall competitiveness of the sector. Finally, the Kenyan government should strengthen intellectual property laws and enhance enforcement to reduce manufacturing losses arising due to presence of counterfeit products and intellectual property theft.

CHAPTER ONE

INTRODUCTION

This chapter introduces the study by briefly describing the background of manufacturing multinational corporations' global and local perspectives, statement of the problem, objectives of the study, scope, and justification of the study.

1.1 Background of the Study

The global manufacturing landscape has over the last few decades been dramatically transformed by offshoring strategies as large manufacturing entities from Western Europe and the United States of America moved their production activities to low-labour cost locations. Central and Eastern Europe and South East Asia become favourite destinations for these multinational corporations (Bailey & De Propris, 2014). For the period between 1970 to 2010 G7 nations share of global manufacturing value added declined from 71% to 46% with much of the share being taken by emerging economies. During this period manufacturing output ranking indicated a decline in share of global manufacturing for Western Economies (West & Lansang, 2018). The United States dropped from position one in 1970 to position two in 2010, while the United Kingdom moved from position six in 1970 to position 10 in 2010 (West & Lansang, 2018). This contrasted with performance of manufacturing in South East Asia countries. Manufacturing output ranking saw South Korea move from position 17 in 1970 to position five in 2010 while China's performance improved from position five in 1970 to position one in 2010 (West & Lansang, 2018).

Results from Kinkel (2012) show China as one of the most attractive manufacturing destination accounting for 27% of production offshoring activities post 2007 global financial crisis. This has contributed to fragmentation of corporate value chains thus creating global value chains for these manufacturing entities (Krugman, 1995; Colovic & Mayrhofer, 2011). Whilst China continues to be the preferred destination for off-

shoring and outsourcing, Baldwin and Lopez-Gonzalez (2014) note the resurgence in manufacturing in some of Western European and North American countries share of global manufacturing output. The United Kingdom had improved its ranking to position eight by 2015 while Canada improve by one position to 13th in the same period (West & Lansang, 2018). Offshoring and outsourcing strategies have contributed significantly to the internationalization and globalization of manufacturing activities (Baldwin & Lopez-Gonzalez, 2014).

More recently the phenomenon of reshoring has gained prominence in popular and specialized press (Booth, 2013) with increased reporting on reversal of prior offshoring decision. Sirkin, Zinser and Hohner (2011) note that several multinational corporations had moved their production back to home countries or to new locations. In 2012, General Electric Company announced its intention of reshoring its appliances manufacturing from plants in China to the USA while Apple intended to manufacture its Mac computers exclusively in the USA beginning 2013 (Gray, Skowronski, Esenduran & Rungtusanatham, 2013). Other manufacturing entities from developed countries have signaled their intention to reconsider their previous offshoring decision (Bailey & De Propris, 2014).

The field of reshoring is still emerging (Wiesmann, Snoei, Hilletofth & Eriksson, 2017). However, there is lack of consensus in what is driving the reshoring phenomenon, whether reshoring is an adjustment of prior strategic errors or the next big thing in global manufacturing realignment (Kinkel & Maloca, 2009; Gray et al., 2013). Consequently, a better understanding of the strategic drivers for reshoring helps in providing better insight into the reshoring phenomenon. Though the field of reshoring is relatively new there are indications that reshoring is likely to play a significant role in the reshaping and reconfiguration of manufacturing globally. Indeed, some scholars have already indicated that reshoring is reshaping the global manufacturing landscape (Brennan, Ferdows, Godsell, Golini, Keegan, Kinkel, Srai & Taylor, 2015). The purpose of this study was to

explore the strategic drivers for production reshoring decision among Kenya's manufacturing multinational corporations.

1.1.1 Global Perspective on Reshoring

The quest to achieve production cost competitiveness has seen many western manufacturing entities move their production to low-cost locations over the last two and half decades. Indeed, the dominant strategy for manufacturing entities over this period has been manufacturing offshoring (Baldwin & Lopez-Gonzalez, 2014; Cohen et al., 2016). More recently there has been increased activity in reversal of offshoring. Interest in reshoring phenomenon has also been on the rise.

The reshoring debate has received attention from policy makers and consultants (Fondiller, 2013). However, the reshoring phenomenon has only received much attention from academia in the last few years. In the United States of America, the reshoring policy debate is currently a prominent topic of discussion. President Obama at the commencement of his second term presided over a White House forum on reshoring (De Backer, Menon, Desnoyers-James & Moussiegt, 2016) articulating his administration's desire to driving policy changes to favour reshoring. Reshoring has been seen by policy makers as an answer to re-industrialization of Western economies with reshored production being a source of employment creation (Kinkel & Maloca, 2009). The debate has been less prominent in Europe with exception of the United Kingdom, Germany, Sweden and Italy (Fratocchi, Di Mauro, Barbieri, Nassimbeni & Zanoni, 2014).

In the current reshoring debate terms such as backshoring, onshoring and nearshoring are being used interchangeably to refer to reshoring phenomenon (De Backer et al., 2016) though it is still not clear from literature whether we can attribute same meaning to these terms. Kinkel and Maloca (2009) define reshoring as the re-concentration of parts of production from a multinational corporation's own foreign locations as well as from foreign suppliers to the manufacturing entities' domestic production site. Ellram, Tate and Petersen (2013) see it as backshoring (onshoring) or manufacturing moving

back to its parent company. Nearshoring on the other hand has been defined as relocating of previously offshored activities to the parent company's home location or nearer location (De Backer et al., 2016). Irrespective of the varying terms and definitions of reshoring, there is general acknowledgement that the phenomenon is a production activities location decision that the firm's top management must consider in their strategic decision making.

The academic debate around reshoring has developed along different paths consistent with the relevant theories on evolution of firms' organizational forms and globalization (Bailey & De Propris, 2014). Scholars see reshoring differently. Ellram, Tate and Petersen (2013) see reshoring as being driven by total costs of operations considerations and value capture; a correction of prior strategic judgmental errors of offshoring decisions (Gray et al., 2013) and volatility of demand with relatively small and segmented markets driving reshoring (Wu & Zang, 2013). According to Wiesmann *et al*. (2017) strategic drivers influencing reshoring decision include five sets of dynamics; global competitive dynamics, host country, home country, supply chain and firm-specific dynamic. Research studies have associated strategic drivers with multinational corporations' reshoring decision (Kinkel & Maloca, 2009; Kinkel, 2012; Ellram, Tate & Petersen, 2013; Bailey & De Propris, 2014; De Backer et al., 2016).

Global dynamics result in changes in regional attractiveness arising from eroding comparative advantages (Kinkel, 2012; Ellram et al., 2013; Tate et al., 2014; Arbjorn & Mikkelsen, 2014). Increase in production cost such as rise in labour and energy cost has been found to be a major driver in erosion of comparative advantage (Kinkel, 2012; Ellram, Tate & Petersen, 2013; Bailey & De Propris, 2014;). Host country drivers include challenges on product quality, intellectual property theft risk and diminishing growth opportunities (Kinkel, 2012; Ellram et al., 2013; Bailey & De Propris, 2014). Inability to transfer manufacturing process and quality assurance knowhow to the host country contributes to challenges on product quality (Kinkel & Maloca, 2009). Reshoring has been associated with manufacturing MNCs acting to protect integrity of

their brands from intellectual property theft (Adroer, 2015). Product quality and hidden cost are host country dynamics that have been identified as drivers influencing reshoring (Kinkel & Maloca, 2009; Ellram et al., 2013). Diminishing growth opportunities relate to market condition in host country which include share of production sold in host country. Wu and Zang (2014) posit that market size and demand volatility are major drivers in production reshoring. Incentives such as strengthening brand in home market and political incentives to create goodwill are associated with home country dynamics and contribute to reshoring decision (Bailey & De Propris, 2014; De Backer et al., 2016).

Changing customer preferences such as delivery performance (reduced lead times and dependability), increased demand for customization and transportation inefficiencies are supply chain drivers that can drive manufacturing multinationals to consider reshoring (Kinkel & Maloca, 2009; Kinkel, 2014). The need for operational flexibility to meet unique customer orders and reduce time to market to service customer orders are strategic drivers associated with reshoring decision (De Backer et al., 2016). In making the original decision to reshore a firm may have had limited information on costs and benefits arising from the offshoring decision. Immergence of hidden cost can erode the perceived advantages of offshoring and lead to reversal of the decision (Kinkel & Maloca, 2009; Wiesmann et al., 2017). Similarly, wrong estimation of benefits and risk whilst making the original decision to offshore may drive firms to reshore production (Kinkel & Maloca, 2009; Moser & Beyer, 2011).

Industrialized countries in the West are beginning to take keen interest in the reshoring phenomenon. In the United Kingdom reshoring debate is seen as an opportunity to rebalance the U.K. economy (De Backer et al., 2016); for the United States the reshoring debate is around bringing manufacturing jobs back to America (Ellram, Tate & Petersen, 2013) while in Italy the central theme is on 100% “made in Italy” which is encouraging Italian firms to bring production back home (De Backer et al., 2016; Fratocchi et al.,

2014). Reshoring is likely to play a significant role in reshaping the structure of the global manufacturing industry as opined by Fondiller (2013).

1.1.2 Regional Perspective on Production Reshoring

El-Khasawneh (2012) opines that manufacturing is extremely important for the modernization of any country. For Africa economies, manufacturing holds the key for increased job opportunities and economic growth. However, over the last decade the manufacturing sector in Africa has faced numerous challenges; competition from global manufacturing players, infrastructural deficiencies (Muogboh, 2016) and dumping (Were, 2016). Manufacturing industry in Nigeria faces high transactional cost challenges driven by infrastructure deficiencies (energy, water and road network) and increased competition from cheaper imports from China (Muogboh, 2016). Similar challenges are shared by Kenya manufacturers where low capacity utilization, productivity constraints and high production costs are constraining the manufacturing sector (KAM, 2012)

Share of manufacturing value added for Africa remains insignificant compared to developed and emerging economies. A United Nations Industrial Development Organization (UNIDO, 2017) report on World manufacturing statistics for quarter four 2016 puts the share of manufacturing valued added for Africa at 1.2% against 19.9% for China. According to UNIDO (2017) individual countries performance recorded mixed results, majority of the countries registering a decline in manufacturing output. South Africa the region's top manufacturing country recorded a decline of 0.6% against the continent's average decline of 0.5%. A review of East African countries' manufacturing performance indicates faster growth rates for Ethiopia, Rwanda, Tanzania and Uganda in comparison to manufacturing growth for Kenya (Were, 2016). Specifically, some of these countries (Ethiopia, Tanzania and Uganda) have made deliberate steps to repositioning themselves as manufacturing investment destination in the region (Were, 2016). Increased competition for foreign direct investments within the region is likely to result in manufacturing realignments. Over the last five years inter-country data between Uganda, Tanzania and Kenya indicates that Kenyan manufacturing exports to the two

countries has decline by 5.4% and 29.5% respectively in 2017 compared to 2013 (GoK, 2018a). Kenya has come up with a robust industrial transformation programme aimed at making the country achieve industrialized status by the year 2030 (GoK, 2015) to counter initiatives by it competing neigbours.

Empirical data on reshoring activities within Africa is scarce. UNIDO (2017) posits that manufacturing data for Africa manufacturing entities is difficult to access. Nevertheless, reshoring activities have been reported in South Africa and Kenya. Klein, Wocke and Hughes (2014) have reported on relocation for South African multinational enterprises while Nthigah, Iravo, & Kihoro (2014) noted increased production relocation for Kenyan manufacturing firms. Considering limited empirical evidence on reshoring activities for multinational corporations operating within Africa, this study sought to provide insights into manufacturing MNCs reshoring activities in Kenya.

1.1.3 Manufacturing Industry in Kenya

Kenya's manufacturing sector dates to the pre-independent years when some of the current multinational corporations began manufacturing operations. When Kenya gained independence in 1963, the new government was keen to up the pace of industrialization for employment creation and accelerate economic growth (Chege, Ngui & Kimuyu, 2014). The pursuit of import substitution policy and enactment of legislation to support FDI such as the Foreign Investments Act of 1964 and establishment of a New Projects Committee in 1968 were part of the desire to industrialize. This contributed to the growth of manufacturing in the first decade of Kenya's independence (Chege, Ngui & Kimuyu, 2014).

The decades of the 1970s and 1980s were the most turbulent for Kenya's manufacturing sector. The external shocks brought about by the oil crisis of the 1970s, the structural adjustment programs by the World Bank in the 1980s and market liberalization in the 1980s and 1990s impacted negatively on the manufacturing sector (Chege, Ngui & Kimuyu, 2014). The dream of accelerated industrialization as envisaged at independence

became elusive. The performance of the sector has not kept pace with the expectations of policy makers. Manufacturing sector's contribution to GDP has been on been on a declining trend over the last few years from a high of 10.8% in 2008 to 8.4% in 2017 (GoK, 2018).

The 2017-2018 World Economic Forum global competitiveness index places Kenya's global competitiveness at position 91 (WEF, 2018) up from position 96 in 2016 but down from position 90 in 2013 (WEF, 2014; WEF, 2016). Environment changes characterized by reducing commodity prices and greater difficulties in accessing capital are some of the factors responsible for the declining growth prospects of the Kenyan economy (WEF, 2014; WEF, 2016). According to World Bank Group (2014) Kenya's manufacturing sector's competitiveness relative to its East Africa Community counterparts has been declining and growth of the sector lagging behind overall economic growth further underlining the difficulty economic conditions in comparison to other economies. The sector also suffers from limited value addition and diversification, high cost of inputs and low competitiveness (KIPPRA, 2013; WBG, 2014).

Kenya's Vision 2030 has identified manufacturing as one of the key drivers of economic growth due to its ability to stimulate the growth of other sectors and its high potential for employment creation and export expansion (GoK, 2014). The competitiveness of the manufacturing sector is critical to a larger extent in the achievement of the ambitious goals of Kenya's Vision 2030 (WBG, 2014). However, Kenyan manufacturing entities have not been able to harness the opportunities provided by the African Growth and Opportunity Act (2000), (AGOA), with the share of manufacturing export trade standing at 0.8% as at 2013. This compares unfavourably with countries such as Angola's 20% and South Africa's 17% respectively (KIPPRA, 2013). Further low capacity utilization and productivity constraints (KAM, 2012) have contributed to the challenges being faced by manufacturing entities in Kenya (KAM, 2012). As part of its medium-term development objectives, the Kenya government identified manufacturing as part of its

Big Four Agenda (GoK, 2018a). The focus on manufacturing is to raise its contribution to GDP from 8.5% in 2017 to 15% by 2022. The government's move is in recognition of the potential of the manufacturing sector's contribution to industrialization as envisaged in Kenya's Vision 2030.

1.1.4 Manufacturing Multinational Corporation in Kenya

The history of multinational corporations in Kenya is synonymous with the history of manufacturing in this country. With Kenya's independence in 1963, the new government was manufacturing as the catalyst for quick industrialization for employment creation and accelerate economic growth (Chege, Ngui & Kimuyu, 2014). It is the pursuit of import substitution policy and enactment of supportive legislation by the Kenyan government in 1968 that saw the growth of multinational manufacturing entities in Kenya.

MNCs based in Kenya constitute less than 5% of the total number of manufacturing enterprises but account for over 60% of manufacturing contribution to the country's GDP (GoK, 2018a) thus underlining their importance to Kenya's economic growth. However, the performance of MNC's in Kenya has witnessed varied outcomes over the last decade (GoK, 2018a). During the last decade, the sector's growth has been hindered by increased production relocation by several MNCs (Nthigah et al., 2014; Maina, 2014). According to Nthigah *et al.* (2014) 12% of MNC's had relocated their production activities from Kenya between 2005 and 2014. Several production relocation activities have been witnessed in the last two years (GoK, 2018a).

1.2 Statement of the Problem

The debate in reshoring is generating considerable discourse among policy makers, practitioners and scholars. Policy makers consider the reshoring phenomenon as a resurgence of Western manufacturing leading to re-industrialization of the USA and Europe (Brennan et al., 2015); practitioners predict that reshoring is the next big thing in

manufacturing realignment (Fondiller, 2013). In the case of scholars considerable disagreements are evident regarding the importance of the reshoring phenomenon. Some scholars see reshoring as insignificant (De Backer et al., 2016) others consider it a correction of prior strategic judgmental errors of offshoring decisions (Gray et al., 2013) and yet others suggest that the pace of reshoring is unlikely to be greater than that of offshoring in the coming years (Brennan et al., 2015).

The field of reshoring is still emerging (Weissmann et al., 2017). There is consensus among scholars that reshoring is gaining importance and further empirical evidence is required for a better understanding of reshoring drivers (Fratocchi, Ancarani, Barbieri, Di Mauro, Nassimbeni, Sartor, Vignoli & Zanoni, 2016) and its evolution in the future and impact on business decisions. Reshoring activities continue to grow from 2.5% of German manufacturing firms that had reshored production in 2009 (Kinkel & Maloca, 2009) to 800 US manufacturers in 2015 (Moser, 2016). In 2013 the number of manufacturing entities considering reshoring stood at 54% of US manufacturing firms (Fondiller, 2013) and 16% for the U.K. (Bailey & De Propris, 2014).

Kenya's manufacturing sector is critical for the attainment of the country's Vision 2030. However, Kenya's quest for accelerated industrialization is unlikely to be realized due to declining competitiveness, relative stagnation of the manufacturing sector (WBG, 2014) and realignments that have taken place in the sector in the last decade. During the same period 12% of MNCs have relocated their production activities outside Kenya (Nthigah, et al., 2014; Maina, 2014) resulting in negative impact on the sector's employment creation ability and contribution to GDP (KAM, 2012). The declining performance of the manufacturing sector in Kenya is of major concern to both policy makers and sector players (Maina, 2014).

Uncertainty remains on the influence of regional characteristics on reshoring (Bailey & De Propris, 2014; Fratocchi et al., 2016). Furthermore, the question whether reshoring is more pronounced in certain subsectors of the manufacturing industry remains unclear.

Studies on reshoring have been carried out in a number of countries such as Germany (Kinkel & Maloba, 2009; Fisch & Zschoche, 2012), Spain (Martinez-Mora & Merino, 2014), Denmark (Arlbjorn & Mikkelsen, 2014), Finland (Gylling, Heikkila, Jussila & Saarinen, 2015), New Zealand (Canham & Hamilton, 2013) and USA (Ellram, Tate & Petersen, 2013).

Findings by Kinkel and Maloca (2009) show reshoring as correction of prior misjudgment of offshoring decision which though consistence with Gylling *et al*. (2015) contradicts findings by Fratocchi *et al*. (2016). The study by Wu and Zang (2014) used game-theoretic model to stimulate firms' sourcing decisions while Grappi, Romani and Bagozzi (2015) used experimental design with manipulation of company reshoring strategies among the selected study subjects. Martinez-Mora and Merino (2014) used non-continuous data in determining the relationship between the study variables. The study did not consider the relationship between share of production sold in host country and its moderating influence on the relationship between the independent variables and dependent variable. Canham and Hamilton (2013) focused on small and medium enterprises in New Zealand. The remoteness of New Zealand and its large distances to low cost locations in South East Asia is a limiting factor on generalizing of findings to other contexts. Fratocchi *et al*. (2016) used secondary data drawn from non-academic sources. Undertaking a study on production reshoring among Kenya's manufacturing MNCs would provide a better understanding of the strategic drivers influencing reshoring in the Kenya manufacturing context. Further a study on the moderating influence of market condition on the relationship between the independent variables and the dependent variable would contribute to empirical knowledge on reshoring. This study sought to explore strategic drivers influencing production reshoring decision among Kenya's manufacturing multinational corporations.

1.3 Objectives of the Study

This section considers the general and specific objectives of the study.

1.3.1 General Objective

The general objective of the study was to explore strategic drivers influencing production reshoring decision among manufacturing multinational corporations in Kenya

1.3.2 Specific Objectives

The specific objectives of this study were:

1. To explore the influence of production cost on production reshoring decision among Kenya's manufacturing multinational corporations.
2. To establish the influence of product quality on production reshoring decision among Kenya's manufacturing multinational corporations.
3. To assess the influence of operational flexibility on production reshoring decision among Kenya's manufacturing multinational corporations.
4. To determine the influence of reduced time to market on production reshoring decision among Kenya's manufacturing multinational corporations.
5. To explore the influence of hidden cost on production reshoring decision among Kenya's manufacturing multinational corporations.
6. To assess the moderating influence of market condition on the relationship between strategic drivers and production reshoring decision among Kenya's manufacturing multinational corporations.

1.4 Research Hypotheses

This study aimed to test the following hypotheses

H_{01}: Production cost does not influence production reshoring decision among Kenya's manufacturing multinational corporations.

H_{02}: Product quality does not influence production reshoring decision among Kenya's manufacturing multinational corporations.

H_{03}: Operational flexibility has no influence on production reshoring decision among Kenya's manufacturing multinational corporations.

H_{04}: Reduced time to market has no influence on production reshoring decision among Kenya's manufacturing multinational corporations.

H_{05}: Hidden cost has no influence on production reshoring decision among Kenya's manufacturing multinational corporations.

H_{06}: Market condition has no moderating influence on the relationship between strategic drivers and production reshoring decision among Kenya's manufacturing multinational corporations

1.5 Scope of the Study

The scope of the study was limited to manufacturing multinational corporations based in Kenya who are registered members of the Kenya Association of Manufacturers (KAM). The study included large multi-regional manufacturing companies in Kenya (companies having presence in more than two countries) with a total of 96 senior managers drawn from 96 MNCs forming the target population for the study. The researcher considered five independent variables and one moderating variable in the study.

1.6 Justification for the Study

Manufacturing has been identified as one of the key drivers of economic growth by Kenya's Vision 2030 due to its ability to stimulate the growth of other sectors and high potential for employment creation and export expansion (Maina, 2014; WBG, 2014). In their study on multinational corporations in Kenya, Nthiga *et al.* (2014) concentrated on influence of competitive intensity on strategic responses of such MNCs. The study by KAM (2012) focused on competitive challenges affecting manufacturing firms in Kenya. Previous studies on manufacturing industry in Kenya have not considered strategic drivers for production reshoring. Multinational corporations were chosen because of their integrated global philosophy which encompasses both domestic and foreign operations (Daniels, Radebaugh & Sullivan, 2009). MNCs based in Kenya constitutes less than 5% of the total number of manufacturing enterprises but account for over 60% of manufacturing contribution to the country's GDP (GoK, 2018).

Identification of strategic drivers influencing reshoring decision among Kenyan's manufacturing MNCs would help inform policy towards improving Kenya's attractiveness and industrialization initiatives while manufacturing sector players will gain a better understanding of strategic drivers for production reshoring. The study would also contribute to scholarly knowledge and a better understanding of production reshoring drivers for MNCs operating in Kenya.

1.7 Limitations of the Study

The study considered manufacturing MNCs in Kenya operating in 12 industry sector whose production cost structures, operational configurations and marketing dynamics were varied and diverse, notably energy and labour consumption levels and cost. The limitation was overcome by use of industry sector production indices. The study involved both Kenyan owned MNCs and subsidiaries of international MNCs. Strategic decisions for some subsidiaries of international MNCs are made at the global head office with little input from local subsidiary senior management. The study encountered a few

of such cases but this was limited to only 2% of the international MNCs studied and did not have any significant influence on the study findings.

CHAPTER TWO
LITERATURE REVIEW

2.1 Introduction

This chapter reviews the relevant literature on strategic drivers influencing production reshoring decision. The chapter develops the theoretical framework for the study and reviews empirical literature in order to develop the conceptual framework to be used in the study. It also highlights and discusses variables used in the study and relevant empirical literature on reshoring phenomenon and identified research gaps.

2.2 Theoretical Review

According to King, Keohane and Verba (1994) theories are tools that help focus attention upon the most important factors of a given phenomenon and help researchers understand, explain and predict phenomena. Theoretical frameworks are explanations about the phenomenon and provide the researcher the lens to view the world. This study was based on the following theories: Transaction cost economies (TCE), Resource-based view (RBV), Dynamic capabilities theory and Eclectic paradigm framework which are discussed in next section.

2.2.1 Transaction Cost Economies

Transaction cost economies (TCE) emanated from the works of Ronald Coase (1937) and his seminar work on the nature of the firm. Coase (1937) opines that some transaction costs would be best performed by the firm while others by the market and developed a theoretical framework for determining the same. The theory was further developed through the works of Williamson (1985). According to Williamson (1985) transaction costs include both ex-ante costs and ex-post costs. Ex-ante costs include searching and information, drafting and negotiating an agreement and costs of

safeguarding the agreement. Ex-post costs include (i) costs of evaluating the unit (ii) costs measuring of output and costs of monitoring and enforcement (William, 1985) all organized under a governance structure. Williamson defined a governance structure as an institutional framework in which the integrity of a transaction or related set of transactions is decided.

The basic argument of TCE is that decision makers will choose whichever governance structure that minimizes the total cost associated with a transaction (Coase, 1937; Williamson, 1985). TCE argues that transactions have distinct characteristics that, in combination with the attributes of alternate governance structures, produce different production and transaction costs. He further suggested that characteristics of transactions can affect transaction costs. According to Martins, Serra, Leite, Ferreira and Li (2010) TCE assumed that transaction costs will be influenced by motivations of human behaviour (opportunism with guile and bounded rationality) and environmental (transaction) characteristics. The three key transaction characteristics are asset specificity (durable investments that can be undertaken in support of particular transactions) uncertainty (lack of perfect information), and frequency of transactions (how often a transaction is carried out). Asset specificity refers to the alternative uses an asset can be deployed to without substantive productive value sacrifice for such an asset (Williamson, 1985). Governance structures on the other hand have a varying ability to cope with certain kinds of uncertainty; with higher levels of uncertainty, firms tend to produce products and services internally (Martins et al., 2010); frequency of transactions influences both transaction and production costs.

TCE has been used in examining firms' choices on reshoring strategy decisions. Bailey and De Propris (2014) used TCE in analyzing manufacturing reshoring decisions in the U.K. automotive industry. Considering TCE, production costs are an accumulation of transactions involving production activities carried out in a particular location. Similarly, coordination costs are as a result configuration of governance structure and resulting

transaction costs. TCE was used for the study of independent variable one production cost and independent variable five hidden cost and to test hypothesis one and five.

2.2.2 Resource-based View

The resource-based theory (RBV) is today one of the most prominent and widely cited theories in the history of management theorizing. RBV seeks to explain and predict organizational relationships and the internal sources of a firm's sustainable competitive advantage (Kraaijenbrink, Spender & Groen, 2010; Barney, Ketchen Jr. & Wright, 2011). Works by Lippman and Rumelt (1982), Wernerfelt (1991) and Barney (1991) has contributed significantly to the development of the resource-based view (RBV). Penrose (1959) identified the importance of a firm's resources particularly in influencing growth and success of the firm urging that when resources are inadequate, the growth of the firm is constrained.

Barney (1991) developed the core tenets of the RBV noting that competitive advantage of a firm results from possession of resources that are valuable, rare, and inimitable (VRI). Resources can be evaluated using the VRI framework. Over the last twenty years RBV has evolved and given rise to other concept such as dynamic capabilities, knowledge capabilities, micro-foundations and extended resource-based perspective (Barney, Ketchen Jr. & Wright, 2011; Knoben, 2011). From RBV perspective, bundles of productive resources are heterogeneous across a firm. A firm is therefore seen as a collection of capabilities with firms in possession of superior resources able to earn economic rents (Peteraf, 1993). Extended resource-based view (ERBV) proposes the inclusion of geographic space and the inclusion of external resources to the RBV theory.

ERBV posits that different geographic regions have different endowments of resources and a firm's access to these resources depends on its position in the geographic space. A firm's decision to relocate is therefore influenced by the external resources at a given location (Peteraf, 1993; Knoben, 2011). RBV has been found suitable for the study the

reshoring phenomenon and has been used in several recent studies (Adroer, 2015; Fisch & Zschoche, 2012; Ellram, Tate & Petersen, 2013). The RBV theory was used to study the second independent variable product quality and test hypothesis two.

2.2.3 Eclectic Paradigm Framework

The eclectic paradigm was proposed by Dunning (1980; 1988) to explain the development of offshored activities by multinational enterprises. The eclectic paradigm combines several components of previous theories to form the eclectic paradigm of international business. These theories are internationalization (Ronald Coase, 1937) and resource dependence theory (Pfeffer & Salancik, 1978). Dunning (1980) posits that MNCs actualize international investment decisions when international advantages are present. This theory emphasizes the desire of firms to seek advantages that will bring maximum benefit to their business operations. According to Dunning (1980) firms choosing to internationalize their activities consider three key determinants ownership, location and internationalization advantages (OLI framework). Dunning's (1988) OLI framework identifies four main types of foreign direct investments (FDI) for multinational corporations namely, resource seeking, market seeking, efficiency seeking and strategic asset seeking. Although the OLI framework is mainly used for the evaluation of offshoring decision, the location advantages are relevant for research on reshoring. Resource seeking advantages related to location include access to raw materials, low cost labour, infrastructure and network of customers. Market seeking advantages related to location advantages include access to suppliers' network and domestic market. Efficiency seeking advantages include cost-related factors and diminishing trade barriers (Snoei & Weismann, 2015). Table 2.1 provides the relationship between the eclectic theory and reshoring survey constructs.

Table 2.1: Relationship Between Eclectic Theory and Reshoring Study Constructs

Eclectic Theory	Reshoring Study Constructs
Resource seeking advantage	Lower labour cost, lower logistic cost and lower energy cost
Market seeking advantage	Proximity to customers
Efficiency seeking advantage	Shorter lead times, supply chain interruption risk, coordination risk

The OLI framework has been used in the study of reshoring strategy decision. Ellram, Tate and Petersen (2013) used the OLI framework in their study on offshoring and reshoring. Manufacturing entities pursue operational flexibility as part of improving their efficiency in manufacturing processes. The OLI framework was used for the study of the third independent variable operational flexibility and test hypothesis three since operational flexibility falls within the efficiency seeking advantages that a firm would pursue making offshoring and reshoring decisions.

2.2.4 Dynamic Capabilities Theory

Dynamic capabilities theory (DCT) was initially introduced by Teece and Pisano (1994). They urge that while RBV recognizes the mechanisms for facilitate competitive advantage, it is incapable of explaining how these mechanisms interact to create sustainable competitive advantage particularly in rapidly changing environments. DCT was necessitated by the desire to address the shortcomings of RBV. "Dynamic capabilities as the firm's ability to integrate, build and reconfigure internal and external competences to address rapidly changing environments" (Teece, Pisano & Shuen, 1997, p. 516). DCT is closely linked to resource-based theory as it posits that a firm's invisible assets are essential for creating a sustainable competitive advantage (Itami, 1991).

DCT identifies three classes of factors that help explain the source of competitive advantage; processes, positions and paths (Teece & Pisano 1994). Processes are the routines or way things are done within an organization, position refers to an organization's specific asset endowment such as customers, intellectual property and relations with stakeholders and paths refers to the organizations current and future strategic alternatives. Consequently, a firm's competitive advantage lies with its managerial and organizational processes, is shaped by specific firm endowments and the strategic alternatives available to the firm. Managerial routines provide opportunities for knowledge accumulation and learning.

Eisenhardt and Martin (2000) urge that in moderately dynamic markets, the routines are embedded in cumulative existing knowledge which is the source of dynamic capabilities. They further posit that in pursuit of long-term competitive advantage, existing resource configurations can be enhanced by dynamic capabilities. The presence of dynamic capabilities in an organization does not in itself mean that such a firm will gain competitive advantage rather it is the deployment of such capabilities that is the source of competitive advantage. Development of dynamic capabilities follows a unique path for a given organization with each organization's learning mechanisms shaping such a path (Eisenhardt & Martin, 2000). Dynamic capabilities follow the principle of equifinality. Dynamic capabilities theory has been found suitable for the study the reshoring phenomenon (Adroer, 2015) and was used for the study of the fourth independent variable reduced time to market and test hypothesis four.

2.3 Conceptual Framework

Different authors have proposed various definitions of the term Conceptual framework all of which are closely related (Miles & Huberman, 1994; Robson, 2003; Marshall & Rossman, 2011; Bloomberg & Volpe, 2012). A conceptual framework can be summarized as a model or tool providing linkage between the theory, research questions, study methodology and objectives. The conceptual framework diagram in Figure 2.1 is

a diagrammatical representation of the relationship of the various variables of the study. This section discusses the variables of the study.

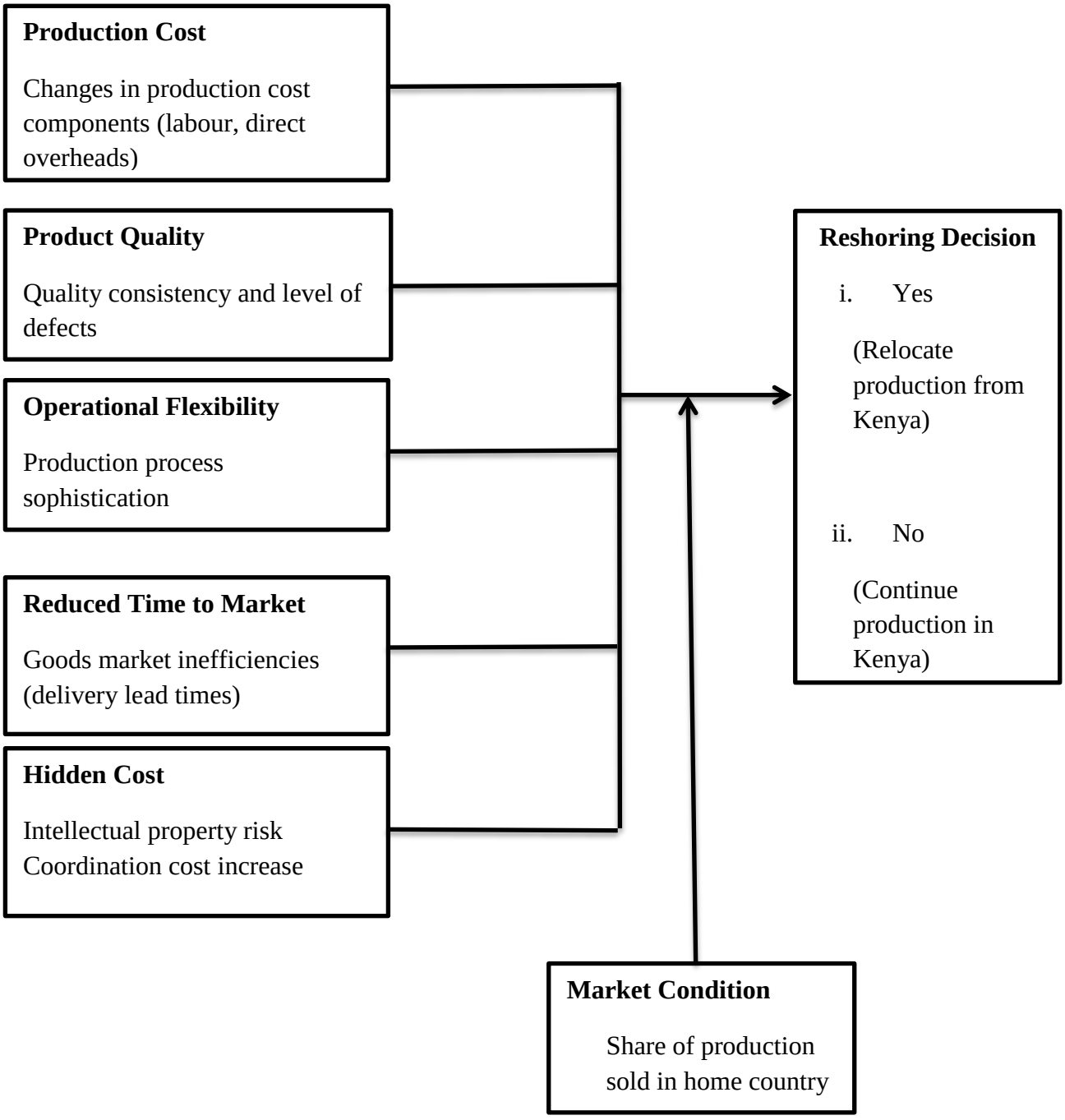


Figure 2.1: Conceptual Framework

2.3.1 Production Cost

Production cost refers to the cost incurred by a manufacturing entity to create or produce a product. It denotes the various types and forms of costs that go into the production process and includes direct materials cost, direct labour cost and direct overhead (energy and other factory costs) (Jones & Kay, 2007). For the purposes of this study production cost included direct labour and direct overhead cost used in the production of goods by manufacturing multinational corporations. In recent years the cost of production in low-cost locations has significantly changed with increases witnessed in labour and energy costs (Bailey & De Propris, 2014). This has in turn eroded the cost advantage that these low-cost locations were providing particularly for labour-intensive manufacturing activities. The study considered changes in production cost components, labour productivity and manufacturing performance indices to measure the variable production cost. Dataset from World Bank Group on manufacturing indicators, labour cost and energy cost movements, and Kenya National Bureau of Statistics manufacturing quantum indicators for manufacturing used to measure production cost changes.

Offshoring has been driven by Western European and US large manufacturing entities taking advantage of low-labour cost locations. Central and Eastern Europe, and South East Asia have become favourite destinations for these multinational corporations (Bailey & De Propris, 2014). For the period between 1970 to 2010 G7 nations share of global manufacturing value added has declined from 71 to 46 percent with much of the share being taken by emerging economies, China being the preferred destination for off-shoring and outsourcing (Baldwin & Lopez-Gonzalez, 2014). Results from Kinkel (2012), show China as one of the most attractive manufacturing destination accounting for 27% of production offshoring activities post 2007 global financial crisis. This has contributed to fragmentation of corporate value chains thus creating global value chains for these manufacturing entities (Krugman, 1995; Colovic & Mayrhofer, 2011). Recent studies indicate a continuous rise in wages in some Asian economies (Bailey & De Propris, 2014; Tate, Ellram, Schoenherr & Petersen, 2014; De Backer et al., 2016). Chinese wages rose by 7.5% between the year 2000 and 2008 (Needham, 2014); hourly

wage rates reported to have increased by between 15-20% against 9% in the United States of America (De Backer et al., 2016).

According to Sirkin *et al*. (2011) with increasing productivity per worker and reducing cost of energy and low wage increases, the US is becoming a low-cost country. Further Chinese manufacturing wages have been rising at a faster rate than in the US. Wages in the US rose by 2% between the year 2000 to 2005, by 4% between 2005 and 2010 and predicted to average 3% growth to 2015. On the contract during the same period Chinese wages have risen by 10% and 19% respectively and are predicted to average 17% growth between 2010 and 2015. The study by Sirkin *et al*. (2011) further notes that Chinese wage rates per hour was predicted to increase from US dollars 0.72 in 2000 to US dollars 6.31 in 2015. Figure 2.2 shows the details.

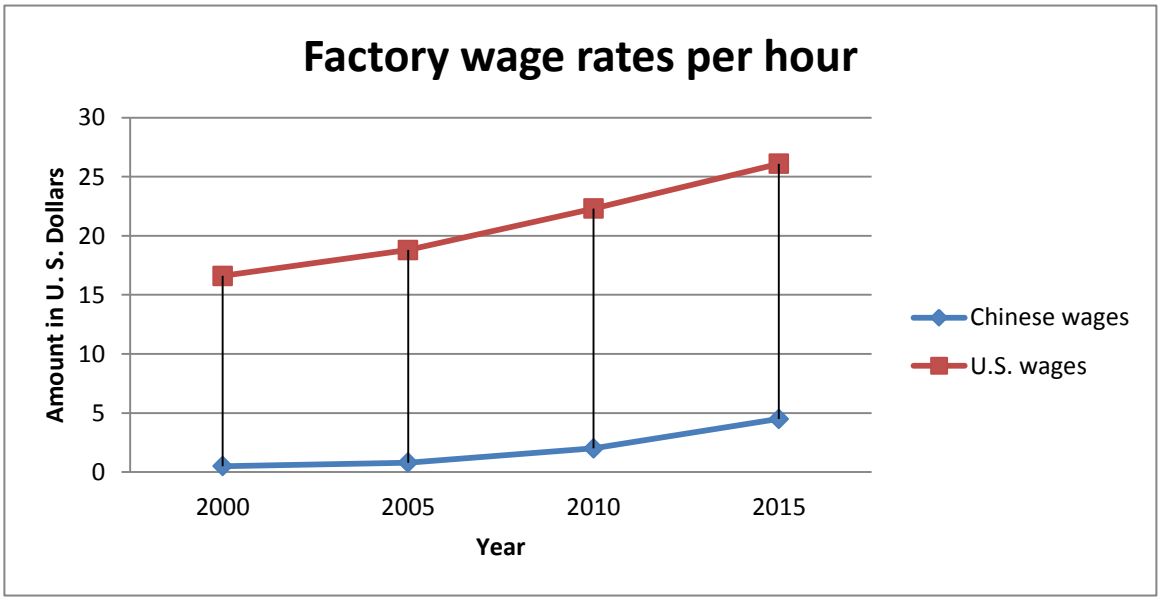


Figure 2.2: Chinese Wages Comparison With The US

Source: Sirkin *et al*. (2011, p. 8) *Made in America. Why manufacturing will return to the US*. The Boston Consulting Group. Chicago, IL.

Presence of good transportation infrastructure enhances efficiency in service delivery. However, movement in oil prices affects cost of transportation. Global oil prices increased significantly from the year 2003 to 2013 (Wilkinson et al., 2015). Oil prices have a major impact on transportation and energy costs. Manufacturers using fuel oil to run their production operations will be impacted by such increase. More recently oil prices have been on a downward trend which has eased pressure on shipping and other logistical costs. Increases in transportation costs can negatively impact the competitiveness of the manufacturing entity.

2.3.2 Product Quality

Product quality refers to the features and characteristics of a product that determines a consumer's desirability of the product. Manufacturing entities strive to ensure that their products meet and exceed customer expectations. Product quality is represented by consumers' value perception of a product and the product's origin or manufacture location impact on purchase decisions. Research studies show that there is a correlation between a consumers' propensity to purchase a product and its perceived quality (Miskolci, 2011; Wilkinson et al., 2015). This is what has led to the term "made in effect" when considering the importance of product quality on reshoring strategy decisions.

According to the United Nations Industrial Development Organization [UNIDO], the quality of a product is defined as its ability to fulfill a customer's needs and expectations (UNIDO, 2006). Results from Miskolci (2011) study on consumers' willingness to purchase food items in the Czech Republic suggests that indications of food quality improvements increased the willingness to purchase. Further consumers were willing to pay a premium price of up to 11% for quality improvement. Product quality has emerged as the most important motive for production reshoring for German manufacturing entities that have been involved in production reshoring (Kinkel & Maloca, 2009; Kinkel, 2012). Consumers from industrialized economies perceive products made in

their home countries as being of more superior quality than products made in less developed economies.

For many years, products made in China were perceived to be of lower quality than those made in the United States of America. A study by Wilkinson, Gregory and Arnold (2015) on reshoring for U.K. manufacturing notes that British made products have a reputation for quality. Similar perceptions are reported for consumers in Italy and France (Fratocchi et al., 2014). Product origin is likely to be a major consideration for MNCs production reshoring decision. The current campaign in the US on manufacturing renaissance has been centred on the "Made in American" brand by encouraging US companies to bring back their production activities back home (De Backer et al., 2016). For the case of Italy, the debate on reshoring is revolving around the "100% Made in Italy" as a means of encouraging reshoring by Italian companies.

Another major challenge of maintaining quality is quality assurance of the manufacturing process. Manufacturing entities that offshore their production activities also offshore manufacturing processes and quality assurance knowhow which at time is difficult to transfer and replicate (Kinkel & Maloca, 2009). Steiff a high-quality German toy manufacturer which had offshored a large segment of its manufacturing activities to China in the late 1990 encountered numerous challenges in its efforts to reassure its customers of the quality of its products. The firm's ability to service customer orders was greatly impaired forcing it to reshore its production back to Germany in 2008 (Brennan et al., 2015).

The international Association for Six Sigma Certification [IASSC] which certifies quality of manufacturing processes provides standards and measures of acceptable quality limits for defective products (IASSC, 2018). According to IASSC (2018) acceptable quality limits are measures in terms of defective parts per million. Mandru, Harlab and Camarda (2009) suggest other measures of product quality as scraps indicators and customer complaints indicators. IASSC (2018) defective parts per million measure was used to measure product quality for Kenyan manufacturing MNCs. Due to

the diversity of production among manufacturing MNCs in Kenya, a rate of 10,000 parts per million equivalent to 1% was used to measure product quality.

2.3.3 Operational Flexibility

Operational flexibility refers to the ability of a multinational manufacturing entity to respond quickly to changing demands of a customer with little or no effect on time, cost or performance (Fisch & Zschoche, 2012). Operational flexibility is a MNC's ability to respond to shifting demand patterns, servicing unique customer orders and ability to perform shorter production runs when required. Operational flexibility is also a multinational corporation's ability to transfer resources between different locations in response to changes in its operating environment (Kogut, 1985; Fisch & Zschoche, 2012).

In an increasingly competitive market characterized by shifting demand pattern, manufacturing entities in certain sub-sectors of the manufacturing industry such as fashion products are being forced to consider operational flexibility in their operations. Turner (2012) opines that the international environment has been characterized by rapid changes and often unpredictable market conditions that have seen many firms with global presence, in an effort to cope with shifting contingencies, seeking to build flexibility into their international strategies. Shah, Yusaff, Hussain and Hussain (2012) argue that global efficiency can be enhanced either through increased revenue generation or lowering costs. MNCs seek to achieve efficiency in their global operations by ensuring identification and utilization of every possible source of competitive advantage including operational flexibility.

There is a growing demand for customization of products that is driving the need for manufacturing agility (De Backer et al., 2016). Such demands may require that manufacturing firms build processes that can accommodate smaller runs for specialty production. In a study on U.K. manufacturing reshoring, Wilkinson *et al*. (2015) notes that production facilities in the U.K. tend to accommodate production runs flexibility

better than those in China and other low-cost locations. For such firms, reshoring may become an attractive alternative as they seek to service their customers' unique orders. De Backer *et al*. (2016) posits that manufacturing agility is required for firms to be able to handle short production runs and meet demand for customization. Production process sophistication index from global competitiveness indicators (WBG, 2018) was used to measure operational flexibility in addition to ability of MNCs to handle short production runs.

2.3.4 Reduced Time to Market

Reduced time to market refers to the efforts of MNCs to shorten the delivery times to end customers in the markets they serve. Supply chain disruptions may result in increased costs along the value chain. The pressure to reduce product delivery times to markets coped with higher levels of quality and reliability demands by customers is as a result of today's intensive competition in the global business environment. Adequate modes of transport are crucial for delivery of raw materials and finished products to markets as efficiently and reliably become key considerations for MNCs. Cost efficiency in transportation can be a source of competitive advantage (Srinivasu & Rao, 2013). Moreover, presence of sufficient and quality infrastructure facilitates expansion of local manufacturing industries and enlargement of markets. Achieving efficiency in supply chain and reducing delivery times to end customers is an objective which every manufacturing entity seeks to achieve. World Bank Group competitiveness indicators for goods market efficiency and quality of infrastructure were used to measure reduced time to market.

Ellram *et al.* (2013) note the strategic importance of supply chain resources in sustaining a firm's competitive advantage. Increasingly customers are demanding for shorter delivery lead times (De Backer et al., 2016; Gylling et al., 2015). To meet customer expectations, firms are considering reshoring as they seek to move closer to end markets (De Backer et al., 2016; Wilkinson et al., 2015). According to Bossche, Levering,

Gutierrez and Gott (2015) reshoring database delivery time improvements accounted for 23% of the US reshoring cases between 2011 and 2015. Furthermore, supply chain disruptions may result in increased costs along the value chain. MNCs operating in multiple locations mainly have their engineering, research and development facilities separate from the production facilities. Consequently, when faced with demands for more specialized product orders, their inability to achieve quick turnaround results leads to low customer responsiveness (Fratocchi et al., 2014). Moreover, the desire to meet customer needs is increasingly receiving greater attention as MNCs seek to enhance customer demand responsiveness. Customer responsiveness improvement accounted for 10% of US firms reshoring cases between 2011 and 2015 (Bossche et al., 2015). Pressure to achieve customer expectations may drive firms to change production location.

2.3.5 Hidden Cost

Hidden cost refers to additional operational costs associated with exogenous shocks, supply chain risks, intellectual property theft, quality problems, safety stock, political and economic stability, and coordination risks that had not been initially foreseen when making the original decision to offshore production (Moser & Beyer, 2011). Hidden cost is usually invisible at the time of deciding. In relation to offshoring decision Larsen, Manning and Pedersen (2011) define hidden cost as the post-transactional costs of reconfiguration and reorganization of a firm's existing value chain activities on a global scale.

In making their original offshoring decision most multinational entities considered the competitiveness of per-unit price of production based on labour and other production costs comparison between home country and preferred offshore location (Moser & Beyer, 2011; Gray et al., 2013). Hidden cost is an expense that is not normally included in the production cost or purchase price of an item. Indeed, the decision to offshore is

rather straight forward meaning if production cost in the foreign location is perceived to be more than 25% lower than available onshore then offshore production (Ferreira & Prokopets, 2009). Exogenous shocks such as earthquakes and tsunami can cause major disruptions to the supply chain and increase sourcing costs considerably. For example, the Japanese earthquakes that have occurred in recent years have resulted in serious supply chain disruptions for several vehicle and electrical components manufacturers (Carvalho, Nirei & Saito, 2014). In such an event companies that have offshored production to locations affected by earthquakes and other exogenous shocks are forced to seek alternative suppliers. The cost of seeking alternative supply networks or establishing new production locations is likely to be a major consideration in reshoring strategy decision. According to Moser (2016) founder of Reshoring Initiative, supply chain disruption was one of the major drivers of reshoring for United States of America companies in 2015.

Threat of intellectual property theft is a major challenge in the global economy. Value of counterfeit products traded annually in the global economy is estimated at over one trillion US dollars (Hoecht & Trott, 2014). Theft of intellectual property is not a new phenomenon but has been a problem affecting trade and governments close to 2,000 years right from the counterfeiting of coins recorded in the sixteenth century to present day (Chaudhry & Zimmerman, 2013). The International Anti-Counterfeiting Coalition (IACC) projects value of trade in counterfeits to surpass the figure of United States $ 1.77 trillion by end of 2015 an increase of 10,000% in the last two decades (IACC, 2015). Intellectual property risks undermine investments of legitimate manufacturers particularly in locations where intellectual property enforcement is not in the same level as in their home country (De Backer et al., 2016). Presence of counterfeit products harms legitimate manufacturer through unfair competition resulting in increased cost of operations. In order to protect against the integrity of their brands, MNCs faced with challenges of intellectual property theft may seek to reshore their production (Adroer, 2015).

More recently MNCs are beginning to consider total cost analysis which includes hidden cost in their manufacturing location decisions (Moser & Beyer, 2011). Total cost of ownership concept was introduced by Moser (2016) as an initiative to help America manufacturing companies with offshored production calculate the true cost of producing offshore verses producing in the home country. The concept considers not only the acquisition cost of an item but also any hidden cost associated with the item being acquired and that are likely to be incurred by a manufacturing entity along the global value chain. Where total cost of operation in an offshore location exceeds cost of producing in home country or nearshore location, reshoring is a likely option. Global competitiveness indicators for intellectual property protection and aggregate value of charges for use of intellectual property index were used to measure the variable hidden cost. Further level of usage of total cost of offshoring was considered in the measurement.

2.3.6 Market Condition

Market condition refers to the characteristics or features within industry sectors that affect both buyers and seller. Features such as market size, growth rates and share of production sold in host and home country influence manufacturing decisions. For firms offering products or services, the end user or customer is critical for the survival of the business. Wu and Zhang (2014) posit that market size is a major driver in production reshoring. Western economies (Western Europe and North America) have a reputation for manufacturing high quality products. Further these MNCs have strong domestic customer base that has been traditionally served by offshore manufacturing (Tate et al., 2014). Changing customer preferences in recent years has resulted in demand for shorter delivery times, increase in unique customer orders and demand for high quality goods (Wilkinson et al., 2015).

In a study by Cohen *et al.* (2016), heavy reliance on home markets for both sales and production was observed for manufacturing entities whether large or small. For such

entities production in home country accounts for 44–64% while sales account for 31-77%; this make the home market important. MNCs with strong customer base in these economies are facing increasing pressure to meet the demands of their markets and to protect critical attributes that influence such customers. General Electric Company's decision to reshore its electrical appliances division back to the United States of America was driven by the desire to better service its large customer base through improved responsiveness (Hines, 2015). General Electric's main electrical appliances customer base is in the US. Wu and Zhang (2014) posit that market size is a major driver in production reshoring.

Fratocchi *et al.* (2016) observed that customer perceived value factors include purchase order rigidity, reduced operational flexibility, product quality, loss of knowhow in host country, customer satisfaction concerns, loss of innovation potential and made-in effect. Maximizing customer value is an important consideration in decision relating to location of production facilities for MNCs. Grappi, Romani and Bagozzi (2015) suggest that consumers' perception of reshoring firm's motives influences consumer behaviour either positively or negatively. The study further notes that consumer perception of reshoring firm's motive influences consumer intentions or willingness to purchase such a firm's products.

Current empirical evidence suggests that several drivers influencing reshoring strategy decisions revolve around maximizing customer value (Gylling et al., 2015; Bossche et al., 2015; De Backer et al., 2016). Pull factors such as product quality, product origin (De Backer et al., 2016), proximity to customer and operational flexibility (Fratocchi et al., 2014; Tate et al., 2014) are closely associated with customer value creation, maintaining customer base and protecting a manufacturing entity's market share. Miskolci (2011) suggests that a correlation exists between a consumers' propensity to purchase a product and its perceived quality. Manufacturing performance index statistics were used to measure market condition. World Bank data on country market

size, domestic market size index, manufacture exports and share of production sold in host and home markets were used to measure market condition.

2.3.7 Reshoring Decision

Weismann *et al*. (2017 define reshoring as the movement of offshored production back to its previous location while Kinkel and Maloca (2009) see reshoring as the reversal of an earlier offshore decision. For the purposes of this study reshoring decision means the decision of a manufacturing entity to relocate their production activities back to their home country or another location outside Kenya. Kinkel & Maloca (2009) define reshoring as the re-concentration of parts of production from a multinational corporation's own foreign locations as well as from foreign suppliers to the manufacturing entities' domestic production. Ellram *et al.* (2013) define reshoring as manufacturing moving back to its parent company. Tate *et al.* (2014) see reshoring as the relocation of manufacturing facilities from traditional offshore locations to more attractive offshore locations or even to the parent company's home country. Martinez-Mora and Merino (2014) see it as bringing back operations to the country of origin with the process including insourcing, inshoring, reshoring or backshoring.

Fratocchi *et al.* (2014) opine that reshoring is a voluntary corporate strategy regarding the home country's partial or total re-location of value activities to serve the global than rather regional demands of existing or totally new products that rely on internal (captive) and / or external (outsourcing) governance modes. Another term that has been used to describe reshoring is nearshoring. De Backer *et al*. (2016) define nearshoring as relocating of previously offshored activities to the parent company's home location or nearer location. Reshoring has been considered as a location decision as opposed to location and ownership decision (Gray et al., 2013). Moreover, the manifestations of reshoring are best illustrated by reshoring options as provided by Gray *et al*. (2013) in Figure 2.3.

In-house reshoring refers to the relocation of productions activities from a wholly owned subsidiary overseas to the firm's home production facility. Reshoring for outsourcing means that the firm relocates it production activities from its foreign owned facilities to a home country supplier hence transferring its overseas production activities to a home country-based supplier. Reshoring for insourcing is where the firm relocates its production activities from an outsourced foreign supplier to its own home country production facilities while outsourced reshoring is the relocation of production activities that were previously done by outsourced foreign suppliers and having it done by local suppliers.

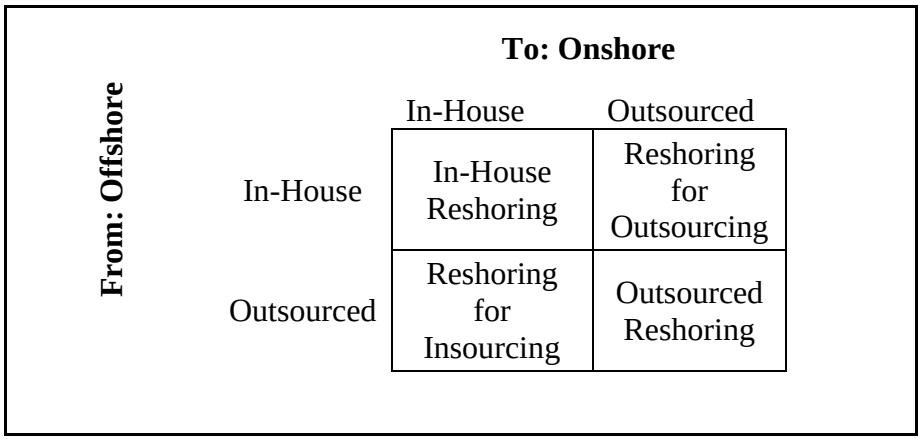


Figure 2.3: Reshoring Options

Source: Gray *et al*. (2013, p. 28) The reshoring phenomenon: what supply chain academics ought to know and should do. *Journal of Supply Chain Management, 49*(2).

The varying definitions of reshoring indicate the differing viewpoints and emphasize that different authors have focused on. Some have focused on the markets being served while others have considered the proximity to the parent company's home country. Irrespective of the varying terms and definitions of reshoring, there is general acknowledgement that the phenomenon is a production activities location decision that the firm's top management must consider in their strategic decision making.

The academic debate around reshoring has developed along the different paths consistent with the relevant theories on evolution of firms' organizational forms and globalization (Bailey & De Propris, 2014). Kinkel and M Maloca (2009) see reshoring as purely a location and cost-related choice. However other scholars see reshoring as being driven by total costs of operations considerations and value capture (Moser & Beyer, 2011; Ellram, Tate & Petersen, 2013); a correction of prior strategic judgmental errors of offshoring decisions (Gray et al., 2013) and for some volatility of demand and relatively small and segmented markets driving reshoring (Wu & Zang, 2013).

Industrialized countries in the West are beginning to take keen interest in the reshoring phenomenon. In the United Kingdom reshoring debate is being seen as an opportunity to rebalance the U.K. economy (De Backer et al., 2016). In the United State the reshoring debate has been taken up by policy makers who see it as the shot in the arm that American manufacturing requires. The debate and campaign around bringing jobs back to America is revolving around reshoring (Ellram, Tate & Petersen, 2013). In Italy the central theme is on "100% Made in Italy" aimed at encouraging Italian firms to bring production back home (De Backer et al., 2016; Fratocchi et al., 2014). Ultimately the strategic decision for manufacturing entities regarding production location is a choice between staying in one location or moving production to another location based on the influence of the strategic drivers for production reshoring. For Kenyan manufacturing entities the reshoring decision would revolve around continuing production in Kenya or moving production facilities away from Kenya.

2.4 Empirical Review

This section covers similar related empirical studies on production reshoring and the variables of the study as outlined in the conceptual framework.

2.4.1 Production Cost

Kinkel (2012) considered trends in relocation and backshoring activities in the midst of the global financial crisis. The study considered a dataset of 1,484 German manufacturing firms finding that backshoring activity to be a relevant phenomenon for such firms. Further results show that increase in costs erodes the comparative advantages of a location with MNCs seeking to maximize on their production capacity utilization. Results from Fisch and Zschoche (2012) also indicate that rising labour cost significantly influences MNCs decision to reshore.

In their study on drivers of manufacturing reshoring Bailey and De Propris (2014) surveyed 80 manufacturing firms in the U.K. automotive industry. The study findings suggest that reshoring is not widespread in the U.K. automotive industry; of the surveyed firms 21% indicated that they had undertaken reshoring; 16% were considering it while 5% were not considering reshoring. The study concludes that increased transportation costs, concerns about product quality, rising labour costs overseas (China, and Central and Eastern Europe) and exchange rate shifts are some of the main drivers for reshoring by U.K. manufacturers in the automotive industry. The study concludes that businesses are actively considering reshoring even though production activity relocation is still low.

Sirkin *et al*. (2011) in their study view the rise in Chinese production workers' wage relative to that of their United States of America counterparts as a driving factor for reshoring by United States of America manufacturing entities while Fratocchi *et al.* (2016) study on motivations for manufacturing reshoring, they find that changes in production cost influence manufacturing firms' decision to reshore. Changes in the cost

structure for manufacturing entities can drive managers into moving production from an offshore location to the home country or a nearshore location.

2.4.2 Product Quality

In their study on drivers and antecedents of manufacturing offshoring and backshoring Kinkel and Maloca (2009) carried out an analysis of 1,663 German manufacturing firms. The study notes that product quality challenges in the offshore location and lack of flexibility were the main drivers for reshoring of production activities among German manufacturing companies. They find that for every four to six offshoring activities, one backshoring activity follows within a four-year period. Their study also indicates that reshoring is predominantly a short-term correction of prior misjudgment of offshoring decision.

Miskolic (2011) study surveyed consumers in the Czech Republic on their preferences willingness to pay for quality. Results from the study indicate that consumers are willing to pay an 11% premium for guaranteed quality of a product. A study by Wilkinson *et al.* (2015) on U.K. manufacturing finds that British made products have a reputation for quality; that consumers are constantly considering a product's origin ("Made in effect") in their purchase decision. They suggest that product quality issues are driving manufacturing reshoring. The study by Canham and Hamilton (2013) surveyed 676 manufacturing firms based in New Zealand receiving a response rate of 22.3%. The study finds that operational flexibility and product quality concerns are responsible for reshoring decisions for New Zealand manufacturing firms. Brand identity is strongly associated with country of origin and consumers perception of the quality of a product. The study findings are consistent with the results from Kinkel and Maloca (2009). According to the study by Kinkel and Maloca (2009) and Kinkel (2012) product quality has emerged as the most important motive for reshoring by German manufacturing entities.

Fratocchi *et al*. (2014) study view the debate on reshoring for manufacturing firms revolving around product origin. They note that some of the reshoring activities noted in Italy have been as a result of pressure to produce in the home country (Italy) to satisfy product quality expectations of their customer base. Similarly, De Backer *et al*. (2016) suggest similar finding in which emphasis is on 100% Made in Italy. Further the debate in the United States of America is revolving around "Made in America again" (De Backer et al., 2016). They view the debate as the driving factor for United States of America production reshoring activities.

2.4.3 Operational Flexibility

Fisch and Zschoche (2012) researched on the effects of operational flexibility on decisions to withdraw from foreign production locations. They analyzed 596 production locations of 189 German manufacturing firms. The study finds that operational flexibility influences a firm's reshoring decision. The study did however find that when a location offered greater flexibility to reduce production capacity coupled with a flexible labour market, then rising and uncertain labour costs have less influence on production relocation decision.

Results from Kinkel and Maloca (2009) indicate that lack of operational flexibility in an offshore location is one of the main drivers for reshoring for German manufacturing firms. Similarly, findings from Canham and Hamilton (2013) indicate that impaired capabilities in operational flexibility in offshore location drives some of manufacturing firms into reshoring their production activities back to New Zealand. According to the study by De Backer *et al.* (2016) they find that demand for customization is driving the need for manufacturing agility; manufacturing firms seeking to accommodate smaller runs for specialty production. Wilkinson *et al*. (2015) study suggests that production facilities in the U.K. tend to accommodate shorter production runs; with increased customization U.K. manufacturers are finding it more practical to reshore their offshored

production back to the U.K. The study by Fish and Zschoche (2012) considered the effects of operational flexibility on decisions to withdraw from foreign production locations run by different subsidiaries of a global MNC. Results indicate the importance of operational flexibility in choice of production location for an MNC with several production sites in different parts of the world.

2.4.4 Reducing Time to Market

Martinez-Mora and Merino (2014) carried out a study on the Spanish Footwear Industry. They studied 14 footwear manufacturing companies based in Spain who had outsourced some of their production activities overseas. The study finds that new demand conditions arising from changing customer preferences such as pressure for shorter delivery times and batch sizes impose conditions that lead to reshoring. Similar findings are noted in other studies (De Backer et al., 2016; Wilkinson et al., 2015). Demands for shorter delivery time is putting pressure on manufacturing entities to increasingly look for ways of reducing their delivery times to their customers. The study by Bossche *et al.* (2015) considered data from United States of America firms' reshoring database. The main aim of the study was to show the extent of reshoring among US manufacturing firms. Results from the study show that delivery time improvements account for 23% of the US firms that had reshored their production between 2011 and 2015. The study further suggests that the need for consumer responsiveness improvement accounts for 10% of US firms' reshoring cases during the same period. This indicates that customer expectations are driving firms to consider moving closer to end markets resulting in increased reshoring activities.

According to Gylling *et al.* (2015) case study on offshore outsourcing and backshoring for a Northern European bicycle manufacturer, they suggest that growth in sales volume coupled with demands for shorter delivery lead-times are driving the need for reshoring

of production activities. Further these changing dynamics in consumer preferences are redefining manufacturing location decisions.

2.4.5 Hidden Cost

In a study on US manufacturing entities that had reshored their production Moser and Beyer (2011) note an increased application of the total cost of ownership model which includes consideration of hidden cost in these companies' decision to reshore production. The study finds that General Electric Company used the model to reshore its electrical appliances production back to the US in 2011 while Walmart applied the model in its reshoring strategy decision for production of locks and door hardware components.

Gylling *et al*. (2015) carried out a study on offshoring, outsourcing and backshoring in the Finnish bicycle industry. Results from the study indicate that inaccurate offshoring cost benefit computations drives initial firm's decision to offshore. The study further notes that increased accuracy of cost allocating procedures results in better understanding of the total cost of ownership and better cost comparisons between the home country location and the offshore location that leads to reversal of the original decision to offshore. Results from Larsen, Manning and Pedersen (2011) indicate that an organization's inability to ascertain total costs of offshoring is explained by the degree of offshoring complexity. Thus, firms that experience offshoring and discover the negative effects of the offshoring decision are likely to reverse such a decision and reshore. An Archstone Consulting survey on original equipment manufacturers notes that 60% of these manufacturers used total cost models that did not take into consideration 20% of the true costs of offshoring (Ferreira & Prokopets, 2009). The study by Ferreira and Prokopets (2009) further notes that hidden cost in offshore locations contribute to the erosion of the perceived lower cost advantage in such locations. A study by Tate (2014) on offshoring and reshoring for US companies posits

that managers of MNCs are taking a closer look at the total cost of operating offshore and its impact on the bottom line in their reshoring decisions.

Ellram, Tate and Petersen (2013) explored factors that affect organization's location decision focusing on offshoring and reshoring strategy decisions for US firms. They conducted an electronic survey of 3,303 firms involved in offshore manufacturing. The study achieved a response rate of 9.7% with 319 usable surveys returned. The study notes that overall costs, supply chain-related factors and government trade policies (tax advantages and subsidies) were becoming important in relocation decision. The study concludes that cost differentials in total cost of operations between different locations drive multinational corporations to rethink their continued production activities in a certain location.

2.4.6 Market Condition

In their study on sourcing strategies under competition Wu and Zhang (2014) used a sourcing game model for choice of sourcing strategies applied by manufacturing entities. The study finds that market size movements (shrinking) and demand volatility (increase) resulted in behaviour change leading to reshoring for such firms. The findings are consistent with the study by Bailey and Propris (2016) on their study of the U.K. automotive industry.

Gylling *et al.* (2015) in their study on Finnish bicycle manufacturer found that growth in sales volume in home country coupled with demand for shorter lead times was driving reshoring in the bicycle industry. Fratocchi *et al*. (2016) conducted a study on motivations for manufacturing reshoring observe that customer value creation leads firms to consider reshoring to maximize this value. The study finds that customer value creation is expressed in terms of product quality, service delivery speed or flexibility in order processing can.

The study by Grappi, Romani and Bagozzi (2015) on consumer stakeholder response to reshoring strategies considered consumers reaction to corporate reshoring. The study suggests that consumers' perception of reshoring firm's motives influences consumer behaviour; positively if consumers perceive reshoring decision was made with their concerns in mind; negatively if perception is firm's internal profit maximization motive leads to decision to reshore. The study concludes that consumer perception of reshoring firm's motive influences consumer intentions or willingness to purchase such a firm's products. Vanchan, Mulhall and Bryson (2018) in their study considered reshoring of manufacturing for U.S. and U.K. manufacturing entities observing that loss of demand in home country market was driving reshoring of outsourced manufacturing for both U.S. and U.K. manufacturing entities.

Market condition plays a critical role in influencing production location decisions for multinational corporations. Drivers that influence reshoring such as product quality, proximity to market, shorter production runs (operational flexibility) and desire to reduce production cost are all aimed at creating customer value, competitiveness and increased market share for the MNC. The findings by Wu and Zhang (2014) suggest the importance of market size movements and demand volatility in moderating production location decisions for MNCs.

2.4.7 Reshoring Decision

The interest on the reshoring phenomenon has been growing going by the growing number of articles in print and electronic media and actions of the industrialized countries' activities in encouraging their manufacturing entities to bring manufacturing back home (Fratocchi et al., 2014; De Backer et al., 2016; Moser, 2016). Countries such as the United Kingdom, Italy and the United States of America see reshoring as an opportunity to rebalance and revitalize their domestic manufacturing activities. Interest is growing among academia on the reshoring phenomenon (Moser, 2016).

From the various empirical studies, it remains unclear whether drivers influencing reshoring in different locations are the same or reshoring is being influenced by regional characteristics (Bailey & De Propris, 2014; Fratocchi et al., 2016). Further the question whether reshoring is more pronounced in certain subsectors of the manufacturing industry than others remains unanswered. Studies on reshoring have been carried out in several countries such as German (Kinkel & Maloba, 2009; Fisch & Zschoche, 2012), Spain (Martinez-Mora & Merino, 2014), Denmark (Arlbjorn & Mikkelsen, 2014), Finland (Gylling et al., 2015) and USA (Ellram, Tate & Petersen, 2013).

In the coming years as manufacturing seeks to cope with changing global trends, reshoring is likely to play a significant role in reshaping and reconfiguration of manufacturing globally. Brennan *et al*. (2015) indicate that reshoring is reshaping the global manufacturing landscape signaling the important of reshoring in the current global dispensation. Reshoring decision was the dependent variable for this study.

2.5 Critique of Existing Literature

Gylling *et al.* (2015) carried out a study on offshoring, outsourcing and backshoring in the Finnish bicycle industry. The study found that inaccurate offshoring cost benefits computations drives initial firm's decision to offshore. Increased accuracy of cost allocating procedures results in better understanding of the total cost of ownership and better costs comparisons between the home country location and the offshore location that leads to reversal of the original decision to offshore. Further the study noted that the requirement for shorter lead times, product redefinition and changes in external factors such as supplier costs influenced the decision to reshore.

The results of the study are consistent with conclusion of the study by Kinkel and Maloca (2009) and Kinkel (2014) that reshoring is a correction of prior misjudgment of an offshoring decision. However, the study took a case study approach for one Finish bicycle manufacturer and ignored other players in the Finish manufacturing industry. The bicycle industry represents only a small segment of the wider manufacturing

industry. In their study on offshoring in the Spanish footwear industry a return journey Martinez-Mora and Merino (2014) found that new demand conditions arising from changing customer preferences such as pressure for shorter delivery times, batch sizes were imposing conditions that lead to reshoring of production.

Contrary to the findings of Gray *et al.* (2013) and Kinkel (2014) that reshoring was a correction of prior misjudgment of an offshoring decision, the study by Martinez-Mora and Merino (2014) found that this was not the case for the Spanish footwear industry. The study also noted that reshoring decision was affected by the type of product manufactured in an offshore location with high propensity to reshore for the mid-high range footwear products than in other footwear ranges. However, the study used non-continuous data in determining the relationship between the study variables. Further the study only considered Spanish companies operating in the footwear industry and further research is necessary for generalization of study research results in relation to other sectors of the manufacturing industry particularly in emerging economies such as Kenya.

The study by Canham and Hamilton (2013) considered offshoring, backshoring and staying at home for small and medium enterprises in New Zealand. The study found that comparative advantages of low-cost locations when offset by impaired capabilities in flexibility and quality influenced reshoring decision. However, study mainly focused on small and medium enterprises in New Zealand. Further the remoteness of New Zealand and its large distances to low cost locations in South East Asia is a limiting factor in generalizing the findings to other contexts. Grappi *et al*. (2015) considered consumers reaction to corporate reshoring noting that consumers' perception of reshoring firm's motives influences consumer behaviour either positively or negatively. However, the study used experimental design with manipulation of company reshoring strategies among the selected study subjects making generalization of findings difficult. Further the study considered consumer stakeholder responses from a consumer perspective but did not consider the influence of consumer reactions from a firm's perspective and how

such perceived behaviour would influence the firm's decision to either reshore or stay. Consumer purchase decisions are likely to impact demand for the firm's products and its market share. A study on the moderating influence of this factor would provide a better understanding of its impact on reshoring decision.

Ellram, Tate and Petersen (2013) explored the factors that affect organization's location decisions focusing on offshoring and reshoring decisions for US firms. The study noted that factors affecting a region's attractiveness of manufacturing changes significantly over time. Firms are moving away from considering cost savings but overall impact on cost of doing business, profitability and customer value creation. Further supply chain-related factors and government trade policies such as tax advantages and subsidies increasingly become more important in location decisions. However, the study considered only one theoretical perspective (Eclectic paradigm) and did not consider other perspectives such as TCE and RBV. The study took a US perspective using survey data for large global multinational firms, therefore future research should attempt to explore strategic drivers influencing reshoring decision in emerging economies such as Kenya.

Bailey and De Propris (2014) considered reshoring and its limits in the United Kingdom automotive industry. The study found that offshore transportation costs and labour cost increases and exchange rate shifts were driving reshoring decisions even though reshoring was not widespread in U.K. automotive industry. The study took a narrow perspective of U.K. automotive industry and finding may not be generalized for other segments of the manufacturing industry. Fisch and Zschoche (2012) considered the effects of operational flexibility on decisions to withdraw from foreign production locations. They found that costs of increasing production output moderate the influence of labour cost on decision to withdraw from a foreign location. However, the study mainly focused on shifting of production among the different subsidiaries of each German manufacturing parent company. Further the study only considered operational flexibility in relation to other plants owner by each manufacturing entity.

The study by Fratocchi *et al*. (2016) explored motivations of manufacturing reshoring and found that value-driven and country-specific motivations prevail over efficiency-driven and firm-specific ones respectively. However, the study exclusively used secondary data most of which was drawn from non-academic sources making generalization of findings difficult. Wu and Zhang (2014) in their study on analysis of sourcing decisions under competition found that market condition such as market size and demand volatility drive firms to make offshoring and reshoring decisions. However, the study used game-theoretic model to simulate firms' sourcing decisions. The study did not consider the moderating influence of share of production sold in host country on the relationship between the independent variables and the dependent variable.

2.6 Summary of Empirical Literature Review

The literature reviewed the strategic drivers influencing reshoring strategy decision among manufacturing MNCs. Empirical literature suggests considerable concurrence on strategic drivers for reshoring as most of them have been commonly cited in recent studies (Kinkel & Maloba, 2009; Fisch & Zschoche, 2012; Ellram, Tate & Petersen, 2013; Bailey & De Propris, 2014; Martinez-Mora & Merino, 2014; Fratocchi et al., 2016). These drivers include production cost increase (rising overseas labour and energy costs), product quality, operational flexibility, reduce time to market and hidden cost (total cost of ownership considerations). Market size movements and demand volatility have moderating influence on reshoring and offshoring decisions for manufacturing MNCs; emphasizing the importance of market condition in reshoring and offshoring decisions. Research suggests that rising labour, energy and logistics costs influence decision on reshoring. Efficiencies in supply chain and reduced logistics costs improve operational efficiency and managers of MNCs pursuing logistical efficiencies are likely to consider such location advantages in their reshoring decisions.

Research suggests that product quality is critical for delivering value to the customers and for sustaining competitive advantage. In addition, customer value creation is an

important issue in an increasingly competitive global market. Multinational corporations are increasingly considering total cost efficiency and customer value creation in their strategic location decisions. Moreover, research shows that rising labour costs are reducing the ability of wealth creation for MNCs and hence driving MNCs to seek wage-efficient locations for their production activities. To minimize the effects of rising labour cost, MNCs will seek locations that provide labour cost advantages. Similarly, exogenous factors resulting in supply chain disruptions, costs associated with protection of intellectual property risks, product quality challenges and coordination risks affect overall cost of operations and the need for managers to constantly seek ways to reduce the impact of such costs and risks. As trade barriers continue to shrink and the global markets become increasing accessible to many players, location decisions (such as offshoring and reshoring) will remain on the strategic agenda for MNCs. Research suggests that reshoring is gaining interest considerable from policy makers, consultants and scholars. Reviewed literature indicates that reshoring is likely to play a significant role in the reshaping and reconfiguration of manufacturing globally.

2.7 Research Gaps

Evidence from empirical studies indicates that reshoring is gaining importance among scholar and industry players (Fratocchi et al., 2016). Further empirical evidence is required for a better understanding of strategic drivers influencing production reshoring, the phenomenon's evolution in the future and impact on business decisions. It is still unclear whether drivers influencing reshoring in different locations are the same or reshoring is being influenced by regional characteristics. Further the question whether reshoring is more pronounced in certain subsectors of the manufacturing industry remains unclear.

Several research gaps are still evident in studies carried out so far. The study by Gylling *et al.* (2015) took a case study perspective with the data being collected from only one Finish bicycle manufacturer. The study suffers from limitations for interpretation and

generalization of study results arising from inadequacy of number of firms included in the study. Similarly, the study by Martinez-Mora and Merino (2014) considered the Spanish footwear industry with a limited number of firms studied. Some of the study findings also contradicted earlier findings by Kinkel and Maloca (2009); Gray *et al*. (2013) and Kinkel (2014). Further the study used non-continuous data in determining the relationship between the study variables and did not consider the relationship between share of production in host country and in home country and its effect on reshoring decision. The study by Ellram, Tate & Petersen (2013) took a US perspective focusing on data from large US manufacturing firms. Further the study considered only one theoretical perspective (Eclectic paradigm) and did not consider other theorical such TCE and RBV. The study was also carried out during the "*Bring Jobs Back to America"* campaign that is likely to have influenced the results of the study.

The study by Bailey and De Propris (2014) took a narrow perspective by considering reshoring activities of the U.K. automotive manufacturers with results suggesting that reshoring was not widespread in the U.K. as in other European countries (German and Italy) facing similar market conditions. Although Bailey and De Propris (2014) note the effects of demand volatility on reshoring decision for U. K. automotive firms, they did not consider the moderating influence of market condition on reshoring. The study by Grappi *et al*. (2015) used experimental design with manipulation of company reshoring strategies among the selected study subjects while Wu and Zang (2014) used game-theoretic model to simulate firms' sourcing decisions. Use of other research design to study strategic drivers for reshoring would provide evidence whether use of different research designs would give similar or different results.

Fisch and Zschoche (2012) study mainly focused on shifting of production among the different subsidiaries of each German manufacturing parent company. Further the study only considered operational flexibility in relation to other plants owner by each manufacturing entity. The study by Canham and Hamilton (2013) mainly focused on small and medium enterprises in New Zealand. The remoteness of New Zealand and its

large distances to low cost locations of South East Asia is a limitation in generalizing of the findings to other contexts.

This study therefore intended to explore the strategic drivers for production reshoring decision among MNC's in Kenya by considering the selected independent variables and moderating variable. The intent of the study was to fill the existing empirical gaps and contribute to advancement of theory and knowledge about reshoring. A summary of the critical empirical review is provided in Appendix I.

CHAPTER THREE

RESEARCH METHODOLOGY

3.0 Introduction

This chapter describes the research methodology adopted for the study and includes the research philosophy, research design, and population of the study, sampling process and data collection instruments and data analysis techniques to be applied in the study. Vargas-Hernandez, De Leon and Valdez (2011, p.47) define research methodology as a highly intellectual activity used in the investigation of nature and matter. Kothari (2004) sees research methodology as the science of studying how research is done scientifically.

3.1 Research Design

The study adopted a cross-sectional research design to determine the drivers affecting production reshoring decision among MNCs operating in Kenya. From literature, research design is defined as the blueprint, plans and procedures for collection, measurement and analysis of data (Creswell, 2009: Sekaran & Bougie, 2013). It is the conceptual structure within which research is conducted (Kothari, 2004). Cross sectional research design is used to investigate variables in different contexts over the same period of time (Collis & Hussey, 2009). Cross sectional research design was appropriate for this kind of study as it represents a one point in time snapshot of the study (Cooper & Schindler, 2011). Martinez-Mora and Merino (2014) used cross sectional research design in their study on reshoring in the Spanish footwear industry while Bailey and De Propris (2014) used it in their study of reshoring in the U.K. automotive industry. The researcher was able to achieve the objectives of the study given the time constraints.

This study takes a positivist research paradigm. Positivism research paradigm emphasizes the model of natural science in the creation of knowledge (Noor, 2008). From a positivist perspective, a positivist investigator lays emphasis on impartiality,

measurement objectivity and repeatability. Positivism does not place any value judgments on the part of the investigator (Aliyu, Bello, Kasim and Martin, 2014). It allows the investigator to collect data using scientific methods and interpret the results only from data collected. Accordingly, empirically evidence is required for one to state that a phenomenon has been proven. Confirmatory analysis, laboratory experiments and quantitative analysis are some of the methodologies applied by positivist investigators (Aliyu et al., 2014).

3.2 Target Population

The target population consisted of Kenyan manufacturing MNCs who are members of the Kenya Association of Manufacturers (KAM). The target population was relevant for the study since the researcher sought to explore drivers influencing production reshoring decision among this category of manufacturers. According to Kenya Vision 2030's second medium term plan the medium and large manufacturing entities which include MNCs based in Kenya constitutes less than 5% of the total number of manufacturing enterprises but account for over 60% of manufacturing contribution to the country's GDP (GoK, 2013). From literature (Daniel, 2012; Sekaran & Bougie, 2013) population is described as the universe or entire collection of people, events or objects of interest for which a researcher wanted to study.

The researcher used the 2015 Kenya manufacturers and exporters directory which contains a listing of all Kenyan manufacturers including MNCs who are members of the Kenya Association of Manufactures. Since there was no separate listing of manufacturing multinational corporations in the KAM 2015 directory of manufacturers and exporters, the researcher extracted a listing of the MNCs from the directory (Appendix IV) and used the same as the target population for the study. A total of 96 MNCs from twelve industry sectors were used in the study as shown in Table 3.1. The accessible population for this study was the manufacturing multinational corporations who are members of the Kenya Association of Manufacturers. Multinational

corporations were chosen because of their integrated global philosophy which encompasses both domestic and foreign operations as noted by Daniels, Radebaugh & Sullivan (2009) and their high contribution to Kenya's GDP (GoK, 2013).

Table 3.1: Target Population Distribution By Industry Sector

Sector	Number	Percentage
Building, mining and construction	7	7.3%
Chemical and allied	25	26.0%
Energy, electrical & electronics	7	7.3%
Food and beverages	25	26.0%
Leather & footwear	1	1.0%
Metal & allied	8	8.3%
Motor vehicle assembly & accessories	6	6.3%
Paper & board	2	2.1%
Pharmaceutical & medical equipment	4	4.2%
Plastics & rubber	6	6.3%
Textile & apparel	3	3.1%
Timber, wood & furniture	2	2.1%
Total	**96**	**100%**

3.3 Sampling Techniques and Illustrations

From literature (Daniel, 2012; Oladipo, Ikamari, Kiplang'at & Barasa, 2015) sampling is described as the process of selecting a subset of the population in order to secure a representative group for the purposes of gaining knowledge and drawing conclusions generalizable to the population of interest to the researcher. Sampling enables researcher study large population, overcome challenges of resource limitations and inaccessible population (Oladipo et al., 2015). The section below outlines the sampling techniques and illustrations used in this study.

3.3.1 Sampling Frame

From literature sampling frame is defined as the complete and accurate listing of accessible population from which the researcher wishes to draw the sample from (Collis & Hussey, 2009; Oladipo et al., 2015). The sampling frame for this study consisted of the institutions that are members of the Kenya Association of Manufacturers as contained in 2015 members' Directory of the Kenya Association of Manufacturers. Total membership stood at 752 firms excluding 101 non-manufacturing entity in the service and consultancy sector. A listing consisting of 96 manufacturing MNCs was extracted from the said directory. The manufacturing entities that met the criteria of having operations in two or more countries constituted 12.7% of the KAM membership. Details of the firms is provided in Appendix IV.

3.3.2 Sample Size and Sampling Technique

A good sampling design must consider accuracy (absence of bias) and precision of the estimate. Sampling designs that use probability methods offer more accuracy and precision than non-probability sampling methods and allows use of quantitative methods of data analysis (Daniel, 2012). Several sampling design approaches are available such as random sampling, stratified sampling and cluster sampling among other. Israel (2009) posits that where the study population is below 200, the census method is attractive. Studying the entire population eliminates sampling errors by increasing level of precision and reducing degree of variability (Israel, 2009). Census method was used in this study.

The sample size consisted of 96 senior managers drawn from the 96 manufacturing MNCs operating in Kenya as extracted from the KAM 2015 directory of manufacturers and exporters (KAM, 2015). The manufacturing MNCs in Kenya was the object about which generalizations were made based on the data collected. This was the unit of analysis. Sekaran and Bougie (2013) define unit of analysis as the level of aggregation of the data collected during the subsequent data analysis stage. Top management is

responsible for making strategic decision (Pearce II & Robinson, 2009). Since reshoring decision is a strategic decision, the top management of the manufacturing MNCs were the unit of observation for this study.

3.4 Data Collection Instrument

In this study questionnaires were used for primary data collection while secondary data was collected through use of company publications and Kenya National Bureau of statistics data on manufacturing industry. Sekaran and Bougie (2013) posit that review of existing empirical literature, publications and other documented sources are major instruments of secondary data. Questionnaire is a data collection instrument in which targeted respondents provide written answers to written research questions (Robson, 2003; Rowley, 2014). Structured questionnaires were used as the research instrument for the collection both quantitative and qualitative data. Questionnaires have been used in the collection of data on production reshoring by many scholars such as Kinkel and Maloba (2009); Ellram *et al.* (2013); Bailey and De Propris (2015). Secondary sources such as Kenya National Bureau of Statistics publications and manufacturing entities publications were used to further inform the study.

3.5 Data Collection Procedures

Data collection was carried out by use of both manual delivery and electronic emailing of the questionnaires to the identified respondents. To improve the response rate for electronic questionnaires, telephone calls were made to the targeted respondents requesting for their collaboration in the study. However as evident by the response rate only 10 respondents responded through electronic means while 66 questionnaires were through physical delivery. The entire data collection exercise took a period of four months.

The target respondents were 96 senior managers holding positions of chief executive officer, chief finance officer or senior managers responsible for corporate strategy. These members of senior management were considered a suitable unit of observation since as persons responsible for corporate strategy and organizational performance they are better placed to provide insight into the strategic drivers influencing reshoring decision within their organizations.

3.5.1 Diagnostic Tests

Diagnostic tests were carried out in order to validate the data collection instrument for reliability and consistency. An initial pilot study was carried out to validate the data collection instrument and to ensure that it provides the needed information.

3.5.1.1 Pilot Study

A pilot study is conducted to detect weaknesses in design and instrumentation and to provide proxy data for selection of a probability sample (Cooper & Schindler, 2011). The pilot study involved ten randomly selected respondents from eight of the twelve sectors of the manufacturing industry. Four of the sectors had four or less firms and were therefore left out of the pilot study for purposes of having wider representation in the main study. The pilot study constituted 10% of the study population. The rule of thumb is that 1% to 10% of target population should constitute the pilot test according to Cooper and Schindler (2011).

3.5.1.2 Reliability of Data Collection Instrument

Reliability is the consistency of a set of measurement items while validity indicates that the instrument is testing what it should (Cronbach, 1951). Reliability is the degree to which an instrument measures same subjects the same way each time it is used under the same condition. Cronbach's Alpha test was used to validate the measurement instruments of this study and determine its portability, structure and reliability. This measure indicates the extent to which a set of test items can be treated as measuring a single latent variable with cut-off value of 0.7 for reliabilities (Cronbach, 1951).

Cronbach's alpha is a general form of the Kunder-Richardson (K-R) 20 formulas used to access internal consistency of an instrument based on split-half reliabilities of data from all possible halves of the instrument. According to Mugenda and Mugenda (2003) it reduces time required to compute a reliability coefficient than in other methods. In testing for the reliability of the data collection instrument, the acceptable values for alpha range from 0.7 to 0.95 (Tavakol & Dennick, 2011). For the purposes of this research, the researcher used a threshold of 0.7.

3.5.1.3 Validity of Data Collection Instrument

Validity is used to determine whether the data collection instrument is measuring that which it is intended to measure and performs as it is intended to (Golafshani, 2003; Ihantola & Kihn, 2011). Validity answers the question whether valid conclusions can be draw from the data collected considering the research design and data collection methodology used. The pilot study tested the validity of the data collection instrument.

Factor analysis was carried out to remove any redundant item from the questionnaire. Factor analysis is a statistical procedure for reducing a set of measured variables to smaller number by combining those that are moderately or highly correlated with each other (Gall, Gall & Borg, 2007). Exploratory factor analysis and confirmatory factor analysis are the two main classes of factor analysis. Confirmatory factor analysis approach is used to test a proposed theory or model (Gall, Gall & Borg, 2007; Bagozzi & Yi, 2012) and there is a strong theoretical expectation on the factor structure prior to carrying out the analysis.

The research tested for multicollinearity among the independent variable. Multicollinearity is a statistical phenomenon in which two or more independent variables in a multiple regression model are highly correlated (Sekaran & Bougie, 2013). Presence of multicollinearity results in high correlation among the independent variables. Cooper and Schindler (2011) propose two methods for dealing with presence

of multicollinearity; using one of the variables and dropping the other or creating a new variable that is a composite of the highly intercorrelated independent variables and use the new variable for the study.

3.6 Data Analysis and Presentation

From literature, data analysis is a practice that involves conversion of raw data to enable extraction of useful information (Saunders et al, 2012). The process involves ordering and organizing the data. Quantitative and qualitative data was collected necessitating the use of mixed methods for data analysis. According to Vargas-Hernandez, De Leon and Valdez (2011) quantitative measures attract the attention to the underlying objective facts giving evidence of the phenomena while qualitative data colours the analysis and interpretation of such phenomena. Normality test was carried out on quantitative data.

The data was coded and processed using Statistical Package for Social Science (SPSS) Version 24 data analysis software. Boone and Boone (2012) acknowledge difficulties of analyzing Likert data due to its non-continuous nature. Some of Likert type items were analyzed individually while others were combined into Likert scale data, summarized and converted into "accept" and "reject" to convert the qualitative responses into quantitative data. Data analysis was be carried out by use of descriptive and inferential statistics.

For Likert type items descriptive statistics such as median, mode, frequencies and Chi-square were used. For quantitative data obtained from Likert scale descriptive statistics such as mean, standard deviation, Pearson's R, ANOVA, regression analysis and t-test were applied. Descriptive statistics enable presentation of quantitative descriptions in a manageable form (Gupta & Gupta, 2005). Prior to subjecting the data to inferential statistical analysis normality test of the data set were carried out. Normality test was carried out to test whether the results were normally distributed. Consideration of descriptive values such as kurtosis and skewness of the data set were some of the tests

used to check for normality of the data set. Use of non-normally distributed data can lead to incorrect results (Mukerji, 2008).

Multiple regression analysis was carried out to establish whether a relationship existed between the independent variables and the dependent variable. Pearson's moment correlation is a measure that is used to determine whether a relationship exists between each of the independent variables and the dependent variable and to indicate the strength and direction of such relationship (Argyrous, 2011).

Inferential statistics were used to further analyze the data. Argyrous (2011, pp. 283) defines inferential statistics as "*the numerical techniques for making conclusions about a population based on information obtained from a random sample drawn from that population"*. Analysis of Variance (ANOVA) also referred to as the F-test was carried out to test the significance of the overall model chosen for the study. The researcher tested the various research hypotheses at a confidence level of 95%.

Discrete choice models are used to describe a decision maker's choice between alternatives (Ben-Akiva & Lerman, 1985). In this study the dependent variable reshoring decision was dichotomous (binary) having only two possible outcomes; to re-shore (relocate out of Kenya) or stay in Kenya. An appropriate framework for analyzing reshoring strategy decision is a discrete choice framework with the binomial logistic regression model or binary logistic model. Discrete choice models have been used in earlier research to study relocation decision. Timmins and Murdock (2007) used multinomial logit model in their study on angler's choices of fishing sites while Lavric, Panhans and Hanley (2014) used the same model to study the effects of energy costs on firm relocation decisions.

The binomial logistic model used for the study is given below.

$$P\,[Yn(=1|X)] = \exp(\,X'n\,\beta)/\,[1 + exp(X'n\,\beta) = F(X'n\,\beta)$$

$$P\,[Yn(=0|X)] = 1/[1 + \exp(\,X'n\,\beta) = 1 - F(X'n\,\beta)$$

$P\ [Yn(=1|X)]$ = exp $(X'n\ \beta)$ / [1 +exp $(\beta_0 + \beta_1X_1 + \beta_2X_2 + \beta_3X_3 + \beta_4X_4 + \beta_5X_5)$

$= F(\beta_0 + \beta_1X_1 + \beta_2X_2 + \beta_3X_3 + \beta_4X_4 + \beta_5X_5)$

$P\ [Yn(=0|X)]$ = 1/[1+ exp $(\beta_0 + \beta_1X_1 + \beta_2X_2 + \beta_3X_3 + \beta_4X_4 + \beta_5X_5)$

$= 1 - F(\beta_0 + \beta_1X_1 + \beta_2X_2 + \beta_3X_3 + \beta_4X_4 + \beta_5X_5)$

Log likelihood

$$Log\ L\ (\beta) = \sum_{y=0} \log[1 - F\ (\ X'n\ \beta)] + [1 + \sum_{y=1} log\ (X'n\ \beta)$$

$Log\ L\ (\beta) = \sum_{y=0} \log[1 - F\ \ (\beta_0\ + \beta_1X_1\ + \beta_2X_2\ + \beta_3X_3\ + \beta_4X_4\ + \beta_5X_5)\ +\ [1 + \sum_{y=1} log\ (\beta_0 + \beta_1X_1 + \beta_2X_2 + \beta_3X_3 + \beta_4X_4 + \beta_5X_5)$

The sixth variable customer base is a moderating variable. To assess the moderating influence of customer base, the binomial model used is as given below:

$P\ [Yn(=1|X)] = \exp(\ X'n\ \beta)/\ [1 + exp(X'n\ \beta) = F(X'n\ \beta)$

$P\ [Yn(=0|X)] = 1/[1 + \exp(\ X'n\ \beta) = 1 - F(X'n\ \beta)$

$P\ [Yn(=1|X)]$ = exp $(X'n\ \beta)$ / [1 +exp $(\beta_0 + \beta_1X_1 + \beta_2X_2 + \beta_3X_3 + \beta_4X_4 + \beta_5X_5 + \beta_6X_6)$

$= F(\beta_0 + \beta_1X_1 + \beta_2X_2 + \beta_3X_3 + \beta_4X_4 + \beta_5X_5 + \beta_6X_6)$

$P\ [Yn(=0|X)]$ = 1/[1+ exp $(\beta_0 + \beta_1X_1 + \beta_2X_2 + \beta_3X_3 + \beta_4X_4 + \beta_5X_5 + \beta_6X_6)$

$= 1 - F(\beta_0 + \beta_1X_1 + \beta_2X_2 + \beta_3X_3 + \beta_4X_4 + \beta_5X_5 + \beta_6X_6)$

Log likelihood

$$Log\ L\ (\beta) = \sum_{y=0} \log[1 - F\ (\ X'n\ \beta)] + [1 + \sum_{y=1} log\ (X'n\ \beta)$$

$$Log\ L\ (\beta) = \sum_{y=0} \log[1 - F\ (\beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 X_5 + \beta_6 X_6) + [1 + \sum_{y=1} log\ (\beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 X_5 + \beta_6 X_6)$$

Where: Y is the dependent variable (reshoring decision),

β_0 is the coefficient of the constant term

L_n is the natural logarithm, $\log_{exp,}$ where exp = 2.71828

P is the probability that the event Y occurs, P(Y=1), otherwise

X_n represents the independent variables

X_1 = production cost

X_2 = product quality

X_3 = operational flexibility

X_4 = reduced time to market

X_5 = hidden cost

X_6 = market condition

$\beta_1, \beta_2, \beta_3, \beta_4, \beta_5, \beta_6$ = regression coefficient of the six variables

e = error term which is assumed not to be normally distributed

The parameters β estimated by use of maximum likelihood estimation.

CHAPTER FOUR

RESEARCH FINDINGS AND DISCUSSION

4.1 Introduction

This chapter represents the empirical findings and results of the application of variables of the study using the methods and techniques outlined in chapter three. The analysis of data was aligned to the specific objectives of the study and aimed at testing the following research hypotheses (1) H_0: Production cost does not influence production reshoring decision among Kenya's manufacturing multinational corporations (2) H_0: Product quality does not influence production reshoring decision among Kenya's manufacturing multinational corporations (3) H_0: Operational flexibility has no influence on production reshoring decision among Kenya's manufacturing multinational corporations (4) H_0: Reduced time to market has no influence on production reshoring decision among Kenya's manufacturing multinational corporations (5) H_0: Hidden cost has no influence on production reshoring decision among Kenya's manufacturing multinational corporations H_0: Market condition has no moderating influence on the relationship between the strategic drivers and production reshoring decision among Kenya's manufacturing multinational corporations. The purpose of this chapter is to analyze, present and interpret data in form of tables, graphs and figures combined with a brief narrative and interpret the findings. The structure of this chapter starts with introduction, followed by background information and the rest of the subsections are guided by the hypotheses tested.

4.2 Response Rate

A total of 86 questionnaires were delivered physically to the sampled multinational corporations. Except for 10 respondents who requested the questionnaire to be send on email, all other questionnaires were through physical delivery and collection. The results

indicate that majority of the respondents at 86.8% preferred physical administering of questionnaire.

A total of 76 questionnaires were properly filled and returned representing a successful response rate of 88.4%. Ellram et al. (2013) conducted a similar study of 3,303 manufacturing multinationals achieving a response rate of 9.7%. The response rate achieved can be classified as very good as asserted by Mugenda and Mugenda (2003), they opine that a 50% response rate is adequate, 60% good and above 70% rated very good. Further according to Neuman (2000) a response rate of 50% and above is adequate for a survey study. Accordingly based on the recommendations by the two scholars, it can be concluded that the response rate of 88.4% is very good for this study.

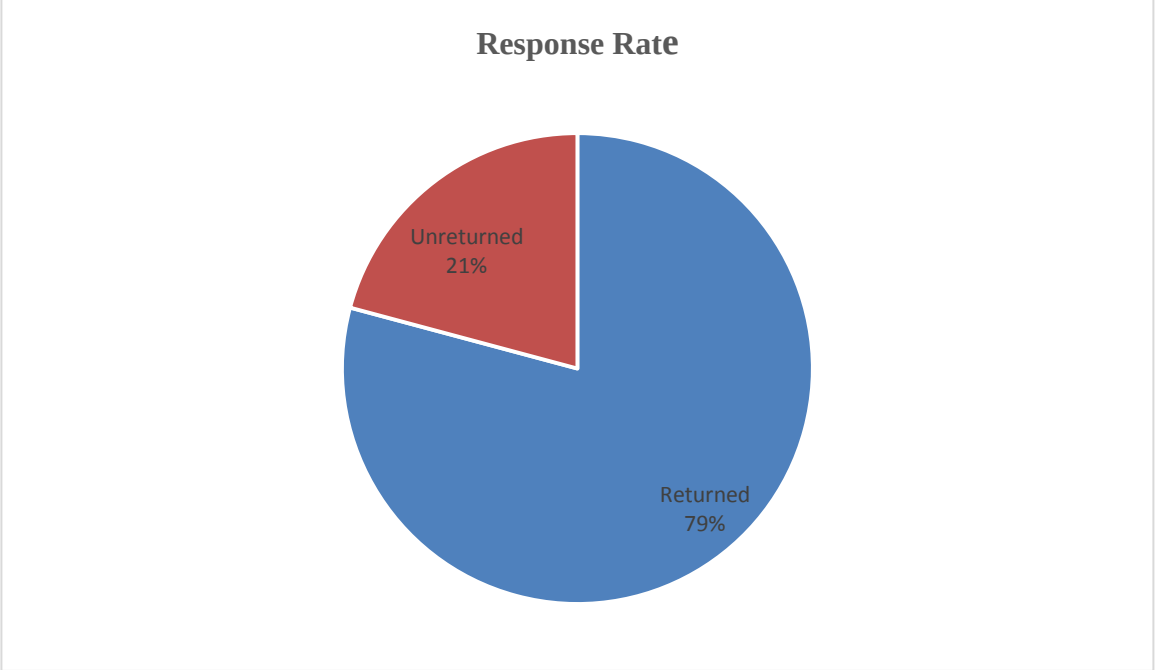


Figure 4.1: Response Rate

Figure 4.2 provides an analysis of the industry sectors of the respondents. The highest percentage of respondents came from the food and beverage sector at 33.3% of the followed by chemical and allied at 16.7% while building, mining and construction and plastics and rubber accounted for 9.7% of the respondents respectively. Respondents from other sectors were distributed as follows: motor vehicle assembly & accessories (8.3%), pharmaceutical & medical equipment (4.2%), textile and apparel (4.2%), 2.8% timber, wood & furniture (2.8%). Four of the respondents did not indicate the industry sector their organizations belonged to and were therefore not included in the computation of the percentages of positive responses. The results suggest that the respondents came from different sub-sectors of the manufacturing sector which enhanced sub-sector representation. Further the four respondents who did not indicate the sector had no major impact on the study findings.

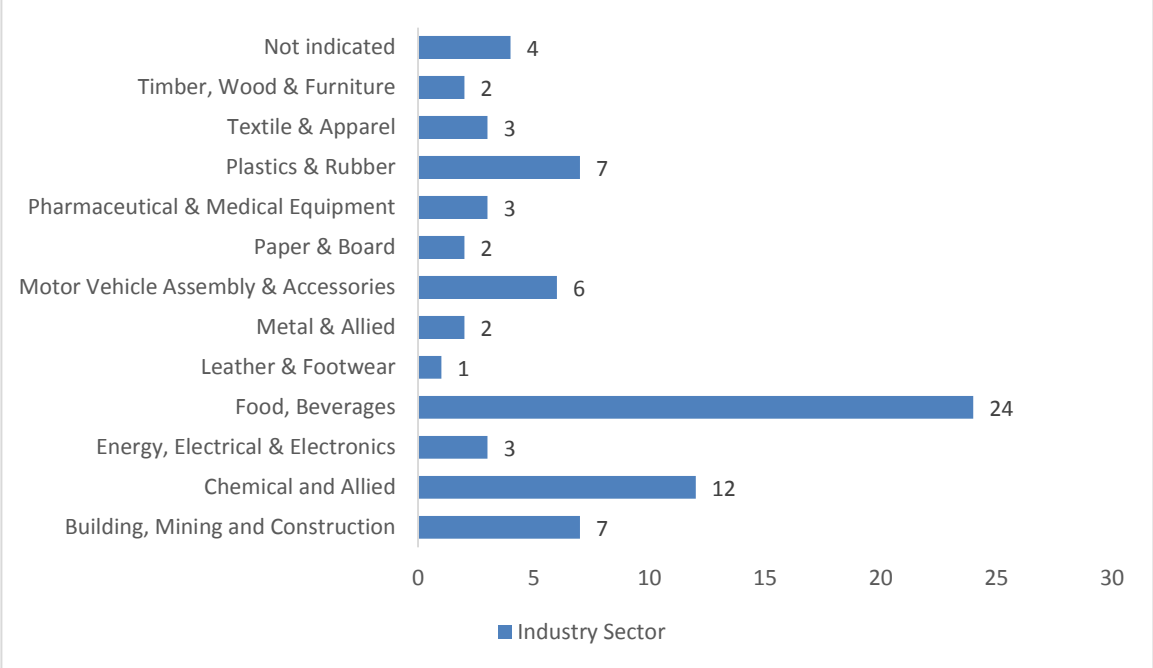


Figure 4.2: Industry Sector

4.3 Pilot Test Results

A pilot testing was carried out prior to implementation of the study to ensure that the research instrument measured what was intended in conformity with Cooper and Schindler (2011). Reliability and validity tests were conducted on the data collection instrument.

4.3.1 Reliability Analysis

During the pilot test phase of this study, reliability test was performed; to this end, the Cronbach's Coefficient Alpha was employed. Cronbach's Alpha is a reliability coefficient that indicates how well items in a set are positively correlated to one another (Sekaran, 2003). Reliability is the consistency of a set of measurement items while validity indicates that the instrument is testing what it should (Cronbach, 1951). As rule of thumb, reliability value of 0.7 and above is recommended for most researches to denote the research instrument as reliable (Sekaran, 2003; Robert, 2006). The items on each of the variables in the questionnaire were subjected to Cronbach's Coefficient Alpha test and all the items were found to be reliable for measurement because the reliability coefficient was found to be above the recommended threshold of 0.7. The findings are shown in the Table 4.1.

Table 4.1: Reliability Analysis

Variable	Cronbach's alpha	No of items
Production Cost	.730	6
Product quality	.766	4
Operational flexibility	.789	8
Reduced time to market	.862	3
Hidden Cost	.763	5
Reshoring Decision	.844	8

4.3.2 Validity Analysis

Validity is used to determine whether the data collection instrument is measuring that which it is intended to measure and performs as it is intended to (Golafshani, 2003; Ihantola & Kihn, 2011). To test for construct validity and highlight variability among observed variables and check for any correlated variables for redundancy in data to be reduced factor analysis was important in the study as suggested by Hair, Anderson, Babin, Tatham & Black's (2010). Exploratory factor analysis was employed to assess construct unidimensional scales and identify the structure of the measurement of outer model for the items in the study. This was performed purposefully to refine and retain the most important number of factors. In this case only factors with values 0.4 and above were used for further analysis as recommended by Hair et al. (2010) and Tabachnick and Fidell (2007). The two studies described the factor loadings as follows: 0.32 (poor), 0.45 (fair), 0.55 (good), 0.63 (very good) or 0.71 (excellent) (Hair et al., 2010; Tabachnick and Fidell, 2007).

Table 4.2 shows overall factor analysis for all the variables; Production cost had six items with factor loadings 51.2%. All the items were accepted based on the general rule of thumb for acceptable factor loading of 0.40% and above. No item was removed or expunged. Product quality with four items, a factor loading of 63.1% was recorded with no item dropped. For operational flexibility, with eight items recorded a factor loading of 62.3% no items were eliminated. For reduced time to market, there were four items of which one item was dropped for inconsistency and factor loading of 60.1% was recorded. Hidden cost and market conditions each had five items with a factor loading of 61.1% and 72.1% respectively with and all items were retained. Reshoring decision had eight items with a loading factor of 69.7% and no item was dropped. The result of the factors measuring the dependent variable reshoring decision was also subjected to factor analysis. All the factor loadings were above 41% which implies that all items fall within the acceptable threshold as no item was dropped. All items retained were considered for further statistical analysis.

Table 4.2: Summary of Factor Analysis

	Production Cost	Number of Items	Factor Loadings
1	Production Cost	6	.512
2	Product quality	4	.631
3	Public Operational flexibility	8	.623
4	Reduced time to market	3	.601
5	Hidden Cost	5	.611
6	Market Condition	5	.721
5	Reshoring Decision	8	.697

4.4 Demographic Characteristics of Respondents

The information sought in this section was preliminary to the study objectives and was intended to provide information on the characteristics of the sample. Responses received showed the number of years the respondents had worked in the study organization, the industry sector of operation, position held by the respondents and whether the organization was a Kenyan MNC or a subsidiary of an international MNC.

4.4.1 Respondents' Demographics

The study sought to establish the length of service of the respondents. The findings were presented in Figure 4.3. Majority of respondents at 38.16% have worked for between 6 to10 years while 31.16% for less than 5 years; 18.42% for over 15 years while the reminder at 11.84% have worked for a period of between 11 and 15 years in their organization. The findings indicate that majority of the respondents (68.84%) have worked in their organization for six years or more and are therefore more likely to be aware of the issues that the research instrument sought to address. Further 47.4% of the

respondents held the position of Chief Finance Officer, 23.6% that of Chief Executive Officer while 29% held other senior positions related with strategic decision making.

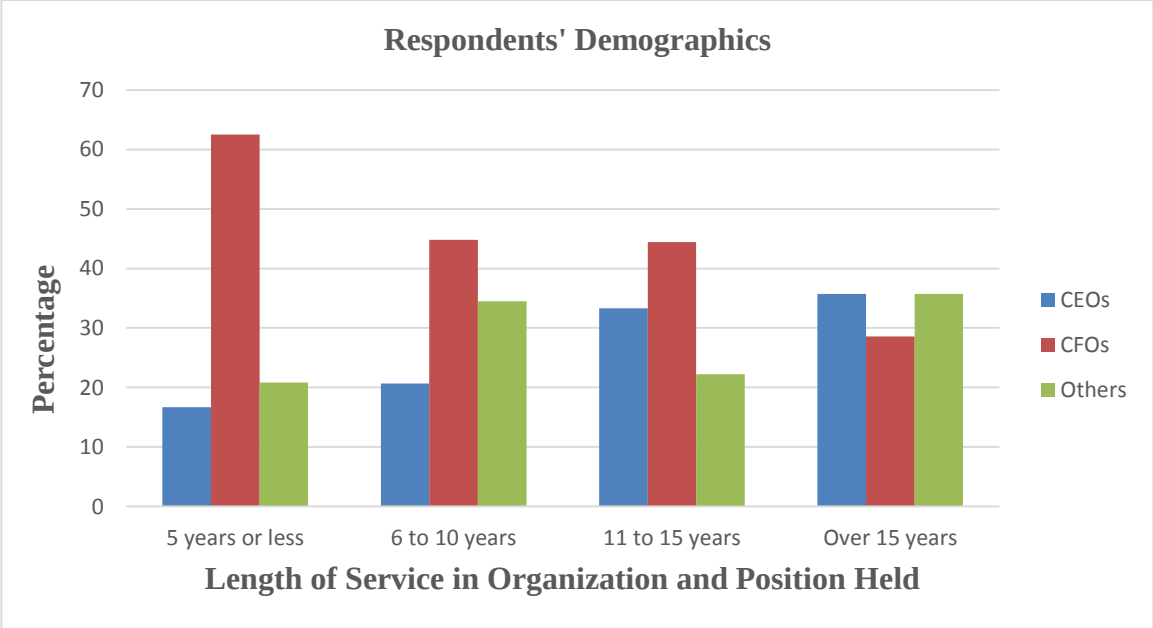


Figure 4.3: Respondents' Demographics

4.4.2 Type of Organization

The respondents were asked to state whether their organization was a Kenyan owned multinational corporation or a foreign owned multinational corporation subsidiary. The results in Figure 4.4 show that majority of the organizations were classified as Kenyan MNCs at 78.08% while 21.92% were subsidiaries of international MNCs. This implies that only 21.92% of the firms would be said to reshore if they were to move their production facilities from Kenya. For the 78.08% of the firms whose home country is Kenya, moving their production facilities from Kenya would be considered offshoring. However, offshoring and reshoring are considered two opposite sides of the same coin (Kinkel & Maloca, 2009). The composition of the MNCs did not affect the study findings.

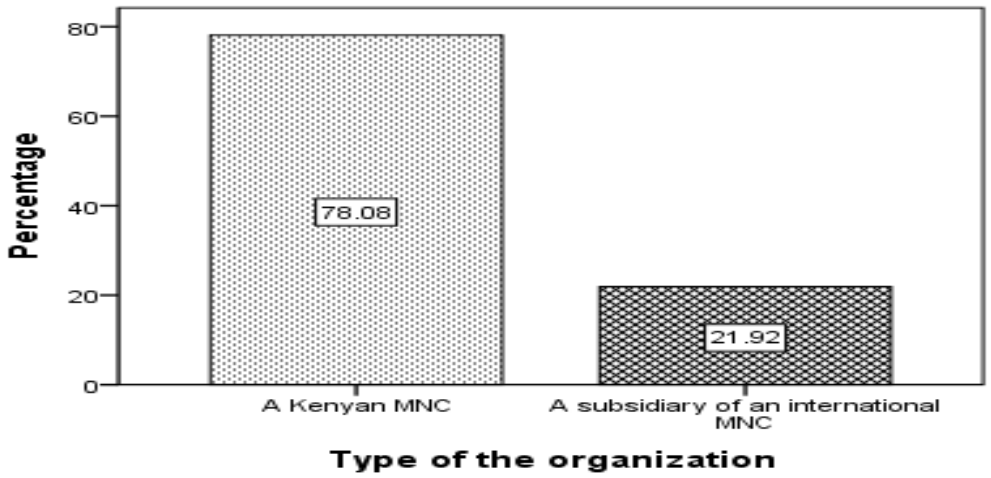


Figure 4.4: Type of Respondent's Organization

4.5 Descriptive Statistics of Study Variables and Discussion

The study sought to establish the strategic drivers influencing production reshoring decision among manufacturing multinational corporations operating in Kenya. Five independent variables were explored including: production cost, product quality, operational flexibility, reduced time to market and hidden cost. In addition, the study considered the moderating effect of market conditions on the relationship between the independent variables and the dependent variable. The dependent variable reshoring decision was also explored. The study findings relating to the above variables are discussed in this section.

4.5.1 Production Cost

The first objective of the study sought to explore the influence of production cost on production reshoring decision among Kenya's manufacturing multinational corporations. The respondents were asked to rate the extent which they agreed or disagreed with the six aspects of production cost as they relate to production reshoring decision.

The study sought to find out the extent to which production cost increase in current location influence production reshoring decision. The finding in Table 4.3 indicate 65.8% of the respondents believe that labour cost increase in current location influences

production reshoring decision. A mean of 3.70 was recorded with standard deviation of 0.888 indicating that majority of the respondents agree that labour cost in the current location influences production reshoring decision to a large extent. Regarding increase in labour cost in an offshore production location a mean of 3.32 and standard deviation of 1.224 were recorded. This result agrees with studies conducted in German by Fisch and Zschoche (2012), in New Zealand by Canham and Hamilton (2013) and in U.K. by Bailey and De Propris (2014) which showed that rising labour cost has an influence on reshoring decision. On the question of increase in energy cost in current location a mean of 3.93 and a standard deviation of 0.914 were recorded. Similarly, regarding energy cost increases in offshore location, a mean of 3.53 and a standard deviation of 1.172 were recorded. The findings are similar to those of Tate *et al.* (2014) and Needham (2014). Increases in energy costs was driving manufacturing reshoring (Tate et al., 2014; Needham, 2014).

Concerning increase in other production overheads, a mean of 3.85 and a standard deviation of 1.386 were recorded. Regarding productivity per worker results reflected a mean of 3.22 and a standard deviation of 1.192. Results suggest that productivity per worker is not a critical factor on reshoring decision. This may be attributed to the fact that labour productivity has not been fully embraced in the Kenyan labour market (KAM, 2012). The results are contrary to Sirkin *et al*. (2011) who found productivity per worker to be a critical factor in reshoring decision for American manufacturing MNCs. On the question of what cause of action, they would take were cost advantages there a currently enjoying were eroded, 67% of respondents indicated that they would continue in the current location and pass on the additional cost to consumers. 23% of the respondents indicated that they would move their production to a location that offered lower-cost advantage. The Kenya Association of Manufacturers has been at the forefront of seeking government intervention on issues relating to high energy and labour costs as a means of addressing challenges facing manufacturing entities (KAM, 2012; Maina, 2014).

Table 4.3: Descriptive Statistics for Production Cost

Statement	Least Extent	Small Extent	Moderate Extent	Large Extent	Very Large Extent	Mean	Std. Deviation
Labour cost increase (current location)	3.9%	13.2%	17.1%	40.8%	25.0%	**3.70**	1.108
Labour cost increase (offshore)	13.2%	9.2%	25.0%	38.2%	14.5%	**3.32**	1.224
Energy cost increase (current location)	1.3%	2.6%	28.9%	35.5%	31.6%	**3.93**	0.914
Energy costs increase (offshore)	6.6%	13.2%	23.7%	34.2%	22.4%	**3.53**	1.172
Other production overhead cost increase	3.9%	21.1%	22.4%	38.2%	14.5%	**3.85**	1.386
Productivity per worker	11.8%	15.8%	32.9%	17.1%	22.4%	**3.22**	1.192

Manufacturing performance data was obtained from the Kenya National Bureau of Statistics (GoK, 2018). Table 4.4 provides selected quantum statistics. The manufacturing sub-sectors have recorded mixed performance over the last five years between 2013 to 2017. Majority of the sectors have recorded growth of 6% or move. Growth in food and beverage sector has been flat recording a 1% overall change. Three sectors mainly timber and wood, motor vehicle assembly and accessories and leather and footwear have recorded negative growth of 9%, 25% and 28% respectively.

Results confirm the manufacturing sector's declining contribution to GDP over the last decade. Manufacturing contribution has declined from a high of 10.8% in 2008 to 8.4% in 2017 (GoK, 2018). The findings are similar to those of WBG (2014) and Nthiga *et al*. (2014) which indicate declining competitiveness of the Kenya manufacturing sector.

Table 4.4: Selected Quantum Statistics for Kenya Manufacturing Production

Sector	2013	2014	2015	2016	2017	% change 2013-2017
Pharmaceutical & medical equipment	250.0	295.9	360.8	435.3	430.6	72%
Wearing apparel	154.4	172.9	196.8	230.8	243.8	58%
Chemical and allied	112.6	125.3	134.6	134.3	136.7	21%
Metal & allied	149.8	152.7	150.9	171.9	178.8	19%
Paper & board	144.9	140.1	140.3	153.6	160.1	10%
Textile	112.1	113.9	129.9	120.6	118.5	6%
Plastics & rubber	111.8	118.6	125.9	132.4	118.1	6%
Food and beverages	126.3	132.5	134.7	143.2	127.8	1%
Timber & wood	113.9	132.4	138.4	119.2	103.5	-9%
Motor vehicle assembly & accessories	131.0	161.4	171.0	116.4	98.2	-25%
Leather & footwear	135.4	118.6	100.0	111.5	98.1	-28%

Source: GoK (2018). *Economic Survey 2018*. Kenya National Bureau of Statistics, Nairobi.

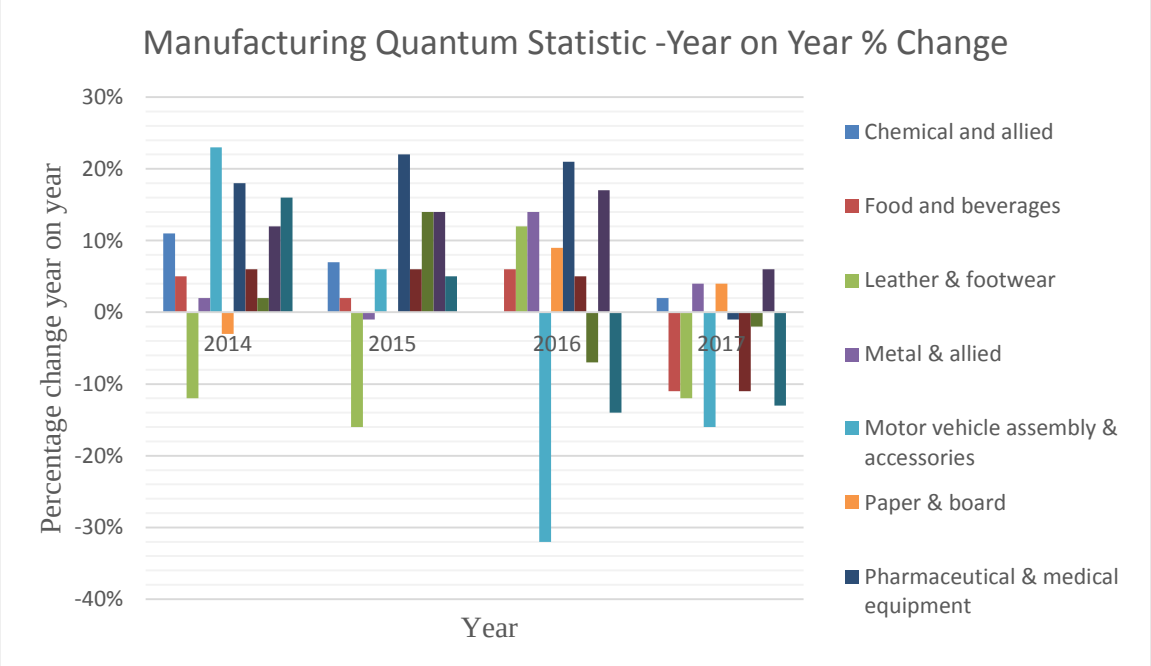


Figure 4.5: Manufacturing Quantum Statistics Year on Year % Change

Source: GoK (2018). *Economic Survey 2018*. Kenya National Bureau of Statistics, Nairobi.

Figure 4.5 shows the year on year change of manufacturing quantum statistics for the various manufacturing industry sectors. Declining performance may lead to firms considering moving production activities to locations with better comparative advantage. Results agree with Were (2016) who observed that manufacturing performance for Kenya was lagging behind its East African neigbours.

Results from World Bank (2018) manufacturing sector performance indicators show that manufacturing value added has registered an average of growth of 6.1% between 2013 and 2017 with production cost (intermediate consumption) averaging 6% and value-added growing by 6.5%. However, over the same period labour cost has grown by 10.4% which is 403 base points above growth in value of output. Labour cost as a percentage of value of output has risen from 7% in 2013 to 9% in 2017. Figure 4.6 shows the year on year trends for manufacturing indicators for Kenya.

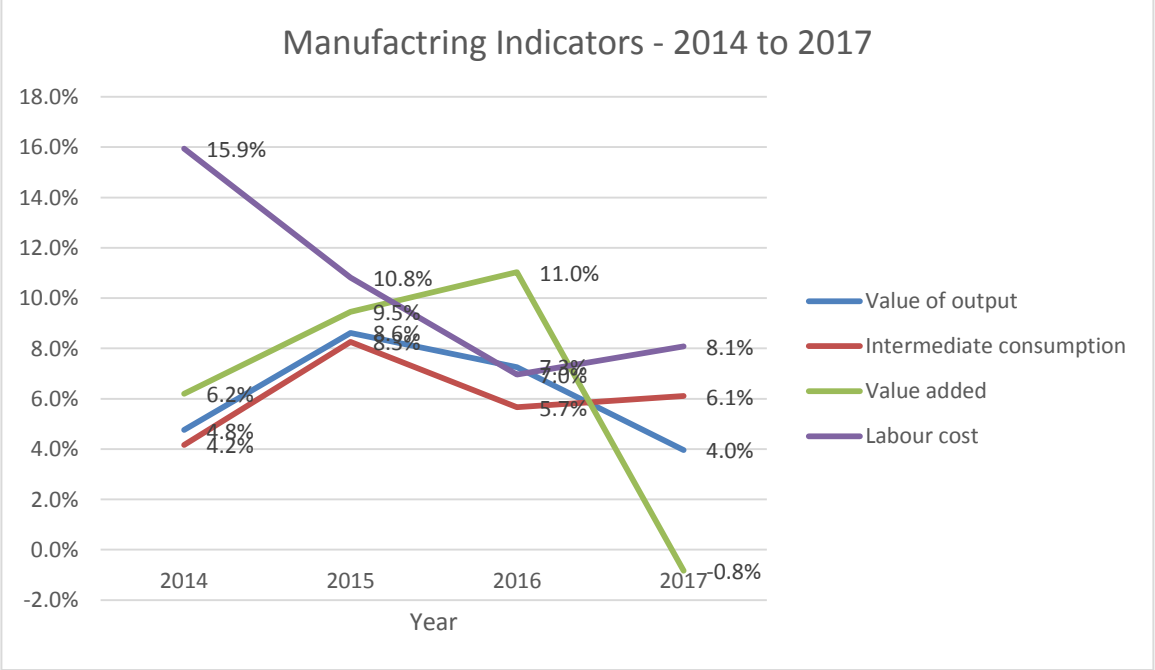


Figure 4.6: Kenya Manufacturing Indicators

Source: WBG (2018) *Manufacturing indicators dataset*. The World Bank Group

Comparative analysis on industry electricity tariffs was carried out using World Bank Group and International Energy Agency datasets. Figure 4.7 shows industry electricity charges for Kenya and several of its trading partners in Africa. Electricity tariffs for Kenya are 50% higher than Uganda and South Africa, 7% higher than Tanzania and 250% higher than Egypt. 500% higher than Ethiopia. Higher energy costs contribute to erosion of Kenya's comparative advantage as noted by Maina (2014). Similarly, Nthiga *et al*. (2014) found that manufacturing competitiveness was declining due to higher energy costs.

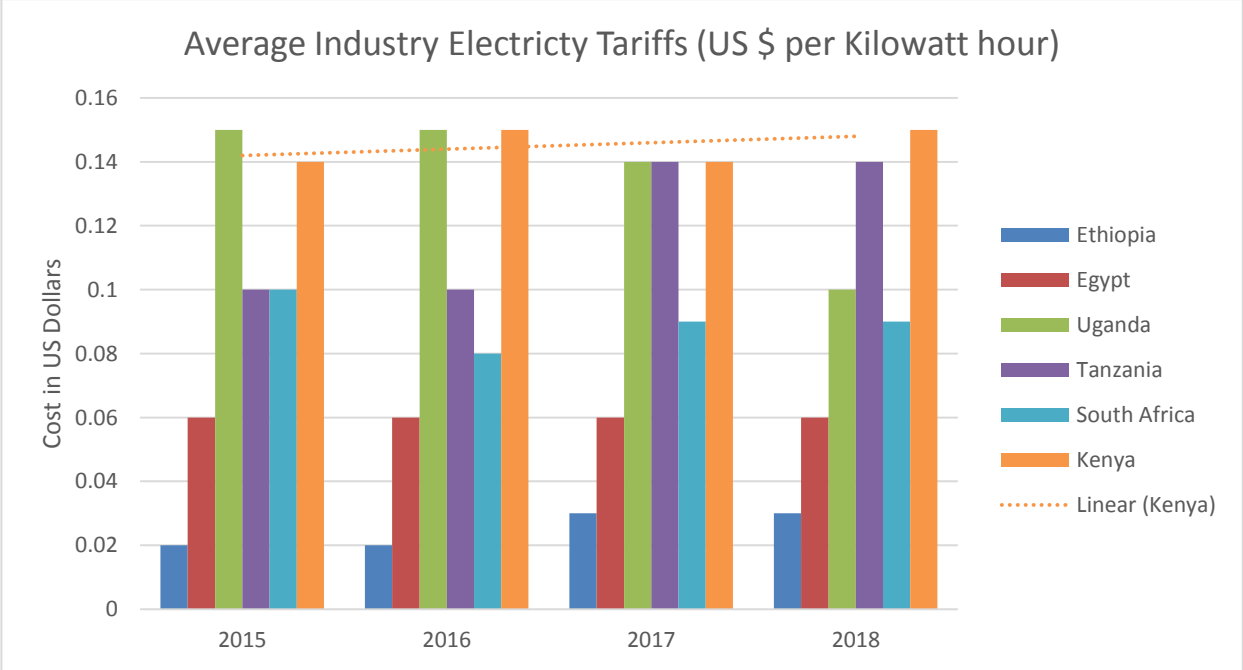


Figure 4.7: Average Industry Electricity Tariffs for Selected African Countries

Source: WBG (2018) *Manufacturing indicators dataset*. The World Bank Group

In comparison to industrialized economies, electricity tariff charged to manufacturing entities in Kenya is much higher than that of China, South Korea and the US. Figure 4.8 shows the details on electricity tariffs. Data from the International Energy Agency (2018) indicates that global industry electricity tariff has been at US $ 0.14 per kilowatt hour over the last three years. Kenya's rate of US $ 0.15 per kilowatt hour is above the

global average which suggests that Kenya is not a low-cost location for manufacturing meaning that the country is likely to experience reshoring of its production to other low-cost locations. Results concur with Fratocchi *et al*. (2016) who post that rising production costs influence manufacturing firms to seek other lower cost manufacturing locations.

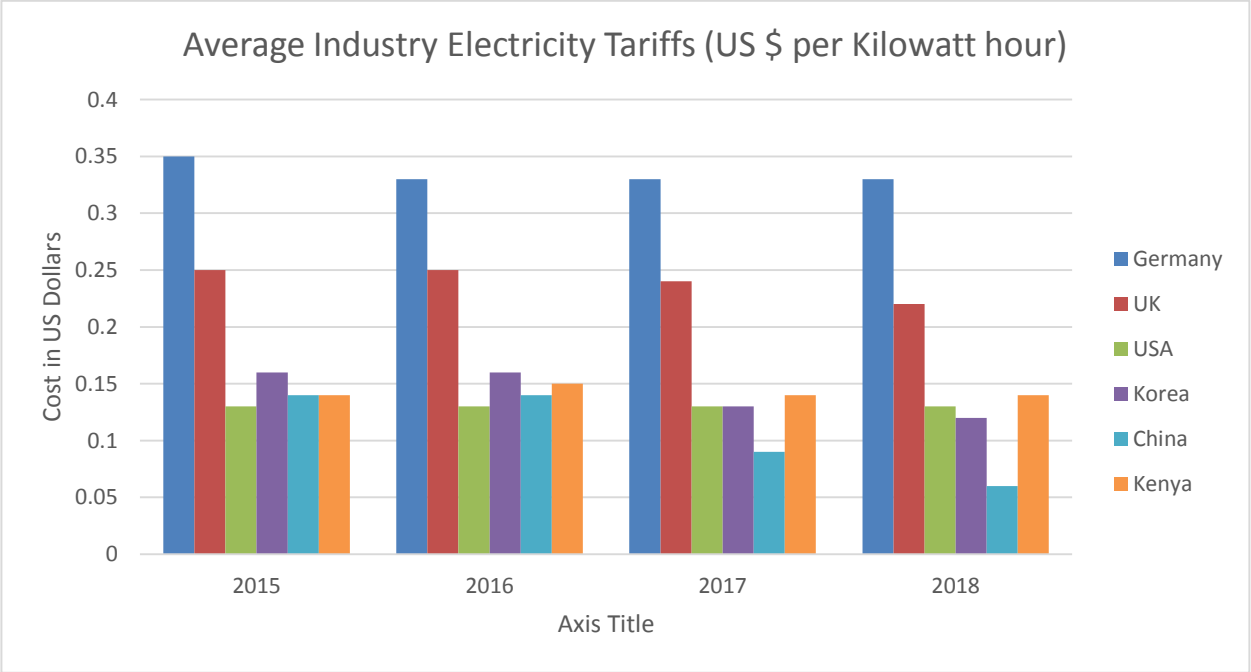


Figure 4.8: Average Industry Electricity Prices for Kenya and Selected Countries

Source: WBG (2018) *Manufacturing indicators dataset.* The World Bank Group

4.5.2 Product Quality

The second objective of the study sought to determine the influence of product quality on production reshoring decision among Kenya's manufacturing multinational corporations. The respondents were asked to rate the extent of their agreement or otherwise with the four aspects of product quality: value of products returned by customers due to quality concerns; extent to which product quality influences customer's

purchase decision; influence of product origin on its perceived quality; importance of brand image to the organization.

Table 4.5 shows the study results on aspects of product quality respondents were asked. 94.7% of the respondents indicated that value of products returned by customers due to quality concerns were below 1% of total manufacturing output; a mean of 4.61 and a standard deviation of 0.634. Results concur with Canham and Hamilton who found that product quality concerns drove New Zealand manufacturing firms to reshore production. Similarly, Bailey and De Propris (2014) noted the importance of quality. A study conducted by Kinkel (2012) in Germany found that product quality emerged as the most important motivator for reshoring for German manufacturing firms. The findings are also in line with International Association for Six Sigma (IASSC, 2018) recommendations on product quality defects level of 10,000 defective parts per million.

Regarding whether product quality influences a customer's purchase decision, a mean of 4.39 and a standard deviation of 0.694 was recorded further indicating the importance of quality perception by customers. Results agree with study by Grappi *et al.* (2015) who suggest that a consumer's willingness to purchase a product is influenced by their perception of its quality. On issue of whether a products origin influences its perceived quality, 84.2% agreed that product quality is influenced by its manufacturing origin with a mean of 4.13 and a standard deviation of 0.699 recorded.

Asked what strategic action they would take if customers were concerned with product origin, 68% of respondents indicated that they would continue to produce their products in current location whilst providing assurances to their customers regarding product quality for their brands; 20% of the respondents indicated they would consider moving production facilities to a location with a reputation for high product quality. In addition, 94% of the respondents indicated that they had received compliments regarding their product quality. Results confirm the importance of product quality for Kenyan manufacturing MNCs. Fratocchi *et al.* (2014) in their study of Italian manufacturing

firms noted that the debate on reshoring was revolving around product origin and customers' association of production origin with its quality.

A country's reputation for producing quality products is critical in enhancing the willingness to purchase products made in that country. De Backer *et al.* (2016) posit that Italian consumers were emphasizing on 100% Made in Italy. Sirkin *et al*. (2013) note similar findings for the United States of America. Brand image was important given by the 86.8% of the respondents who agreed; a mean of 4.25 and a standard deviation of 0.802. Findings concur with Brennan *et al.* (2015) whose results suggest the importance of brand image for manufacturing entities. The study findings suggest that product quality is a key strategic issue for organizations and has significant influence on reshoring decision. It can be concluded that Kenyan manufacturing MNCs are aware of the importance of product quality and its impact on the manufacturing entity's corporate image.

Table 4.5: Product Quality Descriptive Statistics

Statement	Least Extent	Small Extent	Moderate Extent	Large Extent	Very Large Extent	Mean	Std. Deviation
Value of products returned by customers due to quality concerns is below 1% of manufacturing output	0.0%	1.3%	3.9%	27.6%	67.1%	**4.61**	0.634
Product quality influences customer's purchase decision	0.0%	0.0%	11.8%	36.8%	51.3%	**4.39**	0.694
Product origin influences its perceived quality	0.0%	1.3%	14.5%	53.9%	30.3%	**4.13**	0.699
Brand image critical to us	1.3%	1.3%	10.5%	44.7%	42.1%	**4.25**	0.802

4.5.3 Operational Flexibility

The third study objective was to examine relationship between operational flexibility and production reshoring decision. The respondents were asked to rate the extent to which they agreed with the eight aspects of operational flexibility. Analysis of the findings is shown in Table 4.6.

On extent to which operational efficiency was critical in sustaining competitiveness 89.4% agreed on the importance of operational efficiency in sustaining competitiveness; a mean of 4.22 and a standard deviation of 0.759 were recorded. Asked whether they would consider reshoring from a location that offered high rigidity and lower operational flexibility to a location that offered lower rigidity and high operational flexibility 74% of the respondents answered in the affirmative. This reflects the importance of operational flexibility for the surveyed manufacturing firms. The findings concur with Canham & Hamilton (2013) whose study on New Zealand manufacturing entities found that operational flexibility was critical for sustaining competitiveness. Further they noted that impaired capabilities in operational flexibility in offshore locations contributed to reshoring. Results from Fisch and Zschoche (2012) suggest that operational inflexibility influenced reshoring of German manufacturing firms.

Regarding where respondents had experienced increased customer requests for customization, a mean of 3.95 and standard deviation of 0.862 were recorded. On ability to handle short production runs, 67.1% indicated ability of their manufacturing processes to handle short production runs with a mean of 3.84 and a standard deviation of 0.939 recorded. Further a mean of 2.87 and a standard deviation of 1.46 were recorded regarding the degree of difficulty in meeting unique customer orders meaning majority of the MNCs had the capacity to meet unique customer orders. The ability to handle short runs reflects the flexibility of Kenyan manufacturing MNCs to meeting requests for customization and unique order processing. This is contrary to the findings of Wilkinson *et al*. (2015) where flexibility to meet unique customer order and handling short production runs was a challenge for U.K. firms. Wilkinson *et al*. (2015) found that

increased requested for customization led to reshoring decision for U. K. firms. The study by De Backer *et al*. (2016) observed that demand for customization was driving the need for manufacturing agility.

Concerning the aspect of improving customer responsiveness in servicing customer orders a mean of 4.05 and standard deviation of 0.878 recorded indicating that Kenyan MNCs were constantly working on improving customer responsiveness. On the need to reduce delivery lead times to end users a mean of 3.61 and standard deviation of 1.12 recorded. Reducing delivery lead times is associated with desire to improve customer responsiveness. The study by Bossche *et al.* (2015) noted that need for improving customer responsiveness and reduction of delivery lead times accounted for 23% of reshoring for American manufacturing entities. The study findings suggest that operational flexibility is mainly customer focused and manufacturing entities with offshore operations must aim for operational flexibility.

Table 4.6: Descriptive Statistics for Operation Flexibility

Statement	Least Extent	Small Extent	Moderate Extent	Large Extent	Very Large Extent	Mean	Std. Deviation
Operational efficiency critical in sustaining competitiveness	1.3%	1.3%	7.9%	52.6%	36.8%	4.22	.759
Increased customers' request for customization	0.0%	2.6%	31.6%	34.2%	31.6%	3.95	.862
Ability to handle short production runs	1.3%	6.6%	25.0%	40.8%	26.3%	3.84	.939
Improving customer responsiveness	1.3%	1.3%	23.7%	38.2%	35.5%	4.05	.878
Reduction of delivery lead times to end users	6.6%	7.9%	26.3%	36.8%	22.4%	3.61	1.12
Pressure to fulfilling shorter production run requests	14.5%	21.1%	28.9%	21.1%	14.5%	3.00	1.26
Production location determines ability to meet unique customer orders	21.1%	11.8%	27.6%	23.7%	15.8%	3.03	1.38
Difficulties in meeting unique customer orders	28.9%	10.5%	21.1%	23.7%	15.8%	2.87	1.46

Global competitiveness indicator production process sophistication index measures a country's manufacturing industry production processes in terms of labour utilization and degree of technology used on a range of 1 to 7; with score of 1 being high labour intensive and low technology use to score of 7 for highly automated processes and agile

manufacturing using latest technology. Figure 4.9 provides production process sophistication index for Kenya and selected regional players in manufacturing industry.

Kenya's score of 3.8 is second only to South Africa meaning that the country's production processes are not labour intensive and there is above average use of latest manufacturing technology. South Africa has a better production process sophistication than Kenya. Production process sophistication index results suggest that firms seeking more sophisticated production processes may choose South Africa over Kenya. This may explain the reported cases of relocation of production from Kenya to South Africa and some manufacturing MNCs as observed by Nthiga *et al*. (2014).

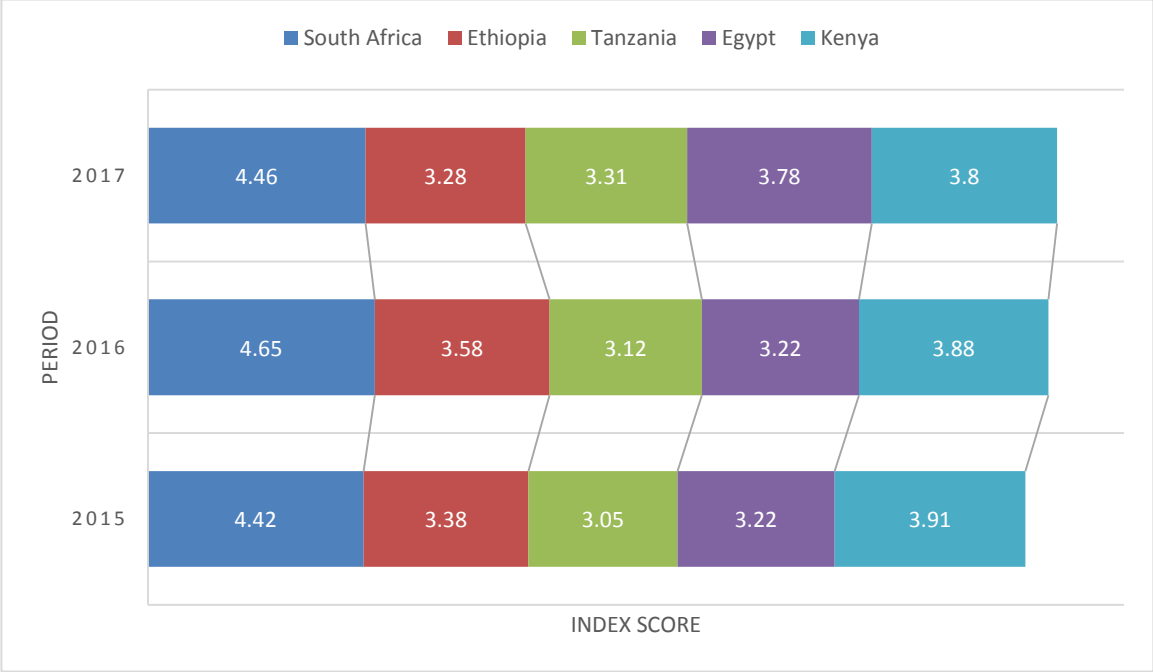


Figure 4.9: Production Process Sophistication Index

Source: WBG (2018) *World Economic Forum Global Competitiveness Index Dataset.* The World Bank Group

4.5.4 Reduced Time to Market

The fourth objective of the study sought to determine the influence of reduced time to market on production reshoring decision. The respondents were asked to rate the extent to which they agreed or disagreed with the three aspects of reduced time to market in relation to decision to reshore: criticality of shorter delivery lead times on organization's competitiveness; goods market inefficiencies (continued longer lead times) on reshoring and customers demanding for shorter delivery times. Details of the findings are shown in Table 4.7.

Concerning the extent to which shorter delivery lead times are critical for sustaining competitive strategy 76.3% of respondents indicated shorter delivery times as being critical in sustaining competitive strategy; a mean score was 4.09 with a standard deviation of 0.819 was recorded. Ellram *et al*. (2013) noted the significance delivery logistics in sustaining a firm's competitive advantage. The study by Wilkinson *et al.* (2015) for U.K. manufacturing noted that U.K. firms' competitiveness was enhanced due to ability to sustain shorter delivery lead times to the markets they serve. The findings suggest that shorter delivery times are critical to the competitiveness of Kenya manufacturing multinationals.

Regarding goods market inefficiencies that result in longer delivery lead time a mean of 3.36 with standard deviation of 1.293 were recorded. On the extent to which customers were demanding for shorter delivery times, a mean of 3.55 and a standard deviation of 1.237 were recorded indicating that customers were demanding for shorter lead times. Asked whether they would consider locating their manufacturing facilities closer to markets they serve in order to reduce proximity to market distance, 80% of the respondents indicated they would move their manufacturing facilities closer to market. Results reflect the importance of reduce time to market for Kenya manufacturing MNCs. The findings concur with Gylling *et al*. (2015) who observed that pressure for shorter delivery times were driving reshoring decisions. Results are also consistent with Martinez-Mora and Merino (2014) in their study of the Spanish footwear industry. They

noted that changing customer preferences such pressure for shorter lead times were driving reshoring among Spanish footwear manufacturers. Bossche *et al.* (2015) opined that consumer responsiveness improvements including delivery times was responsible for 10% of reshoring decisions for American MNCs. Results from Wilkinson *et al*. (2015) and De Backer *et al*. (2016) also affirm the importance of reduced time to market in reshoring decisions.

Table 4.7: Descriptive Statistics for Reduced Time to Market

Statement	Least Extent	Small Extent	Moderate Extent	Large Extent	Very Large Extent	Mean	Std. Deviation
Shorter delivery lead times critical for sustaining competitive strategy	0.0%	2.6%	21.1%	40.8%	35.5%	4.09	.819
Goods market inefficiencies (longer lead times)	10.5%	19.7%	13.2%	36.8%	19.7%	3.36	1.293
Customers demanding for shorter lead times	9.2%	10.5%	21.1%	34.2%	25.0%	3.55	1.237

Adequate modes of transport are crucial for delivery of raw materials and finished products to markets as efficiently and reliably become key considerations for MNCs. Dataset from World Bank Group (2018) was used to compare key global competitiveness indicators for Kenya and its trading partners within the Africa region. Goods market efficiency index measures several indicators including buyer sophistication, intensity of competition and degree of customer orientation. Infrastructure index measures the efficiency of the transportation system. Global

competitiveness score ranges from a low of one with seven being the highest and best score (WBG, 2018).

On goods market efficiency Kenya with a score of 4.35 ranks second behind South Africa at 4.48 and well ahead of Egypt (4.15), Tanzania (3.90) and Ethiopia (3.71). Further except for Egypt and Kenya whose index has improved between 2016 and 2017, the rest of the countries included in the analysis have recorded declining results. Kenya's good efficiency market index also ranks ahead of the global average of 3.6 (WBG, 2018). Results imply that Kenya scores above world average on buyer sophistication, intensity of competition and degree of customer orientation. Table 4.8 shows details of the analysis.

Table 4.8: Goods Market Efficiency Index

Country	**Good market efficiency Score**		
	2016	2017	% Change
South Africa	4.64	4.48	-3.4%
Ethiopia	4.01	3.71	-7.5%
Tanzania	3.93	3.90	-0.8%
Egypt	3.95	4.15	5.1%
Kenya	4.23	4.35	2.8%

Source: WBG (2018) *World Economic Forum Global Competitiveness Index Dataset.* The World Bank Group

Quality of infrastructure is critical for efficiency in delivery of goods to the market. Cost efficiency in transportation can be a source of competitive advantage (Srinivasu & Rao, 2013). Presence of enough and quality infrastructure facilitates enlargement of markets.

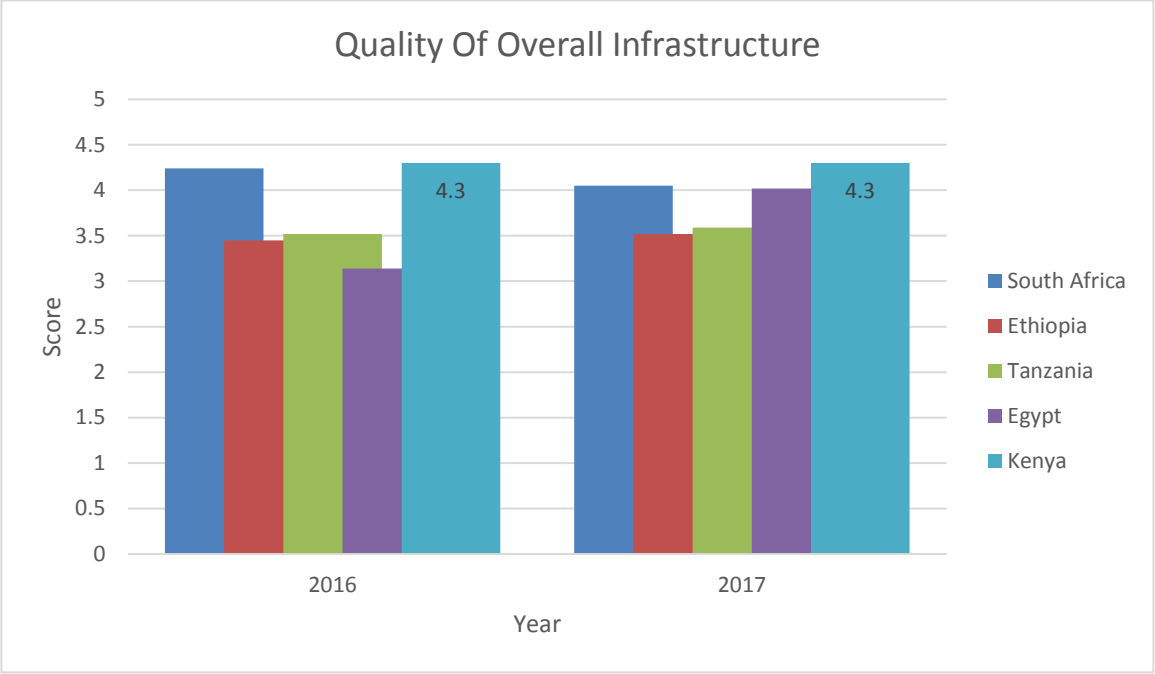


Figure 4.10: Quality of Infrastructure Index

Source: WBG (2018) *World Economic Forum Global Competitiveness Index Dataset.* The World Bank Group

World Bank data on quality of overall infrastructure in a country indicates that Kenya has a score of 4.3 ahead of South Africa at 4.05 and Egypt at 4.02. The good score can be traced to significant investments in infrastructure improvements in Kenya over the last ten years (GoK, 2018). This implies that Kenyan manufacturers are enjoying better quality infrastructure than their counterparts in the region. Achieving efficiency in supply chain and reducing delivery times to end customers is an objective which every manufacturing entity seeks as suggested by Bossche *et al*. (2015). Manufacturing MNCs seeking efficiency in logistics are likely to prefer South Africa to Kenya due to its between score on goods market efficiency and near enough quality of infrastructure. Figure 4.10 provides details of overall infrastructure scores.

4.5.5 Hidden Cost

The fifth objective of the study was to establish the relationship between hidden cost and production reshoring decision among Kenya's manufacturing multinational corporations. Figure 4.8 shows the analysis of findings. Five aspects of hidden cost were considered, and respondents asked to rate the same. Table 4.9 shows the results.

One the aspect whether firms considered all costs of operations in making production facility location decision 89.5% agreed with mean of 4.29 and a standard deviation of 0.689 recorded. Results are consistent with Moser and Beyer (2011) who found that several United States of America manufacturing entities including Walmart and General Electric reshored their production from offshore locations due to not fully considering all costs in the initial decision to reshore. hidden cost considerations. The findings also concur with Kinkel and Maloca (2009) in their study of German manufacturing entities where reshoring was found to be a correction of prior decision to offshore arising from miscalculation of true costs of offshore operations.

Costs that have not been fully considered at time of making decision to reshore contribute to erosion of offshore low-cost advantage leading to decision to reshore (Ferreira & Prokopets, 2009). The study by Gylling *et al*. (2015) observed the importance of better understanding of total cost of ownership in cost comparisons between home country and offshore locations. Inability to ascertain such costs of foreign operations is explained by the degree of offshoring complexity as suggested by Larsen *et al*. (2011). Results also minor those of Tate (2014) who noted increased keenness of MNCs on total cost of operations considerations. The findings suggest that Kenya manufacturing entities considered total cost of operations concept as critical in making offshoring and reshoring decisions. Further those that do not consider total costs of operations when making offshoring decision are likely to reverse the same in future.

Concerning whether firms had experienced frequent supply chain disruptions in the last three years a mean of 3.30 and standard deviation of 1.19 was recorded. Findings indicate that occurrence of frequent supply chain disruption had not to a large extent

been noted by the respondents. Regarding whether natural disasters had affected firm's supply chain mean of 3.12 and standard deviation of 1.21 was recorded. Results indicate that only 38% of the respondents had experience disruption of their supply chain arising from natural disaster occurrence. The study by Moser (2016) involving United States of America manufacturing multinationals, supply chain disruption was found to be one major reasons for reshoring. Further Carvalho *et al*. (2014) found that supplier chain disruptions due to natural disasters such as earthquakes increases operational costs due to need to seek alternative supply networks.

On the extent to which intellectual property risk influence decision to reshore production the results reflected a mean of 3.43 and standard deviation of 1.23 indicating the respondents agreed that intellectual property risks influence decision to reshore. The results reflect the concerns of Kenyan manufacturing MNCs as suggested by KAM (2012) who noted high presence of counterfeit products in the Kenyan market that has resulted in closure considerable financial losses by several copyright holders. Intellectual property theft has been identified as a major global problem (Hoecht & Trott, 2014). Intellectual property theft undermines legitimate manufacturers particularly in locations where intellectual property rights are not enforced as noted by Backer *et.al*. (2016).

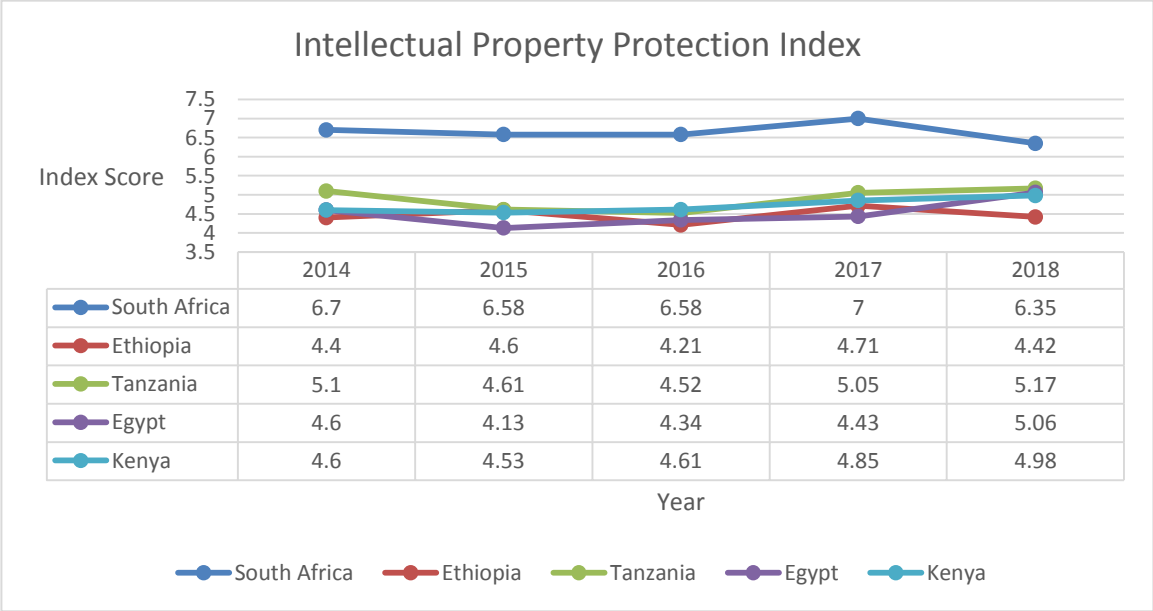
Regarding whether coordination cost increase influences decision to reshore mean of 3.42 and standard deviation of 1.25 was recorded suggesting that coordination cost increase was considered to a large extent as a factor in reshoring. Moser (2016) study on reshoring for United States of America manufacturers noted that increase in coordination costs was a major factor in reshoring for United States of America firms. Overall hidden cost emerged as a major consideration in production reshoring decision for Kenya manufacturing MNCs.

Table 4.9: Descriptive Statistics for Hidden Cost

Statement	Least Extent	Small Extent	Moderate Extent	Large Extent	Very Large Extent	Mean	Std. Deviation
We considered total cost of operations in making production location decisions	0.0%	1.3%	9.2%	48.7%	40.8%	4.29	.689
We have experienced frequent supply chain disruptions over the last three years	9.2%	14.5%	30.3%	28.9%	17.1%	3.30	1.19
Natural disasters have affected our supply chain	7.9%	26.3%	27.6%	23.7%	14.5%	3.12	1.21
Intellectual property risks influence decision to relocate production	10.5%	6.6%	34.2%	27.6%	21.0%	3.43	1.23
Coordination cost increase influence decision to reshore	10.5%	10.5%	27.6%	28.9%	22.4%	3.42	1.25

Global competitiveness intellectual property protection index indicates the extent to which intellectual property is protected by a given country (WBG, 2018). Aspects include patent registration processes, patent protection, judicial processes, copyright piracy and control of corruption. Data from the Property Rights Alliance (PRA, 2018) on intellectual property protection index indicates Kenya's score has improved from 4.6 out of 10 in 2014 to 4.98 in 2018. This implies that the country's level of intellectual

property protection has been on an improving trend. However, although Kenya's scores highly on patent registration at 7.9 and patent protection at 6.4, it's score on copyright protection at 2.4 and control of corruption at 3.2 indicates that the country has a long way to go in improving its near world average score of 4.98. Figure 4.11 provides details of the intellectual property protection index. Results indicated that perceived risk of intellectual property theft in Kenya is much higher than South Africa. MNCs that place a high premium on intellectual property theft are likely to choose South Africa over Kenya.



	2014	2015	2016	2017	2018
South Africa	6.7	6.58	6.58	7	6.35
Ethiopia	4.4	4.6	4.21	4.71	4.42
Tanzania	5.1	4.61	4.52	5.05	5.17
Egypt	4.6	4.13	4.34	4.43	5.06
Kenya	4.6	4.53	4.61	4.85	4.98

Figure 4.11: Intellectual Property Protection Index

Source: International property rights index. Property Rights Alliance, https://internationalpropertyrightsindex.org

Further analysis was carried out on the amount spend by Kenya and its regional counterparts on payment of intellectual property rights acquired from intellectual property owners. Figure 4.12 provides the details of the analysis. Results indicate that amounts paid by Kenya entities for use of intellectual property declined from US $ 91.72 million in 2015 to US $ 68.57. similar trend that been witnessed in Tanzania. Growth in

intellectual property charges has been witnessed for South Africa and Ethiopia. Kenya has witnessed considerable growth in information communication technology and use of proprietary software and other intellectual property (GoK, 2018). However, results in Figure 4.11 indicate otherwise which suggests further increase in risk of intellectual property theft for Kenya. MNCs having low risk tolerance on intellectual property theft are likely to move to safer locations as observed by De Backer *et al*. (2016).

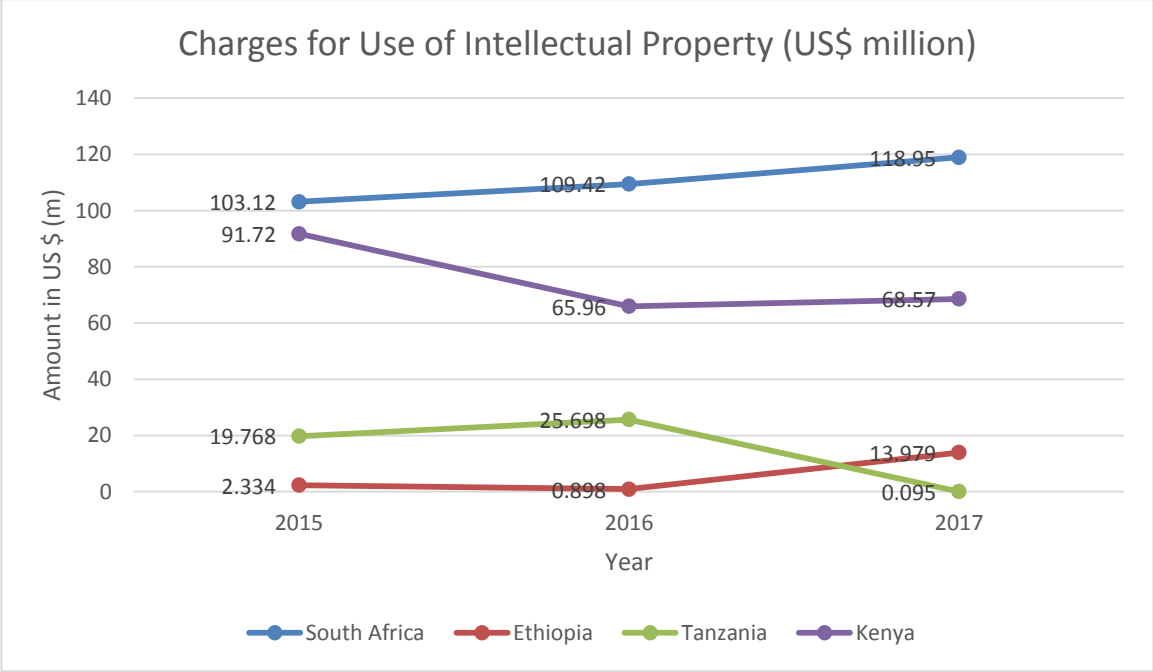


Figure 4.12: Charges for Use of Intellectual Property

Source: WBG (2018) *World Economic Forum Global Competitiveness Index Dataset.* The World Bank Group

4.5.5 Market Condition

The sixth objective of the study was to establish the moderating influence of market condition on the relationship between other variables and production reshoring decision. To establish this, the respondents were asked to state the share of their production sold in the company's home country market and host county market as shown in Figure 4.13

and 4.14 respectively. For home country market, 65% of production was sold by 35.5% of respondents, while 31.6% were sold between 41-65%. On the other hand, for the host country market, the results indicate that, majority at 40.8% were between 25-40%, 21.1% were between 41-65%. This implies that foreign owned multinational corporations sold 38.1% of their production outside of the host country.

From the finding it can be concluded that much of the production was sold in the MNC's home country market. 78.08% of the respondents were Kenyan MNCs while 21.92% were foreign owned MNCs. Gylling *et al*. (2015) in their study found that growth in home country sales volume was driving reshoring. Similarly, Vanchan *et al*. (2018) note that loss of demand in home country is driving reshoring of outsourced offshoring activities.

Figure 4.13: Home Country Market Production Sales

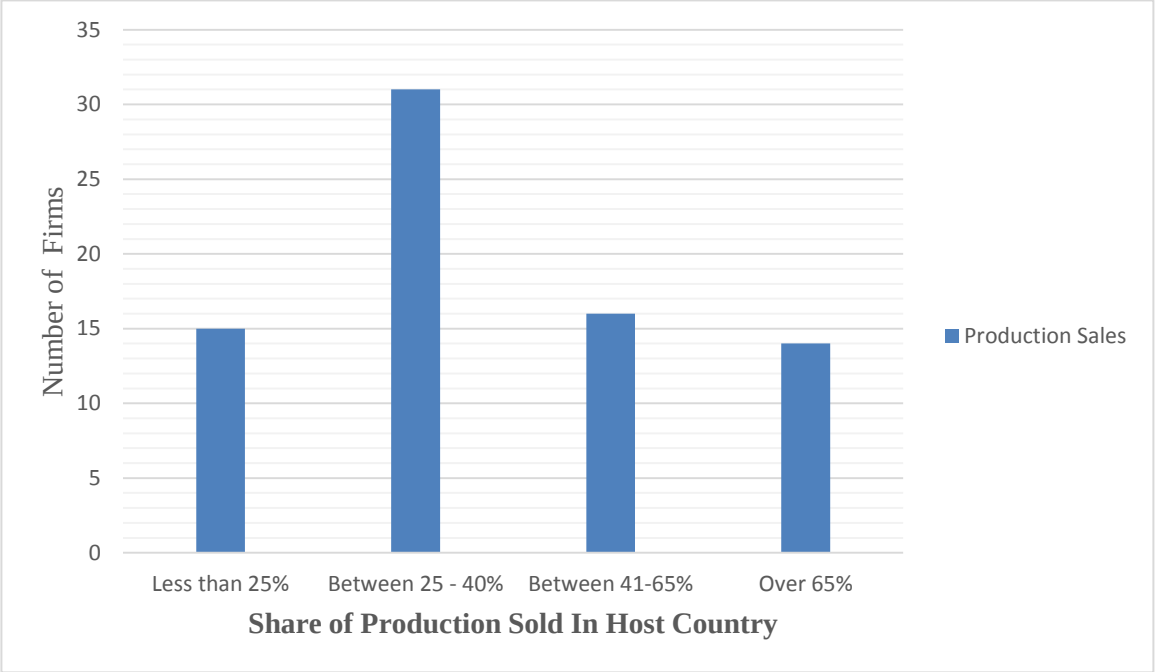


Figure 4.14: Host Country Market Production Sales

The Global Competitiveness indicator market size is a combination of country size and foreign markets. According to World Bank Group (2018) large markets allow for exploitation of economies of scale which impacts positively on a country's productivity and provides incentives for innovation. Countries with export-driven economies score highly on market size index meaning their exports from domestic production are higher than imports.

Results from Table 4.10 indicate Kenya's market size index score to be the lowest among its regional peers. The findings concur with WBG (2014) who observed that Kenya's manufacturing sector was lagging behind its East African Community counterparts. Further KIPPRA (2013) noted the low competitiveness of Kenya's manufacturing sector relative to its neigbours. Wu and Zhang (2014) also noted the importance of market size in reshoring decision. It can be concluded that Kenyan manufacturing entities may continue to experience low capacity utilization and productivity constraints as suggested by KAM (2012). Further the Kenya's

manufacturing competitiveness is likely to continue lagging behind its counterparts of Rwanda, Tanzania and Uganda.

Table 4.10: Market Size Index

	South Africa	Ethiopia	Tanzania	Egypt	Kenya
2015	4.94	3.88	3.76	5.07	3.8
2016	4.89	3.83	3.73	5.03	3.74
2017	4.91	3.89	3.81	5.08	3.8
2017 (WEF Ranking)	30	67	70	25	71

Source: WBG (2018) *World Economic Forum Global Competitiveness Index Dataset.* The World Bank Group

WBG (2018) defines domestic market size index as the sum of gross domestic product plus value of imports of goods and services less value of exports of goods and services. Table 4.11 provides data for market size index which indicates that Kenya's score of 3.8 out of 7 is below its regional counterparts except for Tanzania.

Wiesmann *et al*. (2017) posit that regional attractiveness is a major factor in reshoring decision with host country dynamics such as erosion of comparative advantage drive firms to reshore. Countries with large markets have a comparative advantage over those with smaller market size. MNCs seeking a location with large market size may prefer countries such as South Africa and Ethiopia over Kenya based on market size results as observed by WBG (2018).

Table 4.11: Domestic Market Size Index

Year	South Africa	Ethiopia	Tanzania	Egypt	Kenya
2015	4.82	3.85	3.67	5.05	3.72
2016	4.75	3.81	3.59	5.05	3.64
2017	4.77	3.88	3.69	5.09	3.74
2017 (WEF Ranking)	30	61	69	19	66

Source: WBG (2018) *World Economic Forum Global Competitiveness Index Dataset.* The World Bank Group

Further analysis was carried out to measure value of manufactured exports as a percentage of merchandise exports. Manufacturing exports for Egypt accounted for 53.62% of total merchandise export in 2017 up from 48.74% in 2013 compared to Kenya's 28.35% in 2017. In 2013 Kenya's manufactures exports accounted for 36.86% of total merchandise exports. Results show that Kenya's share of manufactures exports has decline by 22% over 2013 figures. Results support KAM (2012) and KIPPRA (2014) on stagnation of the manufacturing sector. Figure 4.15 shows the results.

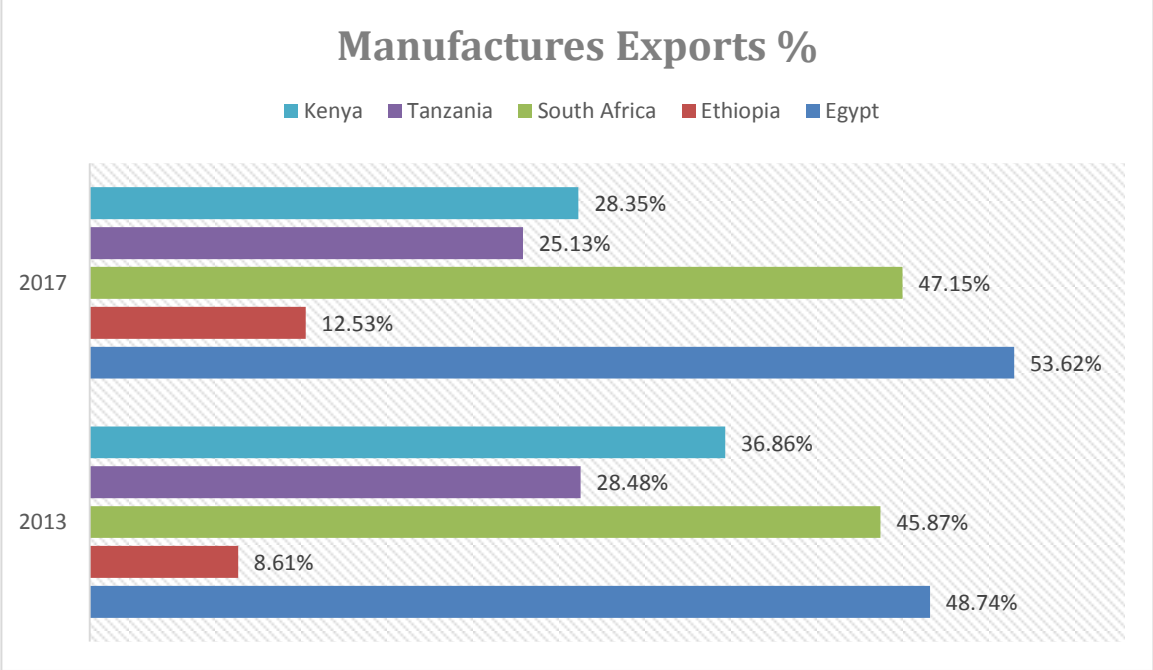


Figure 4.15: Manufactures Export (% of Merchandise Exports)

Source: WBG (2018) *World Economic Forum Global Competitiveness Index Dataset.* The World Bank Group

Whilst Kenyan manufactures export have been declining, manufactures imports have increased marginally rising from 61.61% of total merchandise imports in 2013 to 62%. This implies that value of manufactures imports is more than double that of manufactures exports. Results suggest a high preference of imports to locally produced

ones or inability to meet market demand on the part of local manufacturing entities. Figure 4.16 shows the details of analysis.

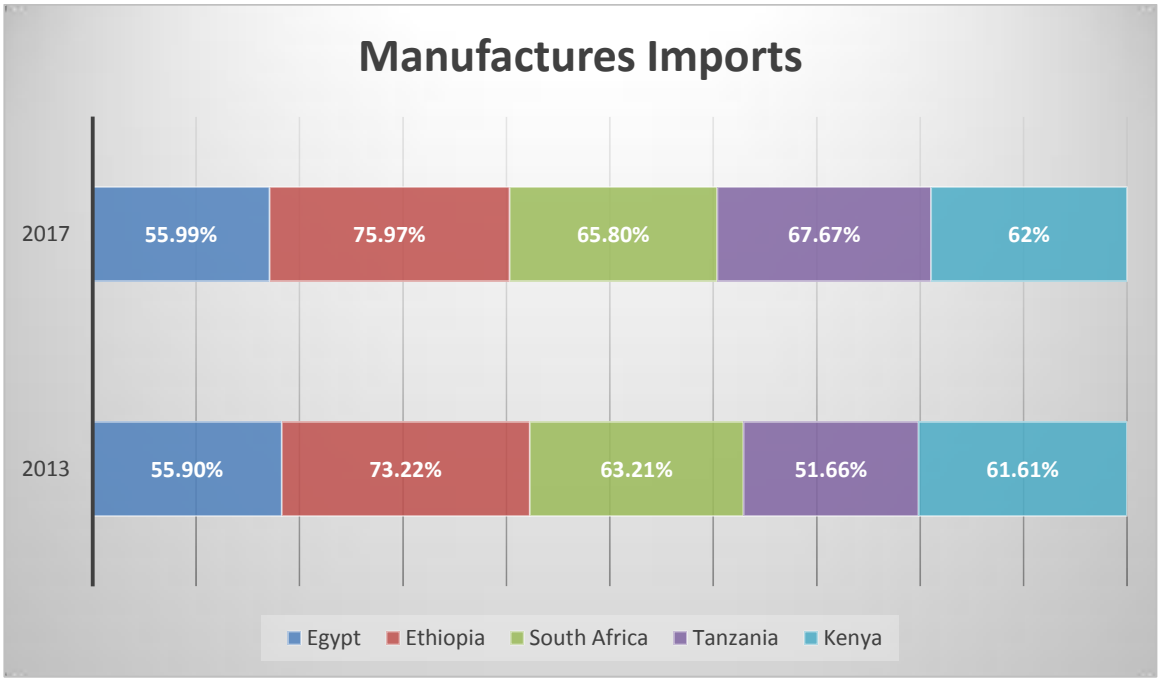


Figure 4.16: Manufactures Imports (% of Merchandise Imports)

Source: WBG (2018) *World Economic Forum Global Competitiveness Index Dataset.* The World Bank Group

Further, the respondents were asked to rate the extent to which they agreed with the four aspects of market condition and their moderating influence on production reshoring decision. Table 4.12 shows the results of the analysis.

Regarding the extent to which share of production sold in host country moderates the relationship between the independent variables and dependent variable, findings in Table 4.8 indicate that majority of the respondents (77.1%) agreed with a mean of 4.07 and a standard deviation of 1.04 recorded. The findings concur with the studies by Wu and Zhang (2014), Gylling *et al*. (2015) and Vanchan *et al*. (2018). Wu and Zhang (2014)

note the importance of market size movements and demand volatility in moderating production location decisions for MNCs while Gylling *et al*. (2015) suggest that sales volume growth in home country influences reshoring. Vanchan *et al*. (2018) observed that loss of demand was influence reshoring.

Concerning the extent to which desire to grow home country customer base moderated the influence between independent variables and dependent variable a mean of 3.47 and a standard deviation of 1.22 were recorded. Regarding production in home country improving home country customer responsiveness 54.2% agreed while 26.4% disagreed. This implies that majority of the respondents rated share of production sold in home country as improving home country customer responsiveness.

On the issue of extent to which host country demand volatility moderates the relationship between the independent variables and the dependent variable a mean score 3.61 was recorded with standard deviation of 1.17. The results show that demand volatility has a moderating influence on the relationship between the independent variable and the dependent variable. Martinez-Mora and Merino (2014) found that new demand conditions led to production reshoring in the Spanish footwear industry. However, Martinez-Mora and Merino (2014) study did not consider demand volatility as a moderating variable.

Table 4.12: Market Condition Descriptive Statistics

Statement	Least Extent	Small Extent	Moderate Extent	Large Extent	Very Large Extent	Mean	Std. Deviation
Share of production sold in host country	1.4%	12.2%	9.5%	36.5%	40.6%	4.07	1.04
Desire to grow home country customer base	9.3%	16.0%	18.7%	34.7%	21.3%	3.47	1.22
Production in home country improves home country customer responsiveness	12.5%	13.9%	19.4%	41.7%	12.5%	3.86	1.24
Host country demand volatility	9.5%	12.2%	12.2%	44.6%	21.6%	3.61	1.17

4.6 Test of Assumptions of Study Variables

This section presents the results of the various test of assumptions on the study variables including tests of normality, homoscedasticity, multicollinearity and independence of residuals. When these assumptions are violated, the study results are likely to give biased estimates of the parameters (Saunders et al., 2012).

4.6.1 Factor Analysis

Factor analysis was conducted to ascertain the suitability of all the factors measured for all the study variables. Correlation matrix was obtained for all the factors and scrutinized for chances of multicollinearity among the items. Correlation matrix gives the correlation coefficients between a single factor and every other factor in the investigation. The correlation coefficient between a factor and itself is always 1; hence the principal diagonal of the correlation matrix contains 1s which produces an identity matrix (Kothari, 2009).

The correlation matrices in Appendix III, indicate absence of multicollinearity amongst the observed factors for the variables under investigation. Further analysis using the determinants of the correlation matrices indicate that the matrices obtained were all identity matrices since the determinants were all greater than 0.00001; no problem of multicollinearity for all the variables was noted. In addition, Bartlett's Test of Sphericity as shown in Table 4.4 suggest that the matrices were all identity matrices since the p-values were all 0.000<0.05.

4.6.6.1.1 Sample Adequacy Test

The sample adequacy was measured using the Kaiser-Meyer- Olkin (KMO) test. According to Field (2013) sampling adequacy should be greater than 0.5 for a satisfactory factor analysis to proceed. A common rule is that a researcher should have 10 – 15 participants per variable. A factor analysis is inappropriate when the sample size is below 50 (Field, 2013). Kaiser (1974) recommends 0.5 as minimum (barely accepted), values between 0.7- 0.8 acceptable, and values above 0.9 are superb. From Table 4.13, the sample was acceptable since the KMO values were mainly between 0.707 and 0.810. The least value was 0.644 which was also good enough since it was above the minimum of 0.5.

Table 4.13: KMO and Bartlett's Test

Variable	Kaiser-Meyer-Olkin		Bartlett's Test of Sphericity	
	Sampling Adequacy	Approx. Chi-Square	df	Sig
Production cost	.707	300.162	45	.000
Product quality	.764	426.463	55	.000
Operational Flexibility	.664	304.174	28	.000
Reduced time to market	.810	321.121	28	.000
Hidden cost	.821	350.593	28	.000
Reshoring decision	.736	442.465	66	.000

4.6.2 Test of Normality

Normality test was carried out to test whether the results are normally distributed. Consideration of descriptive values such as kurtosis and skewness of the data set are some of the tests used to check for normality of the data set. Use of non-normally distributed data can lead to incorrect results (Mukerji, 2008). Consequently, skewness and kurtosis was employed as shown in Table 4.14. Skewness measures the deviation of distribution from symmetry and kurtosis measures 'peakness' of the distribution (Ming'ala, 2002). The values of skewness and kurtosis should be zero in normal distribution (Field, 2013).

Table 4.14: Skewness and Kurtosis Test

Variables	Std. Deviation	Skewness	Kurtosis	Std. Error		Z score	
				Skewness	Kurtosis	Skewness	Kurtosis
Production cost	4.43031	-.087	-.324	.231	.459	-0.396	-0.736
Product quality	6.21785	.176	.385	.231	.459	0.800	0.875
Operational flexibility	6.17376	-.546	1.156	.231	.459	-1.241	1.627
Hidden cost	4.53901	-.875	1.163	.231	.459	-1.978	1.644
Market condition	4.53901	-.875	1.163	.231	.459	-1.978	1.644
Reshoring decision	8.27604	-.192	.486	.231	.459	-0.873	1.105

Although it is assumed in multiple linear regressions that the residuals are distributed normally it is advisable before drawing final conclusions, to review the distributions of major variables of interest (Ming'ala, 2002). Histograms are a good way of getting an instant picture of the distribution of data (Field, 2013). Figure 4.17 shows the dependent variables normality test before it being transformed into binary type of data with yes or no response.

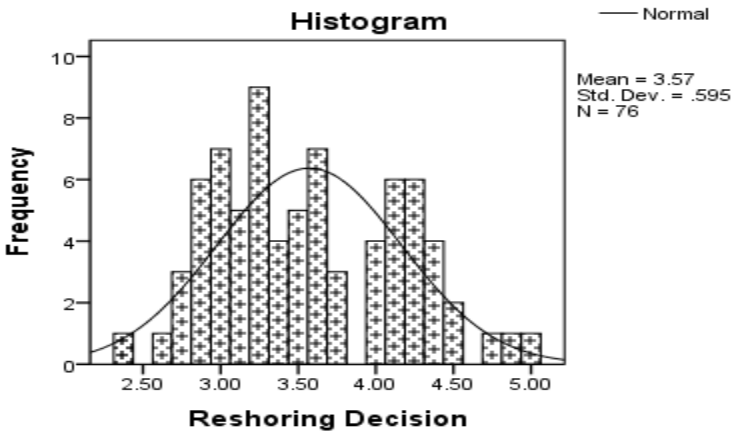


Figure 4.17: Histogram for Normality Test

A further test of normality using Kolmogorov- Smirnov and Shapiro Wilk test was done producing the results shown in Table 4.15.

Table 4.15: Kolmogorov-Smirnov and Shapiro-Wilk Test

Variables	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Production cost	.094	76	.091	.981	76	.319
Product Quality	.078	76	.200*	.954	76	.077
Operation flexibility	.126	76	.054	.962	76	.063
Reduced time to market	.148	76	.071	.950	76	.064
Hidden Cost	.127	76	.094	.965	76	.083
Market Condition	.094	76	.091	.981	76	.319
Reshoring Decision	.046	76	.200*	.989	76	.313

*. This is a lower bound of the true significance.

The test of normality for Kolmogorov- Smirnov and Shapiro-Wilk test show that, the p-values were greater than 0.05 indicating that the distributions were normally distributed. This shows that the independent variables and the moderating variable were all normally distributed.

4.6.2.1 Normality Using Q-Q plot

In addition, a further test of normality was done using the normal Q-Q plot for the dependent variable, reshoring decision. Results in Figure 4.18 show that the observed value was falling along a straight line indicating the variable was normally distributed which was consistent with the earlier findings based on skewness and kurtosis test, Kolmogorov- Smirnov and Shapiro Wilk test.

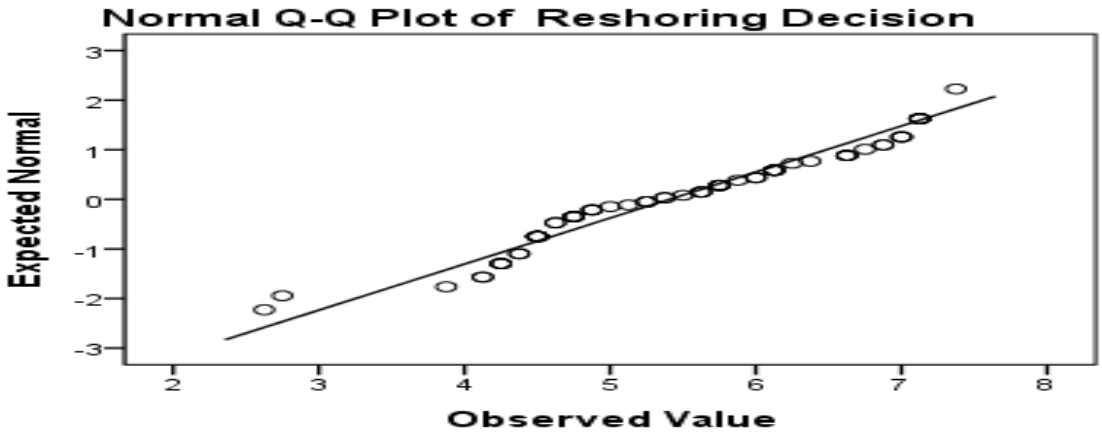


Figure 4.18: Q-Q Plot for Reshoring Decision

4.6.3 Test of Multicollinearity

To test the correlation between variables, multicollinearity test was conducted. Multicollinearity is a statistical phenomenon in which two or more predictor variables in a multiple regression model are highly correlated (Gujarat and Porter, 2009). It arises when there is a linear relationship between two or more independent variables in a single equation model (Gujarat and Porter, 2009). In a multiple regression analysis, the estimated regression coefficients fluctuate widely and become less reliable as the degree of correlation between independent variables increases (Kothari, 2004).

This result in the sample coefficient being far from the actual population parameter and when the coefficients are tested, the *t* – statistics becomes small, which leads to the

inference that there is no linear relationship between the affected independent variables and the dependent variable (Cooper & Schindler, 2011). Multicollinearity also increases the standard errors of the β coefficients, meaning that the βs have relatively higher variability across samples making it difficult to assess the individual importance of a predictor. Detection tolerance and variance inflation factor (VIF) method was used to test for multicollinearity (Cooper & Schindler, 2011). O'Brien (2007) suggested that a tolerance of less than 0.20 and a VIF of 5 or 10 and above indicates a multicollinearity problem. Multicollinearity is reflected by lower tolerance values and higher VIF values (Hair et. al., 2010). Table 4.16 indicates that variance inflation factor (VIF) results for the study variables was less than 5 while tolerance was greater than 0.2 which shows no multicollinearity between predictor variables.

Table 4.16: Coefficient for Tolerance and Variance Inflation Factor Tests

Model		**Collinearity Statistics**	
		Tolerance	VIF
1	(Constant)		
	Production Cost	.642	1.557
	Product quality	.922	1.084
	Operational flexibility	.634	1.577
	Reduced time to market	.525	1.903
	Hidden cost	.591	1.691

4.7 Regression Analysis

The correlation coefficient is a measure of linear association between two variables. Values of the correlation coefficient are always between -1 and +1. A correlation coefficient of +1 indicates that two variables are perfectly related in a positive linear sense, a correlation coefficient of -1 indicates that two variables are perfectly related in a negative linear sense, and a correlation coefficient of 0 indicates that there is no linear relationship between the two variables. In this study, correlation analysis was carried out between the variables using Pearson product-moment correlation coefficient both in the present of moderator and absence of moderator.

The findings show that majority of the independent variables had a positive and significant correlation with each other but not all in the absence of moderator. Some had no significant relationship with each other for instance; production cost and product quality, operational flexibility and product quality and hidden cost and product quality. The findings show that there was no multicollinearity amongst the independent variables since all the correlation coefficient values were below 0.8 as suggested by Tabachnick and Fidell (2007). The findings are shown in the Table 4.17 for results without moderator.

Table 4.17: Correlation of Coefficient Without Moderator

		Production Cost	Product equality	Operational flexibility	Reduced time to market	Hidden Cost
Production Cost	P. Correlation	1				
	Sig. (2-tailed)					
	N	76				
Product quality	P. Correlation	.138	1			
	Sig. (2-tailed)	.235				
	N	76	76			
Operational flexibility	P. Correlation	.511**	.276*	1		
	Sig. (2-tailed)	.000	.016			
	N	76	76	76		
Reduced time to market	P. Correlation	.506**	.268*	.526**	1	
	Sig. (2-tailed)	.000	.019	.000		
	N	76	76	76	76	
Hidden Cost	P. Correlation	.436**	.003	.402**	.576**	1
	Sig. (2-tailed)	.000	.978	.000	.000	
	N	76	76	76	76	76

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

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

Similarly, in the presence of the moderator, the findings indicate no presence of multicollinearity as shown in Table 4.18. The correlation coefficient r values were above

0.8 and the relationship among the independent variable was significant. Since the r values were below 0.8, Tabachnick and Fidell (2007) rule of thumb was not contradicted hence no problem of multicollinearity detected. This suggests that the model was good enough in both absence and present of moderator.

Table 4.18: Correlation of Coefficient With Moderator

		Production Cost*Z	Product quality*Z	Operational flexibility*z	Reduced time to market*Z	Hidden Cost*Z
Production Cost*Z	P. Correlation	1				
	Sig. (2-tailed)					
	N	76				
Product quality*Z	P. Correlation	.658**	1			
	Sig. (2-tailed)	.000				
	N	76	76			
Operational flexibility*Z	P. Correlation	.771**	.687**	1		
	Sig. (2-tailed)	.000	.000			
	N	76	76	76		
Reduced time to market*Z	P. Correlation	.619**	.589**	.586**	1	
	Sig. (2-tailed)	.000	.000	.000		
	N	76	76	76	76	76
Hidden Cost*Z	P. Correlation	.607**	.699**	.608**	.565**	1
	Sig. (2-tailed)	.000	.000	.000	.000	
	N	76	76	76	76	76

**. Correlation is significant at the 0.01 level (2-tailed). *. Correlation is significant at the 0.05 level (2-tailed). Z =Market condition (moderator)

4.7.1 Influence of Production Cost on Reshoring Decision

The Likert data for production cost was summarized and converted into "accept" and "reject". All items with score of above 3 were considered as "accept" while those below three "reject". This was done in order to convert the qualitative responses into quantitative data as proposed by Boone and Boone (2012) and to fit the data into the binary logistic regression model.

Based on logistic regression between production cost and reshoring decision, the output was split into two sections, block 0 and block 1. Block 0 assesses the usefulness of having a null model, which is a model with no explanatory variables. The variables in the equation table only include a constant so every respondent has the same chance of saying Yes or No for the factors that determine reshoring decision among Kenya's manufacturing multinational corporations. From classification table, it was clear that 56.6% of the respondents agreed that all the indicators under reshoring decision affect production cost. Table 4.19 shows the details.

Table 4.19: Classification Table 1 For Production Cost

Observed			Predicted		
			Entrepreneurial Orientation		Percentage Correct
			No	Yes	
Step 0	Reshoring Decision	N0	0	33	.0
		YES	0	43	100.0
	Overall Percentage				56.6

a. Constant is included in the model.

b. The cut value is .500

Under variables in the equation Table 4.20 the intercept-only model is ln(odds) =.2650. If we exponentiate both sides of this expression, we find that our predicted odds [Exp(B)] =1.303. That is, the predicted odds of those who agreed that indicators of production cost affect reshoring decision among Kenya's manufacturing multinational corporations were 1.303. Since 43 of the respondents said Yes while 60 said No, the observed odds was 43/33 = 1.303.

Table 4.20: Variables in the Equation for Production Cost

		B	**S.E.**	**Wald**	**df**	**Sig.**	**Exp(B)**
Step 0	Constant	.265	.231	1.308	1	.253	1.303

The omnibus tests of model coefficients for production cost table gives the result of the Likelihood Ratio (LR) test which indicates whether the inclusion of this block of variables contributes significantly to model fit. A p-value (sig) of less than 0.05 for block means that the block 1 model is a significant improvement to the block 0 model. In the presence of moderator, the omnibus test still indicates that there was significance improvement of block 0 as indicated on Table 4.21.

Results concur with studies conducted in Germany by Fisch and Zschoche (2012) and in New Zealand by Canham and Hamilton (2013) which showed that rising production cost especially wages significantly influence reshoring decision. Similarly, Tate *et al*. (2014) found that increasing energy costs were driving American firms to reshore production. It can be inferred that production cost significantly influences reshoring decision among Kenya's manufacturing multinational corporations.

Table 4.21: Model Coefficients for Production Cost

		Chi-square	df	Sig.
Step 1	Step	12.152	1	.000
	Block	12.152	1	.000
	Model (without moderator)	12.152	1	.000
Step 1	Step	17.212	1	.000
	Block	17.212	1	.000
	Model (with moderator)	17.212	1	.000

In standard regression, the co-efficient of determination (R^2) value gives an indication of how much variation in dependent is explained by the model but this cannot be calculated for logistic regression.

The model summary in Table 4.22 gives the values for two pseudo R^2 values for two models (model without moderator and model with moderator) which try to measure something similar. From Table 4.20, we can conclude that between 14.8% and 19.8% of the variation in reshoring decision can be explained by the model in block 1 without moderator and 20.3% and 27.2% of the variation in reshoring decision among Kenya's

manufacturing multinational corporations can be explained by the model in block 1 in the absence of moderator. The correct classification rate has increased by 14.5% to 71.1% in the absence of moderator and 10.5% to 67.1% in the presence of moderator as shown in model summary Table 4.23 for production cost.

Findings agree with Kinkel (2012) who observed that increase in production cost was a significant factor in reshoring for German firms. Fratocchi *et al.* (2016) noted the significance of production cost in reshoring decision for Italian manufacturers.

Table 4.22: Model Summary for Production Cost

Step	-2 Log likelihood	Cox & Snell R^2	Nagelkerke R^2
Model 1	91.886[a]	.148	.198
Model 2	86.827[a]	.203	.272

a. Estimation terminated at iteration number 4 because parameter estimates changed by less than .001. Model 1 (without moderator), Model 2 (with moderator)

Table 4.23: Classification Table 2 for Production Cost

Model	Observed		Predicted Reshoring Decision		Percentage Correct
			No	Yes	
Model 1 Step 1	Reshoring Decision	No	17	16	51.5
		Yes	6	37	86.0
	Overall Percentage				**71.1**
Model 2 Step 1	Reshoring Decision	1.00	17	16	51.5
		2.00	9	34	79.1
	Overall Percentage				**67.1**

a. The cut value is .500. Model 1 (without moderator), Model 2 (with moderator)

There was positive and significant relationship between production cost and reshoring decision as shown in Table 4.24. The model was given as $Y= -4.355+1.327X_1$ in the absence of moderator (market condition). The regression coefficient of 1.327 indicates

that an increase in production cost by one unit leads to an increase in reshoring decision by 1.327 units. On the other hand, in the presence of moderator (market condition), the model was expressed Y= -4.947+1.484X_{1*}Z showing that an increase in production cost by one unit leads to an increase in reshoring decision by 1.484 units. The p-values were 0.002 and 0.000 were recorded for both models.

Findings further suggest the significant influence of production cost on Kenyan manufacturing MNCs reshoring decision and concur with WBG (2018) who suggest that rise in Kenyan manufacturing sector labour cost was growing at a higher percentage rate than growth in value of manufacturing output. It can be inferred that continued percentage rise in labour cost above that of value of output is likely to drive Kenya into a high manufacturing location.

Table 4.24: Variables in the Equation for Production Cost

		B	S.E.	Wald	df	Sig.	Exp(B)
Step1[a]	Production Cost	1.327	.427	9.665	1	.002	3.768
Model 1	Constant	-4.355	1.499	8.437	1	.004	.013
Step1[a] **Model 2**	Production Cost*Z	1.484	.411	13.012	1	.000	4.412
	Constant	-4.947	1.476	11.232	1	.001	.007

a. Variable(s) entered on step 1: Production Cost Model 1 (without moderator), Model 2 (with moderator)

4.7.2 Influence of Product Quality on Reshoring Decision

The Likert data for product quality was summarized and converted into "accept" and "reject". All items with score of above 3 were considered as "accept" while those below three "reject". This was done in order to convert the qualitative responses into quantitative data as proposed by Boone and Boone (2012) and to fit the data into the binary logistic regression model.

The binary logistic regression between product quality and reshoring decision was conducted and the output was again split into two sections, block 0 and block 1. Block 0 assesses the usefulness of having a null model, which is a model with no independent variables. The variables in the equation table only include a constant so every respondent had the same chance of saying Yes or No for the factors that determine reshoring decision among Kenya's manufacturing multinational corporations. From classification Table 4.25 for product quality**,** it was clear that 56.6% of the respondent agreed that all the indicators under reshoring decision affect product quality.

Table 4.25: Classification Table 1 for Product Quality

	Observed		Predicted Reshoring Decision		Percentage Correct
			No	Yes	
Step 0	Reshoring Decision	N0	0	33	.0
		YES	0	43	100.0
	Overall Percentage				56.6

a. Constant is included in the model.

b. The cut value is .500

Under Variables in the equation for product quality Table 4.26 it was clear that the intercept-only model is ln(odds) =.265. If we exponentiate both sides of this expression, we find that our predicted odds [Exp(B)] =1.683. That is, the predicted odds of those who agreed that indicators of product quality affect reshoring decision among Kenya's manufacturing multinational corporations were 1.303. Since 43 of the respondents said Yes while 33 said No, the observed odds was 43/33 = 1.303.

Table 4.26: Variables in the Equation for Product Quality

		B	S.E.	Wald	df	Sig.	Exp(B)
Step 0	Constant	.265	.231	1.308	1	.253	1.303

The omnibus tests of model coefficients for product quality in block 1 gives the result of the likelihood ratio (LR) test which indicates whether the inclusion of this block of variables (product quality) contributes significantly to model fit. An increase in the chi square statistics value from 15.314 to 24.892 and a p-value (sig) less than 0.05 for the block was recorded implying that the block 1 model was a significant improvement to the block 0 model. Based on the finding that, the p-values were all less than 0.05, we can conclude that product quality significantly influences reshoring decision among Kenya's manufacturing multinational corporations. In the presence of moderator, the model improved as characterized by increase in the value of chi square test statistic. Table 4.27 gives the details of the findings.

Results suggest that product quality is a key strategic issue for Kenyan manufacturing MNCs. Bailey and De Propris (2014) noted the importance of quality in reshoring decision for UK manufacturers. Similarly, Kinkel (2012) found that product quality emerged as the most important motivator for reshoring for German manufacturing firms.

Table 4.27: Model Coefficients for Product Quality

		Chi-square	df	Sig.
Step 1	Step	15.314	1	.000
	Block	15.314	1	.000
	Model (without moderator)	15.314	1	.000
Step 1	Step	24.892	1	.000
	Block	24.892	1	.000
	Model (with moderator)	24.892	1	.000

The model summary for product quality Table 4.28 gives the values for two pseudo R^2 (Cox & Snell R^2 and Nagelkerke R^2) values which try to measure something similar to linear regression.

From Table 4.28, we can conclude that between 18.2% and 24.5% of the variation in reshoring decision among Kenya's manufacturing multinational corporations can be explained by the model in block 1 in the absence of moderator. Similarly, in the present of moderator, between 27.9% and 37.5% of the variation in reshoring decision can be explained by the model in block 2. There was an increase from 56.6% to 63.2% in the rate in the absence of moderator and an increase from 56.6% to 72.4% in the rate in the present of moderator (Table 4.29). The result confirms further improvement of the model in the present of moderator

Table 4.28: Model Summary for Product Quality

Step	-2 Log likelihood	Cox & Snell R Square	Nagelkerke R Square
Model 1	88.725[a]	.182	.245
Model 2	79.147[a]	.279	.375

b. Estimation terminated at iteration number 5 because parameter estimates changed by less than .001. Model 1 (without moderator), Model 2 (with moderator)

Table 4.29: Classification Table for Product Quality

Model	Observed		Predicted Reshoring Decision		Percentage Correct
			No	Yes	
Model 1 Step 1	Reshoring Decision	No	18	15	54.5
		Yes	13	30	69.8
	Overall Percentage				**63.2**
Model 2 Step 1	Reshoring Decision	1.00	20	13	60.6
		2.00	8	35	81.4
	Overall Percentage				**72.4**

a. The cut value is .500. Model 1 (without moderator), Model 2 (with moderator)

The finding based on variables in the equation table for product quality shows that, there was positive and significant relationship between product quality and reshoring decision. The model was given as $Y= -11.241+2.527X_2$ in the absence of moderator (market

condition). The regression coefficient of 2.527 indicates that an increase in product quality by one unit leads to an increase in reshoring decision by 2.527units. On the other hand, in the presence of moderator (market condition), the model was expressed Y= -9.415+2.422X*Z showing that an increase in product quality by one unit leads to an increase in reshoring decision by 2.422 units. Table 4.30 shows the details of the finding. The p-values were 0.002 and 0.000 were recorded for both models.

A country's reputation for its product quality is critical for enhancing buyer purchase decisions (De Backer et al., 2016). The study by Sirkin *et al.* (2013) found that product quality to be a major influence on brand image for US manufacturing companies. It can be inferred that Kenyan manufacturing MNCs see product quality as a significant contributor their competitiveness due to its influence on consumers; willingness to purchase a product and hence MNCs competitiveness. MNCs facing challenges of maintaining product quality may seek to relocate production to where improvement in product quality can be achieved.

Table 4.30: Variables in the Equation for Product Quality

		B	S.E.	Wald	df	Sig.	Exp(B)
Step1[a]	product quality	2.527	.769	10.805	1	.001	12.513
Model 1	Constant	-11.241	3.502	10.301	1	.001	.000
Step1[a]	product quality	2.422	.622	15.145	1	.000	11.269
Model 2	Constant	-9.415	2.518	13.982	1	.000	.000

b. Variable(s) entered on step 1: product quality Model 1 (without moderator), Model 2 (with moderator)

4.7.3 Influence of Operational Flexibility on Reshoring Decision

The Likert data for operational flexibility was summarized and converted into "accept" and "reject". All items with score of above 3 were considered as "accept" while those

below three "reject". This was done in order to convert the qualitative responses into quantitative data as proposed by Boone and Boone (2012) and to fit the data into the binary logistic regression model.

The binary logistic regression between operational flexibility and reshoring decision was done just as in the case of first and second objective. The findings for Block 0 were similar to the one for production cost and product quality. However, the omnibus tests of model coefficients for operational flexibility table gives the result of the Likelihood Ratio (LR) test which indicates that the inclusion of the variable in the block contributes significantly to model fit. A p-value (sig) less than 0.05 for block 1 means that block 1 model was a significant improvement to block 0 models. The p-values were all less than 0.05, therefore the conclusion was that inclusion of operational flexibility significantly influences reshoring decision among Kenya's manufacturing multinational corporations. Table 4.31 shows the result of the finding.

Results are similar to Fisch and Zschoche (2012) who suggest that operational flexibility influences reshoring for German manufacturing firms. Wilkinson *et al.* (2015) also found that increasing requests for customization from customers led to reshoring for UK manufacturers.

Table 4.31: Model Coefficients for Operational Flexibility

		Chi-square	**df**	**Sig.**
Step 1	Step	10.012	1	.002
	Block	10.012	1	.002
	Model (Without moderator)	10.012	1	.002
Step 1	Step	17.302	1	.000
	Block	17.302	1	.000
	Model (With moderator)	17.302	1	.000

Two pseudo R^2(Cox & Snell R^2 and Nagelkerke R^2) values given in the model summary for operational flexibility as shown in Table 4.32 measure the strength of the

relationship between the dependent variable and independent variable as in the case of linear regression. The Cox & Snell R^2 value of 0.123 and Nagelkerke R^2 of 0.166 indicates that between 12.3% and 16.6% of the variation in reshoring decision among Kenya's manufacturing multinational corporations was explained by the model in block 1 where operational flexibility was included in the model and no moderator was present. On the other hand, in the present of moderator, Cox & Snell R^2 value increased to 0.204 while Nagelkerke R^2 value increased to 0.273. The results show that between 20.4% and 27.3% of the variation in reshoring decision was explained by inclusion of operational flexibility with moderator (market condition).

The correct operational flexibility rate had increased by10.5% to 67.1% for the model 1 while model 2, the correct operational flexibility rate had increased by 17.1% to 73.7%. The percentage increases were with reference to block 0 classification table which recorded an overall percentage of 56.6% that is, for model 1 percentage increase was obtained by subtracting 56.6% from 67.1% and for model 2, the percentage increase was obtained by subtracting 56.6% from 73.7%. Based on this percentage increases, it was concluded that there was significant improvement of the model when operational flexibility was included. However, the improvement was more significant in the present of moderator. The rest of the finding is shown in Table 4.32.

Table 4.33 indicates that there was an increase from 56.6% to 67.13% in the rate in the absence of moderator and an increase from 56.6% to 73.7% in the rate in the present of moderator. The result confirms further improvement of the model in the present of moderator

Table 4.32: Model Summary for Operational Flexibility

Step	-2 Log likelihood	Cox & Snell R Square	Nagelkerke R Square
Model 1	94.026[a]	.123	.166
Model 2	86.737[a]	.204	.273

c. Estimation terminated at iteration number 4 because parameter estimates changed by less than .001. Model 1 (without moderator), Model 2 (with moderator)

Table 4.33: Classification Table 1 for Operational Flexibility

Model	Observed		Predicted Reshoring Decision		Percentage Correct
			No	Yes	
Model 1 Step 1	Reshoring Decision	No	20	13	60.6
		Yes	12	31	72.1
	Overall Percentage				**67.1**
Model 2 Step 1	Reshoring Decision	No	20	13	60.6
		Yes	7	36	83.7
	Overall Percentage				**73.7**

a. The cut value is .500. Model 1 (Without Moderator), Model 2 (with Moderator)

There was positive and significant relationship between operational flexibility and reshoring decision among Kenya's manufacturing multinational corporations as per results shown in Table 4.34. The model was given as $Y=-4.524+1.356X_3$. The regression coefficient of 1.356 indicates that an increase in operational flexibility by one unit leads to an increase in reshoring decision by 1.356 units in the absence of moderator. However, in the present of moderator, the model was expressed as $Y=-5.372+1.600X_3*Z$. The regression coefficient of 1.600 indicates that an increase in operational flexibility by one unit leads to an increase in reshoring decision by 1.600 units

De Backer *et al.* (2016) observed that demand for customization was driving the need for manufacturing agility while Bossche *et al.* (2015) study noted the need for improving customer responsiveness accounting for 23% of reshoring for American manufacturing entities. Manufacturing agility enables manufacturing firms handle unique customer orders and short production runs. Higher production process sophistication improves operational flexibility as noted by WBG (2018). Operational flexibility is critical for sustaining competitive advantage for manufacturing entities as observed by Canham and Hamilton (2013). It can be concluded that manufacturing entities seeking to improve customer responsiveness and short production runs would require to increase their production process sophistication. Need for operational flexibility may influence firms to seek locations that can provide that can meet demand for operational flexibility.

Table 4.34: Variables in the Equation for Operational Flexibility

		B	S.E.	Wald	df	Sig.	Exp(B)
Step1[a]	Operational flexibility	1.356	.465	8.514	1	.004	3.879
Model 1	Constant	-4.524	1.641	7.602	1	.006	.011
Step1[a]	Operational flexibility	1.600	.439	13.255	1	.000	4.952
Model 2	Constant	-5.372	1.569	11.718	1	.001	.005

c. Variable(s) entered on step 1: Operational flexibility Model 1 (without moderator), Model 2 (with moderator)

4.7.4 Influence of Reduced Time to Market on Reshoring Decision

The Likert data for reduced time to market was summarized and converted into "accept" and "reject". All items with score of above 3 were considered as "accept" while those below three "reject". This was done in order to convert the qualitative responses into quantitative data as proposed by Boone and Boone (2012) and to fit the data into the binary logistic regression model.

The binary logistic regression between reduced time to market and reshoring decision was conducted. Similarly, the outputs for Block 0 were same to the one for production cost and product equality and operational flexibility. However, the omnibus tests of model coefficients (Table 4.35) show the result of the likelihood ratio (LR) test which indicates whether the inclusion of reduced time to market of variable to block 0 contributes significantly to the model fit. If the p-value (sig) recorded is lower than 0.05 for block, it implies that block 1 model is a significant improvement to the block 0 model. In this study p-values recorded were all less than 0.05 with chi-square values of 27.105 and 23.317 respectively.

The findings concur with Gylling *et al.* (2015) who observed that pressure for shorter delivery times were driving reshoring decisions. Results are also consistent with Martinez-Mora and Merino (2014) in their study of the Spanish footwear industry. They noted that changing customer preferences such pressure for shorter lead times were driving reshoring among Spanish footwear manufacturers.

Bossche *et al*. (2015) opined that consumer responsiveness improvements including delivery times was responsible for 10% of reshoring decisions for American MNCs. Results from Wilkinson *et al.* (2015) and De Backer *et al*. (2016) also affirm the importance of reduced time to market in reshoring decisions. Based on these findings it was concluded that reduced time to market significantly affect reshoring decision among Kenya's manufacturing multinational corporations.

Table 4.35: Model Coefficients for Reduced Time to Market

		Chi-square	df	Sig.
	Step	27.105	1	.000
Step 1	Block	27.105	1	.000
	Model (without moderator)	27.105	1	.000
	Step	23.317	1	.000
Step 1	Block	23.317	1	.000
	Model (with moderator)	23.317	1	.000

Considering two pseudo R^2(Cox & Snell R^2 and Nagelkerke R^2) values given in the model summary for reduced time to market Table 4.36, Cox & Snell R^2 value of 0.300 and Nagelkerke R^2 of 0.402 were recorded indicating that between 30.0% and 40.2% of the variation in reshoring decision among Kenya's manufacturing multinational corporations was explained by the model in block1 where reduced time to market was included in the model with no moderator.

The model was further tested for the moderating influence of market condition of reduced time to market. Cox & Snell R^2 value decreased to 0.264 while Nagelkerke R^2 value decreased to 0.354 in the present of moderator. The results show that between 26.4% and 35.4% of the variation in reshoring decision was explained by inclusion of reduced time to market with moderator (market condition). It can be concluded that inclusion of moderator market condition, decreased the influence of independent variable reduced time to market on reshoring decision.

Table 4.36: Model Summary for Reduced Time to Market

Step	-2 Log likelihood	Cox & Snell R Square	Nagelkerke R Square
Model 1	76.934[a]	.300	.402
Model 2	80.722[a]	.264	.354

a. Estimation terminated at iteration number 5 because parameter estimates changed by less than .001.

The correct reduced time to market rate had increased by 15.8% to 72.4% for the model 1 while model 2, the correct reduced time to market rate had increased by11.8% to 68.4%. The percentage increases were with reference to block 0 classification table which recorded an overall percentage of 56.6% that is, for model 1 percentage increase was obtained by subtracting 56.6% from 72.4% and for model 2, the percentage increase was obtained by subtracting 56.6% from 68.4%. Based on this percentage increases, it was concluded that there was significant improvement of the model when reduced time to market was included however the improvement was less significant in the present of moderator in comparison to the situation where the moderator is absent. Table 4.37 gives the details of the findings.

Table 4.37: Classification Table for Reduced Time to Market

Model	Observed		Predicted		
			Reshoring Decision		Percentage
			No	Yes	Correct
Model 1 Step 1	Reshoring Decision	No	20	13	60.6
		Yes	8	35	81.4
	Overall Percentage				**72.4**
Model 2 Step 1	Reshoring Decision	No	17	16	51.5
		Yes	8	35	81.4
	Overall Percentage				**68.4**

a. The cut value is .500. Model 1 (without moderator), Model 2 (with moderator)

There was positive and significant relationship between reduced time to market and reshoring decision among Kenya's manufacturing multinational corporations in both models (model without moderator and with moderator) as shown in Table 4.38. In the absence of moderator, the model was expressed as $Y=-4.524+1.762X_4$ while in the present of moderator, the model was expressed as $Y=-5.372+1.616X_4*Z$. The regression coefficient of 1.762 and 1.616 indicates that an increase in reduced time to market by one unit leads to an increase in reshoring decision by 1.762 and 1.616 units for model 1 and model 2 respectively.

Results indicate the significance of reduced time to market on reshoring and concur with De Backer *et al.* (2016) who reaffirmed the importance of reduced time to market on reshoring. Shorter delivery times are critical to the competitiveness of Kenyan manufacturing entities.

Table 4.38: Variables in the Equation for Reduced Time to Market

		B	S.E.	Wald	df	Sig.	Exp(B)
Step1[a]	Reduced time to market	1.762	.429	16.900	1	.000	5.825
Model 1	Constant	-6.163	1.594	14.947	1	.000	.002
Step1[a]	Reduced time to market	1.616	.413	15.337	1	.000	5.033
Model 2	Constant	-5.569	1.534	13.183	1	.000	.004

d. Variable(s) entered on step 1: Reduced time to market Model 1 (without moderator), Model 2 (with moderator)

4.7.5 Influence of Hidden Cost on Reshoring Decision

The Likert data for hidden cost was summarized and converted into "accept" and "reject". All items with score of above 3 were considered as "accept" while those below three "reject". This was done in order to convert the qualitative responses into quantitative data as proposed by Boone and Boone (2012) and to fit the data into the binary logistic regression model.

The binary logistic regression between hidden cost and reshoring decision was performed. Similarly, the outputs for Block 0 were same to the one for production cost and product equality, operational flexibility and reduced time for market. To establish the effect of inclusion of hidden cost, the results shown in the omnibus tests of model coefficients Table 4.39 indicate that the inclusion of hidden cost to block 0 contributes significantly to the model fit. This was supported by p-value 0.00 in absence of moderator and in the present moderator which was lower than 0.05. The chi-square values of 17.738 and 19.099 respectively were also recorded.

Results are consistent with Moser and Beyer (2011) who found that several US manufacturing entities including Walmart and General Electric reshored their production from offshore locations due to hidden cost considerations. The findings also concur with Kinkel and Maloca (2009) in their study of German manufacturing entities where reshoring was found to be a correction of prior decision to offshore arising from miscalculation of true costs of offshore operations.

The results reflect the concerns of Kenyan manufacturing MNCs as per findings of KAM (2012) who noted high presence of counterfeit products in the Kenyan market that has resulted in considerable financial losses by several copyright holders. Intellectual property theft has been identified as a major global problem (Hoecht & Trott, 2014). Intellectual property theft undermines legitimate manufacturers particularly in locations where intellectual property rights are not enforced as noted by Backer *et al.* (2016). Based, on these outcomes it can be inferred that hidden cost significantly influences reshoring decision among Kenya's manufacturing multinational corporations.

Table 4.39: Model Coefficients for Hidden Cost

		Chi-square	df	Sig.
	Step	17.738	1	.000
Step 1	Block	17.738	1	.000
	Model (without moderator)	17.738	1	.000
	Step	19.099	1	.000
Step 1	Block	19.099	1	.000
	Model (with moderator)	19.099	1	.000

Cox & Snell R^2 value of 0.208 and Nagelkerke R^2 of 0.279 were recorded indicating that between 20.8% and 27.9% of the variation in reshoring decision among Kenya's manufacturing multinational corporations was explained by the model in block1 where hidden cost was included in the model with no moderator. In addition to that Cox & Snell R^2 value increased to 0.222 while Nagelkerke R^2 value increased to 0.298 in the present of moderator. The results in Table 4.40 show that between 22.2% and 29.8% of the variation in reshoring decision was explained by inclusion of hidden cost with moderator (market condition).

Table 4.40: Model Summary for Hidden Cost

Step	-2 Log likelihood	Cox & Snell R Square	Nagelkerke R Square
Model 1	86.300[a]	.208	.279
Model 2	84.940[a]	.222	.298

a. Estimation terminated at iteration number 5 because parameter estimates changed by less than .001.

Table 4.41 shows that the correct hidden cost rate had increased by 15.8% to 72.4% for the model 1 while model 2, the correct hidden cost rate had increased by17.1% to 73.7%. The percentage increases were with reference to block 0 classification table

which recorded an overall percentage of 56.6% that is, for model 1 percentage increase was obtained by subtracting 56.6% from 72.4% and for model 2, the percentage increase was obtained by subtracting 56.6% from 73.7%. Lastly based on this percentage increases, it was concluded that there was significant improvement of the model when hidden cost was included. However, the improvement was more significant in the present of moderator in comparison to the situation where the moderator is absent.

Table 4.41: Classification Table for Hidden Cost

Model	Observed		Predicted		
			Reshoring Decision		Percentage
			No	Yes	Correct
Model 1 Step 1	Reshoring Decision	No	19	14	57.6
		Yes	7	36	83.7
	Overall Percentage				**72.4**
Model 2 Step 1	Reshoring Decision	No	19	14	57.6
		Yes	6	37	86.0
	Overall Percentage				**73.7**

a. The cut value is .500. Model 1 (without moderator), Model 2 (with moderator)

The two models shown in variables in the equation Table 4.42 suggest that there was positive and significant relationship between hidden cost and reshoring decision among Kenya's manufacturing multinational corporations in both models (model without moderator and with moderator). In the absence of moderator, the model was expressed as $Y=-3.962+1.285X_5$ while in the present of moderator, the model was expressed as $Y=-4.694+1.452X_5*Z$. The regression coefficient of 1.285 and 1.452 indicates that an increase in hidden cost by one unit leads to an increase in reshoring decision by 1.285 and 1.452 units for model 1 and model 2 respectively.

Ferreira and Prokopets (2009) study noted the contribution of erosion of offshore low-cost advantage due to costs that had not been fully considered at time of making decision

to offshore. The study by Gylling *et al*. (2015) observed the importance of better understanding of total cost of ownership in cost comparisons between home country and offshore locations in foreign operations. Further the inability to ascertain total cost of offshoring is explained by the degree of offshoring complexity as suggested by Larsen *et al*. (2011). The findings suggest that Kenya manufacturing entities considered total cost of operations concept as critical in making offshoring and reshoring decisions. Further those that do not consider total costs of operations when making offshoring decision are likely to reverse the same in future.

Results also mirror those of Tate (2014) who noted increased keenness of MNCs on total cost of operations considerations. Overall hidden cost emerged as a major consideration in production location for Kenya manufacturing MNCs. It can be concluded that Kenyan manufacturing MNCs consider hidden cost as a major factor in reshoring decision.

Table 4.42: Variables in the Equation for Hidden Cost

		B	**S.E.**	**Wald**	**df**	**Sig.**	**Exp(B)**
Step1[a]	Hidden Cost	1.285	.360	12.696	1	.000	3.613
Model 1	Constant	-3.962	1.215	10.633	1	.001	.019
Step1[a]	Hidden Cost	1.452	.403	12.980	1	.000	4.273
Model 2	Constant	-4.694	1.411	11.071	1	.001	.009

e. Variable(s) entered on step 1: Hidden cost Model 1 (without moderator), Model 2 (with moderator)

4.8 Overall Multiple Logistic Regression Analysis

This section presents the results on the combined effects of all the independent variables mainly production cost, product quality, operational flexibility: and reduced time to market on the dependent variable reshoring decision.

4.8.1 Overall Multiple Regression Model

A multiple logistic regression model was used to test the significance of the influence of the independent variables on the dependent variable. The overall model for the study was;

$P\ [Yn(=1|X)]$ = exp $(X'n\ \beta)$ / [1 +exp $(\beta_0 + \beta_1X_1 + \beta_2X_2 + \beta_3X_3 + \beta_4X_4 + \beta_5X_5)$

$= F(\beta_0 + \beta_1X_1 + \beta_2X_2 + \beta_3X_3 + \beta_4X_4 + \beta_5X_5)$

$P\ [Yn(=0|X)]$ = 1/[1+ exp $(\beta_0 + \beta_1X_1 + \beta_2X_2 + \beta_3X_3 + \beta_4X_4 + \beta_5X_5)$

$= 1 - F(\beta_0 + \beta_1X_1 + \beta_2X_2 + \beta_3X_3 + \beta_4X_4 + \beta_5X_5)$

Log likelihood

$$Log\ L\ (\beta) = \sum_{y=0} \log[1 - F\ (\ X'n\ \beta)] + [1 + \sum_{y=1} log\ (X'n\ \beta)$$

$Log\ L\ (\beta) = \sum_{y=0} \log[1 - F\ \ (\beta_0\ + \beta_1X_1\ + \beta_2X_2\ + \beta_3X_3\ + \beta_4X_4\ + \beta_5X_5)\ +\ [1 + \sum_{y=1} log\ (\beta_0 + \beta_1X_1 + \beta_2X_2 + \beta_3X_3 + \beta_4X_4 + \beta_5X_5)$

The omnibus tests of model coefficients as shown in Table 4.43 shows that the results of the overall model was satisfactory and the inclusion of this block of variables contributes significantly to model fit as it is supported by the fact that p-values (sig) are less than 0.05 indicating a significant improvement to the block 0 models. Since the p-values were all less than 0.05, we can conclude that production cost, product quality, operational flexibility, reduced time to market and hidden cost significantly affect reshoring decision among Kenya's manufacturing multinational corporations.

Table 4.43: Model Coefficients for All Explanatory Variables

		Chi-square	df	Sig.
	Step	173.340	4	.000
Step 1	Block	173.340	4	.000
	Model	173.340	4	.000

Results from the model summary as shown in Table 4.44 indicate that Cox & Snell R^2 value was 0.448 and Nagelkerke R^2 value was 0.601 without moderator. From these findings we can conclude that between 44.8% and 60.1% of the variation in reshoring decision among Kenya's manufacturing multinational corporations can be explained by production cost, product quality, operational flexibility, reduced time to market and hidden cost in the absence of the moderator (model 1).

Findings concur with Weismann *et al.* (2017) study that found production cost, product quality, operational flexibility, reduced time to market and hidden cost as strategic drivers that were influencing manufacturing firms to reshore. Gray *et al.* (2013) noted the importance of these drivers in reshoring decision. Results reflect findings by Kinkel (2012), Ellram *et al.* (2013) and De Backer *et al.* (2016) that rising costs in low-cost locations driven by production cost increases, quality challenges and supply chain constraints influenced production reshoring. From the findings, it can be inferred that production cost, product quality, operational flexibility, reduced time to market and hidden cost influence production reshoring decision among manufacturing MNCs in Kenya.

Table 4.44: Model Summary for All Explanatory Variables Without Moderator

Step	-2 Log likelihood	Cox & Snell R^2	Nagelkerke R^2
Model 1	58.840[a]	.448	.601

a. Estimation terminated at iteration number 5 because parameter estimates changed by less than .001.

In the presence of the moderator (market condition), the multiple logistic regression model was

$$P\ [Yn(=1|X)] = \exp(\ X'n\ \beta)/\ [1 + exp(X'n\ \beta) = F(X'n\ \beta)$$

$$P\ [Yn(=0|X)] = 1/[1 + \exp(\ X'n\ \beta) = 1 - F(X'n\ \beta)$$

$P\ [Yn(=1|X)]$ = exp $(X'n\ \beta)$ / [1 +exp $(\beta_0 + \beta_1X_1 + \beta_2X_2 + \beta_3X_3 + \beta_4X_4 + \beta_5X_5 + \beta_6X_6)$

$$= F(\beta_0 + \beta_1X_1 + \beta_2X_2 + \beta_3X_3 + \beta_4X_4 + \beta_5X_5 + \beta_6X_6)$$

$P\ [Yn(=0|X)]$ = 1/[1+ exp $(\beta_0 + \beta_1X_1 + \beta_2X_2 + \beta_3X_3 + \beta_4X_4 + \beta_5X_5 + \beta_6X_6)$

$$= 1 - F(\beta_0 + \beta_1X_1 + \beta_2X_2 + \beta_3X_3 + \beta_4X_4 + \beta_5X_5 + \beta_6X_6)$$

Log likelihood

$$Log\ L\ (\beta) = \sum_{y=0} \log[1 - F\ (\ X'n\ \beta)] + [1 + \sum_{y=1} log\ (X'n\ \beta)$$

$Log\ L\ (\beta) = \sum_{y=0} \log[1 - F\ \ (\beta_0\ + \beta_1X_1\ + \beta_2X_2\ + \beta_3X_3\ + \beta_4X_4\ + \beta_5X_5\ +\ \beta_6X_6)\ +$ $[1 + \sum_{y=1} log\ (\beta_0 + \beta_1X_1 + \beta_2X_2 + \beta_3X_3 + \beta_4X_4 + \beta_5X_5 + \beta_6X_6)$

In the presence of moderator Cox & Snell R^2 value was 0.522 and Nagelkerke R^2 value was 0.625. Based on the findings we can conclude that between 52.2% and 62.5% of changes in reshoring decision can be explained by the independent variables of study. The presence of the moderator (market condition) improved the relationship between independent variables and dependent variable. Table 4.45 shows the results of the findings.

Results indicate the importance of market condition and its moderating influence on the relationship between the independent variables and dependent variable of the study.

Findings concur with Wu and Zhang (2014); Gylling *et al*. (2015) and Vanchan *et al*. (2018). Wu and Zhang (2014) noted the importance of market condition (market size movements) in moderating production location decisions for MNCs. Gylling *et al*. (2015) opined that sales volume growth influenced reshoring. Further Vanchan *et al*. (2018) observed that loss of demand influenced reshoring for manufacturing MNCs. It can be inferred that market condition had a moderating influence on the relationship between the independent variables and the dependent variable in the case of Kenyan manufacturing MNCs.

Table 4.45: Model Summary for All Explanatory Variables

Step	-2 Log likelihood	Cox & Snell R^2	Nagelkerke R^2
Model 2	54.940[a]	.522	.625

a. Estimation terminated at iteration number 5 because parameter estimates changed by less than .001.

The correct production cost, product quality, operational flexibility, reduced time to market and hidden cost rate had increased by 26.3% to 82.9% for the model 1; in the case of model 2, the correct product quality, operational flexibility, reduced time to market and hidden cost rate had increased by 22.3% to 78.9%. Based on the percentage increases, it was concluded that there was significant improvement of the model when product cost, product quality, operational flexibility, reduced time to market and hidden cost were included. The model also improved in the absence of moderator. Table 4.46 shows the details of the findings.

Table 4.46: Classification Table 2 for All Explanatory Variables

Model	Observed		Predicted		
			Reshoring Decision		Percentage
			No	Yes	Correct
Model 1	Reshoring Decision	No	26	7	78.8
		Yes	6	37	86.0
Step 1	Overall Percentage				**82.9**
Model 2	Reshoring Decision	No	27	6	81.8
		Yes	10	33	76.7
Step 1	Overall Percentage				**78.9**

a. The cut value is .500. Model 1 (without moderator), Model 2 (with moderator)

The findings based on variables in the equation for all explanatory variables Table 4.47, suggest that there was positive and significant relationship between production cost, product quality, operational flexibility, reduced time to market and hidden cost and reshoring decision. The model is expressed as $Y=-23.040+0.958X_1+3.071X_2+1.90X_3+1.217X_4+1.461X_5$. The regression coefficient of 0.958, 3.071, 1.900, 1.21 and 1.461 indicates that an increase in production cost, product quality, operational flexibility, reduced time to market and hidden cost by one unit leads to an increase in reshoring decision by of 0.958, 3.071, 1.900, 1.21 and 1.461 units respectively in the absence of moderator.

Table 4.47: Variables in the Equation for Explanatory Variables Without Moderator

		B	S.E.	Wald	df	Sig.	Exp(B)
Step 1[a]	Production Cost	.958	.698	1.886	1	.017	2.608
	Product quality	3.071	.995	9.516	1	.002	21.560
	Operational flexibility	1.900	.804	2.363	1	.026	.406
	Reduced time to market	1.217	.563	4.672	1	.031	3.379
	Hidden Cost	1.461	.604	5.844	1	.016	4.311
	Constant	-23.040	5.893	15.287	1	.000	.000

a. Variable(s) entered on step 1: Production cost, Product quality, Operational flexibility, and Reduced time to market and Hidden cost

On the other hand in the presence of moderator the model was expressed as Y=-96.12+5.162X_1+5.49X_2+2.987X_3+ 14.591X_4+6.12X_5 with regression coefficient of 5.162, 5.490, 2.987, 14.591 and 6.12 indicating that an increase in production cost, product quality, operational flexibility, reduced time to market and hidden cost by one unit leads to an increase in reshoring decision by of 5.162, 5.490, 2.987, 14.591 and 6.12 as shown in Table 4. 48.

Table 4.48 Variables in the Equation for All Explanatory Variables With Moderator

		B	S.E.	Wald	df	Sig.	Exp(B)
Step 1[a]	Production Cost*Z	5.16	1.779	9.415	1	.000	172.29
	Product quality*Z	5.49	1.625	11.412	1	.001	142.26
	Operational flexibility*Z	2.98	1.019	8.608	1	.003	19.86
	Reduced time to market*Z	14.59	3.715	15.429	1	.004	114.90
	Hidden Cost	6.12	2.765	11.968	1	.000	121.02
	Constant*Z	-96.12	25.765	16.968	1	.000	.000

a. Variable(s) entered on step 1: Production cost, product quality, operational flexibility, and reduced time to market and hidden cost (Z= Market condition moderator)

4.8.2 Hypotheses Testing in Absence Of Moderator

The hypotheses relating to independent variables were tested. Table 4.49 shows the results of the hypotheses test in the absence of the moderator. Since the Wald test statistics is similar to the likelihood ratio test, it was used to test the hypothesis that each $\beta_i = 0$. Where $i = 1, 2, 3, 4$ and 5 (regression coefficient of the independent variables).

From the results the p-value for hypothesis H_1 was 0.017 which was below 0.05; the null hypothesis production cost has no significant influence on reshoring decision was

rejected. The hypothesis test for H_2 was 0.02 which was below the p-value of 0.05. Similarly, the null hypothesis product quality has no significant influence on reshoring decision was rejected.

Results for hypothesis H_3 returned a p-value of 0.026 which was below 0.05. subsequently the null hypothesis operational flexibility has no influence on reshoring decision was rejected. For hypothesis H_4 results indicated a p-value of 0.031 which was below the 0.05 meaning that the null hypothesis reduced time to market has no influence on reshoring decision was rejected. Finally, the null hypothesis H_5 hidden cost has no significant influence on reshoring decision was also rejected since the p-value was 0.016 which was below the p-value of 0.05. All the hypotheses were rejected meaning all the independent variables have a significant relationship with the dependent variable.

Findings suggested the influence of production cost, product quality, operational flexibility, reduced time to market and hidden cost production reshoring. Results concur with Weismann *et al*. (2017) study that found production cost, product quality, operational flexibility, reduced time to market and hidden cost as strategic drivers that were influencing manufacturing firms to reshore. Gray *et al*. (2013) noted the importance of these drivers in reshoring decision. Further results reflect findings by Kinkel (2012), Ellram *et al*. (2013) and De Backer *et al*. (2016) that rising costs in low-cost locations driven by production cost increases, quality challenges and supply chain constraints influenced production reshoring.

Table 4.49: Overall Regression Coefficients Without Moderator

Hypotheses	Wald-statistic	Sig value	Decision
Product cost has no significance influence on Reshoring Decision **H_0:** $\beta_1 = 0$ **vs** **H_1**: $\beta_1 \neq 0$	1.886	.017	Reject **H_0**
Product quality has no significance influence on Reshoring Decision **H_0:** $\beta_2 = 0$ **vs** **H_1**: $\beta_2 \neq 0$	9.516	.002	Reject **H_0**
Operational Flexibility has no significance influence on Reshoring Decision **H_0:** $\beta_3 = 0$ vs **H_1**: $\beta_3 \neq 0$	2.363	.026	Reject **H_0**
Reduced time for market has no significance influence on Reshoring Decision **H_0:** $\beta_4 = 0$ vs **H_1** : $\beta_4 \neq 0$	4.672	.031	Reject **H_0**
Hidden cost has no significance influence on Reshoring Decision **H_0:** $\beta_5 = 0$ **vs** **H_1**: $\beta_5 \neq 0$	5.844	.016	Reject **H_0**

4.8.3 Hypotheses Testing in Presence Of Moderator

Similarly, the hypotheses were also tested in the presence of the moderator. Table 4.50 shows the results. From the results the p-value for hypothesis H_1 was 0.000 which was below 0.05; the null hypothesis production cost has no significant influence on reshoring decision was rejected. The hypothesis test for H_2 was 0.001 which was below the p-value of 0.05. Similarly, the null hypothesis product quality has no significant influence on reshoring decision was rejected. Results for hypothesis H_3 returned a p-value of 0.003 which was below 0.05. subsequently the null hypothesis operational flexibility has no influence on reshoring decision was rejected. For hypothesis H_4 results indicated a p-value of 0.004 which was below the 0.05 meaning that the null hypothesis reduced time to market has no influence on reshoring decision was rejected. Finally, the null hypothesis H_5 hidden cost has no significant influence on reshoring decision was also rejected since the p-value was 0.000 which was below the p-value 0.05. It can be concluded that in the presence of the moderator, all independent variables had a significant relationship with the dependent variable.

Table 4.50: Overall Regression Coefficients With Moderator

Hypotheses	Wald-statistic	Sig value	Decision
Product cost has no significance influence on Reshoring Decision **H_0:** $\beta_1 = 0$ **vs H_1** : $\beta_1 \neq 0$	9.415	.000	Reject **H_0**
Product quality has no significance influence on Reshoring Decision **H_0:** $\beta_2 = 0$ **vs H_1**: $\beta_2 \neq 0$	11.412	.001	Reject **H_0**
Operational Flexibility has no significance influence on Reshoring Decision**H_0:** $\beta_3 = 0$ vs **H_1**: $\beta_3 \neq 0$	8.608	.003	Reject **H_0**
Reduced time for market has no significance influence on Reshoring Decision **H_0:** $\beta_4 = 0$ vs **H_1**: $\beta_4 \neq 0$	15.429	.004	Reject **H_0**
Hidden cost has no significance influence on Reshoring Decision **H_0:** $\beta_5 = 0$ **vs H_1**: $\beta_5 \neq 0$	11.968	.000	Reject **H_0**

4.8.4 Optimal Model

Based on the tests conducted in this study it was concluded that the independent variables (product cost, product quality, operational flexibility, reduced time to market and hidden cost) had a significant influence on the dependent variable (reshoring decision). The moderating variable (market condition) was found to have a moderating influence on the relationship between independent variables and dependent variable since it increased the influence of product quality, operational flexibility and hidden cost on reshoring decision. The moderating variable reduced the influence of production cost and reduced time to market on reshoring decision.

Moreover, by comparing the overall regression model 1 (without moderator) in Table 4.36 with overall regression model 2 (with moderator) in Table 4.37 it was clear that Cox & Snell R Square value for model 2 was greater than Cox & Snell R^2 value for model 1 that is $R_2^2 > R_1^2$ = 0.525 > 0.448. Likewise, Nagelkerke R^2 value for model 2 was greater than Nagelkerke R^2 value for model 1 that is $R_2^2 > R_1^2$ = 0.625 > 0.601. From

the findings it can be concluded that market condition had a moderating influence on the overall model. Consequently, based on the research findings the proposed study model was retained as the optimal model. Similarly, the conceptual framework as proposed in the study design was found to be appropriate and retained as well.

The optimal multiple logistic regression model was

$$P\ [Yn(=1|X)] = \exp(\ X'n\ \beta)/\ [1 + exp(X'n\ \beta) = F(X'n\ \beta)$$

$$P\ [Yn(=0|X)] = 1/[1 + \exp(\ X'n\ \beta) = 1 - F(X'n\ \beta)$$

$$P\ [Yn(=1|X)] = \exp\ (X'n\ \beta)\ /\ [1 + \exp\ (\beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 X_5 + \beta_6 X_6)$$

$$= F(\beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 X_5 + \beta_6 X_6)$$

$$P\ [Yn(=0|X)] = 1/[1 + \exp\ (\beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 X_5 + \beta_6 X_6)$$

$$= 1 - F(\beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 X_5 + \beta_6 X_6)$$

Log likelihood

$$Log\ L\ (\beta) = \sum_{y=0} \log[1 - F\ (\ X'n\ \beta)] + [1 + \sum_{y=1} log\ (X'n\ \beta)$$

$$Log\ L\ (\beta) = \sum_{y=0} \log[1 - F\ \ (\beta_0\ + \beta_1 X_1\ + \beta_2 X_2\ + \beta_3 X_3\ + \beta_4 X_4\ + \beta_5 X_5\ +\ \beta_6 X_6)\ + [1 + \sum_{y=1} log\ (\beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 X_5 + \beta_6 X_6)$$

CHAPTER FIVE

SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.1 Introduction

This study sought to establish the strategic drivers influencing production reshoring decision among manufacturing multinational corporations operating in Kenya. This chapter summarizes the study findings based on the six objectives of the study mainly: to explore the influence of production cost on production reshoring decision among Kenya's manufacturing multinational corporations; to establish the influence of product quality on production reshoring decision among Kenya's manufacturing multinational corporations; to assess the influence of operational flexibility on production reshoring decision among Kenya's manufacturing multinational corporations; to determine the influence of reduced time to market on production reshoring decision among Kenya's manufacturing multinational corporations; to explore the influence of hidden cost on production reshoring decision among Kenya's manufacturing multinational corporations and to determine the moderating influence of market condition on production reshoring decision among Kenya's manufacturing multinational corporations.

The chapter will also report on the conclusions of the study, recommendations and suggested areas for further study.

5.2 Summary of Findings

This study sought to establish the strategic drivers influencing production reshoring decision among manufacturing multinational corporations operating in Kenya. The summary of findings for all independent and moderating variables are presented in this section.

5.2.1 Influence of Production Cost on Reshoring Decision

The study revealed that production cost has a significant influence on production reshoring decision among Kenya's manufacturing multinational corporations. Rising production costs especially labour cost, energy cost and other production overheads were a significant driver for reshoring for Kenyan manufacturing entities. The study found that Kenyan manufacturing sector labour cost was growing at a higher percentage rate than growth in value of manufacturing output leading to erosion of manufacturing value added. Further the study findings indicate that manufacturing electricity tariff for Kenya was much higher than its East and Central Africa countries in addition to being above average World electricity tariff.

The findings suggest that rising production cost contributes to erosion of manufacturing competitiveness that may lead manufacturing MNCs to reshore production to lower cost locations. The findings are a pointer to the critical role of production cost in production location decisions for manufacturing multinational corporations.

5.2.2 Influence of Product Quality on Reshoring Decision

The study established that product quality has positive and significant relationship with reshoring decision. Study findings indicate that product quality influences consumers' purchase decision. Results indicate that product quality is a key strategic issue for Kenyan manufacturing MNCs. This shows that Kenyan manufacturing MNCs understood the importance of product quality and its impact on the overall manufacturing entity's performance.

Results suggest that product quality which encompasses it desirability by the consumer and its impact on the manufacturing entity's brand image is an important strategic driver for production reshoring decision.

5.2.3 Influence of Operational Flexibility on Reshoring Decision

The study found that operational flexibility positively and significantly influences production reshoring decision. Results indicate that Kenya has moderately sophisticated production process (in terms of labour utilization and degree of technology used) in comparison its regional counterparts leading to greater manufacturing operational flexibility than that enjoyed by Ethiopian, Tanzania and Egypt. Study findings suggest that South Africa was enjoying greater production process sophistication than Kenya which may explain the reported cases of relocation of production from Kenya to South Africa.

According to the findings the desire to achieve operational flexibility was driven by the need for improving customer responsiveness. Operational flexibility was found to be critical for sustaining competitiveness on the part of the manufacturing MNCs and was driving the need for manufacturing agility.

5.2.4 Influence of Reduced Time to Market on Reshoring Decision

The study intended to find out whether reduced time to market had influence on production reshoring decision among Kenya's manufacturing MNCs. Presence of enough and quality infrastructure was found to facilitate enlargement of markets and was also critical in ensuring cost efficiency in transportation. Kenyan MNCs were constantly seeking ways of shortening delivery lead times. Reduced time to market was found to have a positive significant influence on production reshoring decision for MNCs.

Increasing demand by customers for shorter delivery lead times were putting pressure on manufacturing MNCs to seeking better ways of meeting such demands including production reshoring. Achieving efficiency in supply chain and reducing delivery lead times to end customers is an objective which every manufacturing entity seeks.

5.2.5 Influence of Hidden Cost on Reshoring Decision

The study sought to find out whether hidden cost had any influence on production reshoring decision among Kenya's manufacturing MNCs. Results indicate that hidden cost has a positive and significant influence on production reshoring decision. Study findings indicate that Kenyan manufacturing MNCs considered total cost of operations concept as critical when making offshoring and reshoring decisions. Results suggest that supply chain disruptions due to natural disasters was not a major concern for Kenyan MNCs.

Intellectual property risk was a concern for MNCs due to its negative financial impact on their businesses. Study findings indicate that MNCs paid greater attention to intellectual property risk particularly threat of counterfeit products. Further rise in coordination cost for offshored activities were driving the need for production reshoring. Overall hidden cost emerged as a major consideration in production reshoring decision for Kenyan manufacturing MNCs.

5.2.6 Moderating Influence of Market Condition on Independent and Dependent Variables

The study sought to ascertain the moderating influence of market condition on the relationship between the independent and depend variables of the study. The findings suggest that market condition has a positive and significant influence on product quality, operational flexibility and hidden cost in their relationship with dependent variable reshoring decision. Market condition has a negative and significant influence on the relationship between production cost and reshoring decision and between reduced time to market and reshoring decision.

Results suggest that Kenya's market size index was the lowest in comparison to South Africa, Tanzania, Egypt and Ethiopia indicating that manufactures imports were much higher than manufactures exports for Kenya. Further manufactures exports were found to have been on a declining trend suggesting a higher preference of imports to locally

produced goods or inability to meet market demand on the part of Kenyan manufacturing entities. Lower market size index is an indication of low competitiveness of a country's manufacturing sector which may lead to production reshoring.

5.3 Overall Effect of the Variables

The study showed a significant influence of all the five independent variables and moderating variable on production reshoring decision among Kenya's manufacturing MNCs. The inclusion of all the five independent variables and the moderating variable explained 78.9% of the changes in reshoring decision for every change in all the predictor variables. For test of overall significance of all the independent variables production cost, product quality, operational flexibility, reduced time to market and hidden cost and moderating variable market condition using ANOVA at 0.05 level of significance found the model to be significant.

5.4 Conclusions

This study sought to establish the strategic drivers influencing production reshoring decision among manufacturing multinational corporations operating in Kenya. The study conclusions were made in line with the findings. This section highlights the main conclusions on the five independent variables production cost, product quality, operational flexibility, reduced time to market, hidden cost and the moderating variable market condition. The section also stresses the combined effect of the five independent variables and one moderating variable on production reshoring decision among Kenya's manufacturing multinational corporations.

The first objective of the study intended to determine the influence of production cost on production reshoring decision among Kenya's manufacturing multinational corporations. Based on the findings it can be concluded that production cost has

significant influence on reshoring decision. Rising labour and energy costs, supply chain factors and labour productivity are key cost drivers for multinational manufacturing entities. The behaviour of these production cost drivers in deferent production locations forces manufacturing MNCs to take critical strategic decisions including production reshoring.

The study wanted to find out the influence of product quality on production reshoring decision. From the findings it can be inferred that product quality is a key strategic issue in production reshoring decision for Kenya's manufacturing multinational corporations. Product quality has a positive influence on reshoring decision. Further customers' purchase decisions are influenced by their perception of the quality of the product. Location where product is manufactured also influences consumers' perception of its quality. Product quality is a key driver for brand image and manufacturing entities need to pay critical attention to product quality.

The study sought to find out if operational flexibility had influence on production reshoring decision among Kenya's MNCs. Based on the findings it is logical to conclude that operational flexibility is a key component of sustaining competitive advantage for Kenya's manufacturing MNCs. It was found to have a positive influence of production reshoring decision. Changing customer demands such as need for shorter delivery times, placement of unique orders and constant need for improvement in customer responsiveness calls for increased operational flexibility for manufacturing MNCs. Kenyan manufacturing MNCs were found to have moderate production process sophistication. The ability to meet unique customer orders and handle request for short production runs defines the operational flexibility of a production facility and hence the ability to sustain competitiveness.

The study intended to establish the influence of reduced time to market on production reshoring decision. It is logical to conclude based on the findings reduced time to market has a positive influence on production reshoring decision among manufacturing MNCs in Kenya. With customers demanding increased efficiency in firms servicing their

orders, reduced time to market increases ability of the firms to compete in the marketplace.

The study wanted to find out the influence of hidden cost on production reshoring decision. Findings from the study indicate that increasingly manufacturing entities are considering all relevant costs including hidden cost before making production facility location decisions. MNCs are critically considering supply chain disruptions, coordination costs for offshored operations and intellectual property theft risks in their reshoring decision. Increased risk and theft of intellectual property in an offshore location would influence MNCs to reshore production facility to safer locations. Similarly, increased cost of coordinating offshored activities reduces an MNCs competitiveness.

The study sought to establish the moderating influence of market condition on relationship between the strategic drivers and production reshoring decision. Based on the findings, it can be concluded that market condition has a positive moderating influence on the relationship between the strategic drivers and production reshoring decision. Home country market size and demand volatility were found to be critical in moderating the decision to reshore. The propensity to reshore was influenced by the MNC's market size in home country or host country. The higher the share of production sold in home country in relation to share of production sold in host country the more likely production reshoring by the MNC. Similarly demand volatility in home or host country also influenced the decision to reshore.

Finally based on the findings it was concluded that 78.9% of the changes in reshoring decision can be explained by independent variables and the moderating variable. The independent and moderating variables had a significant relationship with the dependent variable of the study.

5.5 Recommendations

This study sought to establish the strategic drivers influencing production reshoring decision among manufacturing multinational corporations operating in Kenya. Production cost, product quality, operational flexibility, reduced time to market and hidden cost were determined to be strategic drivers for production reshoring decision among Kenya's manufacturing MNCs. The study recommends that:

5.5.1 Production Cost

Production cost drivers be closely managed by MNCs to ensure overall competitiveness of a country's manufacturing sector. Deliberate policy interventions on labour cost, energy and other supply chain costs by the Kenyan government are required to realize the aspirations of Kenya's Vision 2030 on industrialization. Specific interventions such as investment in growth of renewable energy and cheaper energy sources is recommended.

5.5.2 Product Quality

Kenya's manufacturing MNCs need to continuously pursue product quality improvements to ensure their products meet consumers' product quality expectations. Reduction of manufacturing defects and scrap rates would not only improve product quality but also contribute significantly to competitiveness of Made in Kenya brand. Further consumers perceived product quality has a direct correlation with willingness to pay a premium price.

5.5.3 Operational Flexibility

Manufacturing entities should invest in agile manufacturing to increase operational flexibility and improve production process sophistication in order to improve capacity to service unique customer orders, short production runs and achieve overall operational efficiency. Increased operational flexibility would lead to higher production process sophistication.

5.5.4 Reduced Time to Market

Manufacturing MNCs should revamp their supply chains to achieve improved turnaround times for inbound and outbound logistics. The government should also invest in supportive infrastructure to improve supply chain efficiencies and enable manufacturing entities improve on customer responsiveness and overall competitiveness of the manufacturing sector. Improved goods market efficiency will lead to improved rating for Kenya's manufacturing sector competitiveness.

5.5.5 Hidden Cost

Finally, the government should strengthen intellectual property laws and enhance enforcement of the same to reduce incidences of counterfeit products and theft of intellectual property. Further the government should seek to gain greater control on corruption which is one of the elements that negatively affects the country's ability to protect intellectual property rights. Enhancement and enforcement mechanisms will result in reduced cost of intellectual property protection on the part of manufacturing MNCs in Kenya.

5.6 Study's Contribution to Theory and Existing Literature

This study is a milestone on understanding of reshoring and its drivers in the context of Kenya's manufacturing sector. Reshoring is exciting and growing topic among scholars and policy makers. The finding of the study will enhance the knowledge about reshoring and contribute towards development of a theory on reshoring. The conceptual framework proposed by this study is useful in future research on this subject.

5.7 Areas of Further Study

This study sought to determine the strategic drivers influencing production reshoring decision among manufacturing multinational corporations operating in Kenya. The study

recommends that similar research be carried out on the small and medium manufacturing companies not classified as MNCs to determine whether the findings will be different from those of this study as a means of further enhancing the knowledge on reshoring.

Available literature indicates the need to grow the body of knowledge on reshoring towards development of a reshoring theory. It is worth noting that the overall model of the study answers the question of production reshoring decision by 78.9%. Further research may be necessary to find out whether other strategic drivers for production reshoring exist.

The study considered the moderating influence of market condition from the manufacturing multinational corporation's perspective and did not consider the MNC's customers' perspective. Considering demand volatility is customer driven, future research may wish to consider the moderating influence of market condition from the Kenyan customers' perspective. Since the study was undertaken on a Kenyan context, there is need to carryout similar research in other emerging economies to increase the understanding of the reshoring phenomenon. Further research can also be directed towards understanding the moderating influence of market condition in other countries and contexts.

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APPENDICES

APPENDIX I SUMMARY OF CRITICAL EMPIRICAL REVIEW

Author	Focus	Findings	Recommendations
Gylling *et al*. (2015)	Offshoring, outsourcing and backshoring decisions	Changes in external factors, pressure for shorter lead-times, product specifications and improved accuracy of cost computations influence offshoring, outsourcing and backshoring decisions	Study considered the small and medium enterprises and took a case study perspective with data collection from one manufacturing entity
Martinez-Mora and Merino (2014)	Offshoring and reshoring in the Spanish footwear industry	Changes in economic climate (labour cost differentials) and changes in market conditions arising from changing customer preferences (smaller batches in shorter time frames) imposing conditions leading reshoring	Study used non-continuous data in determining the relationship between the study variables. Study did not consider the relationship between share of production in host country that is sold in home country.
Bailey and De Propris (2014)	Reshoring and its limits in U.K. automotive industry	Offshore location transportation costs and labour cost increases and exchange rate shifts driving reshoring decisions. However, reshoring not widespread in U.K. automotive industry	Study took a narrow perspective of U.K. automotive industry and finding may not be generalized for different segments of the manufacturing industry.
Ellram, Tate and Petersen	Factors influencing manufacturing offshoring and	Overall cost of doing business, profitability, customer value and	Study considered only one theoretical perspective (Eclectic paradigm) and

(2013)	reshoring decisions	supply chain-related factors influencing manufacturing location decisions.	did not consider other theorical such TCE and RBV. Study took a US perspective focusing on data from large US manufacturing firms. Study also carried out during the "*Bring Jobs Back to America"* campaign that may have influenced the results.
Author	Focus	Findings	Recommendations
Kinkel and Maloca (2009)	Drivers and antecedents of manufacturing offshoring and backshoring	Lack of flexibility and product quality challenges main drivers for backshoring. Backshoring seen as correction of prior misjudgment of offshoring decision	Some of the findings contradict results from studies by Fratocchi *et al.* (2016).
Canham and Hamilton (2013)	SME Internationalization: offshoring, backshoring, or staying at home	Comparative advantages of low-cost locations when offset by impaired capabilities in flexibility and quality influencing reshoring decision	Study mainly focused on small and medium enterprises in New Zealand. The remoteness of New Zealand and its large distances to low cost locations of South East Asia is a limitation in generalizing of the findings to other contexts.
Fisch and Zschoche (2012)	Effects of operational flexibility on decisions to withdraw from	Rising and uncertain labour costs influences decisions to withdraw from foreign production locations; costs of	Study mainly focused on shifting of production among the different subsidiaries of each German manufacturing

	foreign production locations	increasing production output moderate the influence of labour cost on decision to withdraw from a foreign location.	parent company. Further the study only considered operational flexibility in relation to other plants owner by each manufacturing entity.
Fratocchi *et al.* (2016)	Motivations of manufacturing reshoring	Value-driven and country-specific motivations prevail over efficiency-driven and firm-specific ones respectively.	Study exclusively used secondary data most of which was drawn from non-academic sources.
Grappi *et al.* (2015)	Consumer stakeholder responses to reshoring strategies	Consumers 'willingness to purchase a product influence by their perception of its manufacturing origin and qualify.	Study used experimental design with manipulation of company reshoring strategies among the selected study subjects.
Wu and Zhang (2014)	Analysis of sourcing decisions under competition	Market condition such as market size and demand volatility drive firms to make offshoring and reshoring decisions	Study used game-theoretic model to simulate firms' sourcing decisions.

APPENDIX II RESEARCH QUESTIONNAIRE

Strategic drivers influencing production reshoring decision among manufacturing multinational corporations in Kenya

This questionnaire is for the purposes of data collection purely for academic purposes. The study seeks to establish strategic drivers influencing production reshoring decision among multinational corporations engaged in manufacturing business in Kenya. All information received will be treated with strict confidence. Kindly ensure that you do not include your name or any identification marks on this questionnaire.

Kindly answer all questions as indicated by either filling in the blank or ticking the appropriate option box that applies.

SECTION 1 GENERAL INFORMATION

Name of the organization (**Optional**) _____

Position in organization: [ ] Chief Executive Officer [ ] Chief Finance Officer

Other (specify) _____

How long have you been with your organization? [ ] 5 years or less [ ] 6 to 10 years [ ] 11 to 15 years [ ] Over 15 years

Industry sector

Sector	**Tick (√)**	**Sector**	**Tick (√)**
Building, Mining and Construction		Motor Vehicle Assembly & Accessories	
Chemical and Allied		Paper & Board	
Energy, Electrical & Electronics		Pharmaceutical & Medical Equipment	
Food, Beverages		Plastics & Rubber	
Leather & Footwear		Textile & Apparel	
Metal & Allied		Timber, Wood & Furniture	
Fast Moving consumer goods		Other (specify)	

Is your organization (i) A Kenyan MNC [ ] or (ii) A subsidiary of an international MNC [ ] How many years has your organization been operating in Kenya? _____

SECTION 2 MANUFACTURING FACILITIES INFORMATION

2.1 (a) Do you have any manufacturing facilities in Kenya? Yes [ ] No [ ].

2.1 (b) If No, in which country are the facilities located? _____

2.2 Has your organization at one time had its manufacturing facilities in Kenya? Yes [ ] No [ ]

SECTION 3 PRODUCTION COST

3.1 Changes in production costs can trigger decisions to relocate production to a lower cost location or to a multinational's home country. Using a scale of 1 to 5 indicate to what extent the following component of manufacturing entities' cost structure influence production relocation decision (reshoring); where 5= very large extent, 4= large extent, 3=. Moderate extent, 2= low extent and 1= very low extent

	5	**4**	**3**	**2**	**1**
Labour cost increase in current location					
Labour cost increase in an offshore location					
Energy cost increase in current location					
Energy costs in an offshore location					
Other production overhead cost increase					
Productivity per worker					

3.2 If the cost advantages you are currently enjoying in your current location are eroded, would you consider

[ ] Moving your production to a lower-cost location

[ ] Continue in current location

[ ] Take no action

SECTION 4 PRODUCT QUALITY

4.1 Using the following scale of 1 to 5 indicating your degree of agreement, please rate the following product quality factors in relation to their influence on the decision to reshore production; where 5= very large extent, 4= large extent, 3=. Moderate extent, 2= low extent and 1= very low extent

	5	**4**	**3**	**2**	**1**
Value of products returned by customers due to quality concerns is below 1% of manufacturing output					
Product quality influences a customer's purchase decision					
Product origin influences its perceived quality					
Brand image critical to us					

4.2 If you customers were concerned about the location where your products are made from, would you seek to move their production to?

[ ] A location with a high reputation for producing quality products

[ ] Continue producing in current location and provide assurance of high quality standards

[ ] Take no further action

4.3 (a) Have you in the past received compliments regarding perceived quality of your products? Yes [ ] No [ ]

(b) If yes explain _____

_____

SECTION 5 OPERATIONAL FLEXIBILITY

5.1 Operational flexibility is critical not only for ensuring quality service delivery but also meeting unique customer requirement and achieving operational cost efficiency. Using a scale of 1 to 5 kindly indicate the extent to which you agree or appropriate the statements in the table below relating to influence of operational flexibility on your production reshoring strategy; where 5= very large extent, 4= large extent, 3=. Moderate extent, 2= low extent and 1= very low extent

	5	**4**	**3**	**2**	**1**
Operational efficiency is critical in sustaining competitiveness					
Increased customers' request for customization					
Ability to handle short production runs					
Improving responsiveness in customer orders servicing					
Reduction of delivery lead times to end users					
Pressure to fulfilling shorter production run requests					
Production location determine the ability to meet unique customer orders					
Difficulties in meeting unique customer orders					

5.2 (a) In your opinion if a location offered high rigidity and lower operational flexibility, would your firm consider relocation to a location that enhances lower rigidity and greater flexibility? Yes [ ] No [ ]

5.2 (b) Explain

_____

_____

SECTION 6 REDUCED TIME TO MARKET

6.1 Reduced time to market has been cited as a key contributor to production reshoring decisions. Using the following scale of 1 to 5 please rate the following components of reduced time to market and indicate extent of agreement or applicability of the same in your production reshoring decision; where 5= very large extent, 4= large extent, 3=. Moderate extent, 2= low extent and 1= very low extent

	5	**4**	**3**	**2**	**1**
Shorter delivery lead times critical for sustaining competitive strategy					
Goods market inefficiencies (longer lead times) lead to production relocation					
Customers demanding for shorter lead times					

6.2 Would you consider locating your manufacturing facilities closer to markets you serve in order to reduce proximity to market distance? Yes [ ] No [ ]

SECTION 7 HIDDEN COST

7.1 In the past production location decisions were based on per-unit cost comparisons between locations. However increasingly manufacturing entities are considering all relevant costs including hidden cost. Using the following scale please rate the following components of hidden cost influence production reshoring decision for your organization: 5 = Very great extent; 4 = Great extent; 3 = moderate extent; 2 = low extent; and 1 Very low extent.

	5	**4**	**3**	**2**	**1**
We considered total cost of operations in making production location decisions					
We have experienced frequent supply chain disruptions over the last three years					

Natural disasters have affected our supply chain					
Intellectual property risks influence decision to relocate production					
Coordination cost increases influence decision to reshore					

SECTION 8 MARKET CONDITION

8.1 Manufacturing entities strive to meet customer expectations in order to attain sustainable competitive advantage. Market size (share of production sold in host country) and demand volatility are critical for influencing reshoring decision. Using the following scale please rate the following components of market condition influence production activities relocation decision for your organization: 5 = Very great extent; 4 = Great extent; 3 = moderate extent; 2 = low extent; and 1 Very low extent.

	5	**4**	**3**	**2**	**1**
Share of production sold in host country					
Desire to grow home country customer base					
Production in home country improves home country customer responsiveness					
Demand volatility in host country market influence					

8.2 What would you say is the share of your production that is sold in your company's home country market?

8.2.1 Less than 25% [ ]

8.2.2 Between 25– 40% [ ]

8.2.3 Between 41-65% [ ]

8.2.4 Over 65% [ ]

8.3 What would you say is the share of your production that is sold in your host country market?

8.3.1 Less than 25% [ ]

8.3.2 Between 25– 40% [ ]

8.3.3 Between 41-65% [ ]

8.3.4 Over 65% [ ]

SECTION 9 RESHORING DECISION

9.1 If you were to consider the following drivers of production reshoring relocation of your production from an offshore location to another location which factors in your opinion would most influence your decision to shift production? Rank the factors below in order of their importance on a scale of 1 to 5 with 1 being the least influential and 5 the highest

	Factor	**Ranking - Please Tick (√)**				
		1	2	3	4	5
1.	Rise in production costs					
2.	Product quality concerns					
3.	Product manufacturing origin					
4.	Operational flexibility concerns					
5.	Meeting changing customer demand patterns					
6.	Need to reduce time to market					
7.	Hidden cost considerations					
8.	Concerns regarding theft of intellectual property					

END OF QUESTIONNAIRE

You can email the questionnaire back through **jomo.gatundu@gmail.com**

Thank you for your participation

APPENDIX III Correlation Coefficient of all Variables

Production cost

	PC1	PC2	PC3	PC4	PC5	PC6
Labour cost increase in current location	1.000	.553	.072	.022	.415	.188
Labour cost increase in an offshore location	.553	1.000	-.219	.161	.376	.477
Energy cost increase in current location	.072	-.219	1.000	.195	-.068	-.179
Energy costs in an offshore location	.022	.161	.195	1.000	.434	.318
Other production overhead cost increase	.415	.376	-.068	.434	1.000	.570
Productivity per worker	.188	.477	-.179	.318	.570	1.000

Product Quality

	PQ1	PQ2	PQ3	PQ4
Value of products returned by customers due to quality concerns is below 1% of manufacturing output	1.000	.064	.062	.032
Product quality influences a customer's purchase decision	.064	1.000	-.116	.121
Product origin influences its perceived quality	.062	-.116	1.000	.190
Brand image critical to us	.032	.121	.190	1.000

Operation Flexibility

	OF1	OF2	OF3	OF4	OF5	OF6	OF7	OF8
Operational efficiency is critical in sustaining competitiveness	1.000	.385	.144	.102	.105	-.236	-.335	-.273
Increased customers' request for	.385	1.000	.401	.215	.006	-.049	-.010	-.111

customization								
Ability to handle short production runs	.144	.401	1.000	.156	.346	.101	.054	.053
Improving responsiveness in customer orders servicing	.102	.215	.156	1.000	.076	-.048	.130	.047
Reduction of delivery lead times to end users	.105	.006	.346	.076	1.000	.386	.282	.261
Pressure to fulfilling shorter production run requests	-.236	-.049	.101	-.048	.386	1.000	.723	.735
Production location determine the ability to meet unique customer orders	-.335	-.010	.054	.130	.282	.723	1.000	.705
Difficulties in meeting unique customer orders	-.273	-.111	.053	.047	.261	.735	.705	1.000

a. Determinant = .069

Reduced Time to Market

	RT1	RT2	RT3
Shorter delivery lead times critical for sustaining competitive strategy	1.000	.424	.057
Goods market inefficiencies (longer lead times) lead to production relocation	.424	1.000	-.029
Customers demanding for shorter lead times	.057	-.029	1.000

Hidden Cost

	HC1	HC2	HC3	HC4
We considered total cost of operations in making production location decisions	1.000	.323	.107	.045
We have experienced frequent supply chain disruptions over the last three years	.323	1.000	.111	.182
Natural disasters have affected our supply chain	.107	.111	1.000	.318
Intellectual property risks influence decision to relocate production	.045	.182	.318	1.000

Market Condition

	MC1	MC2	MC3	MC4
Share of production sold in host country	1.000	.605	.366	.583
Desire to grow home country customer base	.605	1.000	.559	.495
Production in home country improves home country customer responsiveness	.366	.559	1.000	.376
Demand volatility in host country market influence	.583	.495	.376	1.000

Reshoring Decision

	RD1	**RD2**	**RD3**	**RD4**	**RD5**	**RD6**	**RD7**	**RD8**
Rise in production costs	1.000	.180	-.022	.051	.164	.077	-.202	-.110
Product quality concerns	.180	1.000	-.105	.134	-.029	-.265	-.242	-.175
Product manufacturing origin	-.022	-.105	1.000	.274	.343	.556	.456	.488
Operational flexibility concerns	.051	.134	.274	1.000	.318	.265	.501	.289

Meeting changing customer demand patterns	.164	-.029	.343	.318	1.000	.544	.347	.462
Need to reduce time to market	.077	-.265	.556	.265	.544	1.000	.514	.501
Hidden cost considerations	-.202	-.242	.456	.501	.347	.514	1.000	.654
Concerns regarding intellectual property theft	-.110	-.175	.488	.289	.462	.501	.654	1.000

APPENDIX IV LIST OF MANUFACTURING MNCs

No	Name of Firm	Sector	Location
1	African Diatomite	Building, mining & construction	Kariandusi, Gilgil
2	African Marine and General Engineering Ltd	Metal and allied	Tagan Road, Mombasa
3	Agro Chemicals and Food Company	Food and beverage	Muhoroni, Kisumu
4	ARM Cement Limited	Building, mining & construction	Chiromo Road
5	Associated Battery Manufacturers	Motor vehicle and accessories	Kampala Road, Nairobi
6	Avery East Africa Limited	Energy, electrical and electronics	Factory Street Nairobi
7	Bamburi Cement	Building, mining & construction	Mara Ragati Road, Nairobi
8	BASF East Africa Limited	Chemical and allied	Riverside Drive
9	Bata Shoe Company	Leather and footwear	Limuru
10	Baumann Engineering	Energy, electrical and electronics	Kampala Road, Nairobi
11	Bayer East Africa	Chemical and allied	Outering Road - Ruaraka
12	Beiersdorf East Africa	Chemical and allied	Sasio Road, Nairobi
13	Beta Healthcare International	Pharmaceutical and medical equipment	Mogadishu Road
14	Beverage Services (K)	Food and beverage	Viwandani, Likoni Road
15	Bidco Africa Limited	Food and beverage	Off Garissa Road, Thika
16	BOC Kenya	Chemical and allied	Kitui Road
17	British American Tobacco	Food and beverage	Likoni Road
18	Brookside Dairy Ltd	Food and beverage	Thika Road
19	Cadbury Kenya	Food and beverage	Ol Kalou Road
20	Capwell Industries	Food and beverage	Garissa Road, Thika
21	Carbacid (Co2)	Chemical and allied	Commercial Street
22	Central Glass Industries	Building, mining & construction	Thika Road
23	CMC Motors Group	Motor vehicle and	Lusaka Road

		accessories	
24	Cocacola East Africa	Food and beverage	Kilimanjaro Road, Nairobi
25	Cosmos Limited	Pharmaceutical and medical equipment	Rangwe Road, Nairobi
26	Crown Paints Kenya Ltd	Chemical and allied	Likoni Road
27	Danone Baby Nutrition Africa and Overseas	Food and beverage	Waiyaki Way, Nairobi
28	Davis & Shirtliff Ltd	Metal and allied	Dundori Road
29	Dawa Limited	Pharmaceutical and medical equipment	Baba Dogo Road, Nairobi
30	De La Rue Currency and Security Printing	Paper and board	Noordin Road
31	Del Monte Kenya	Food and beverage	Thika
32	Desbro Kenya	Chemical and allied	Kampala Road, Nairobi
33	East Africa Breweries	Food and beverage	Thika Road
34	East Africa Portland Cement	Building, mining & construction	Athi river
35	East African Cables	Energy, electrical and electronics	Addis Ababa Road
36	Eveready Batteries East Africa	Chemical and allied	Standard Building Wabera Street
37	General Motors East Africa	Motor vehicle and accessories	Mombasa Road
38	General Plastics	Plastics and rubber	Enterprise Road
39	Glaxo Smithkline Ltd	Pharmaceutical and medical equipment	Likoni Road
40	Global Apparel EPZ Limited	Textile and apparels	EPZ Athi River
41	Greif East Africa Ltd	Metal and allied	Unga Street, Mombasa
42	Haco Tiger Brands EA Ltd	Chemical and allied	Kasarani-Mwiki Road
43	Henkel Kenya	Chemical and allied	Outering Road - Ruaraka
44	Holman Brothers	Energy, electrical and electronics	Bunyala Road, Nairobi
45	International Energy Technik	Building, mining & construction	Alpha Centre, Mombasa Road
46	Johnson Diversey East Africa	Chemical and allied	Cooper Centre, Nairobi
47	Kapa Oil Refineries Ltd	Food and beverage	Mombasa Road
48	Kel Chemicals	Chemical and allied	Thika

49	Kenya Vehicle Manufacturers	Motor vehicle and accessories	Garissa Road, Thika
50	Kenya Wine Agencies Ltd	Food and beverage	Enterprise Road
51	L'Oreal East Africa Ltd	Chemical and allied	Lenana Road, Laibon Centre
52	Mabati Rolling Mills Ltd	Metal and allied	Mombasa Road
53	Marshall Fowler	Energy, electrical and electronics	Enterprise Road
54	Mastermind Kenya Ltd	Food and beverage	Mombasa Road
55	Mecol Limited	Metal and allied	Commercial Street
56	Menengai Oil Refineries	Food and beverage	Nakuru
57	Metal Crowns Limited	Metal and allied	Runyenjes Road, Nairobi
58	Metsec Limited	Energy, electrical and electronics	Mombasa Road
59	Murphy Chemicals	Chemical and allied	Baba Dogo Road, Nairobi
60	Nestle Foods Kenya Ltd	Food and beverage	Pate Road
61	New Kenya Co-operative Creameries	Food and beverage	Dakar Road
62	Orbit Chemical Industries	Chemical and allied	Mombasa Road
63	P G Bison	Timber, wood and furniture	Kampala Road, Nairobi
64	P Z Cussons	Chemical and allied	Baba Dogo Road, Nairobi
65	Packaging Industries	Plastics and rubber	Lunga Lunga Road
66	Plastics & Rubber Industries	Plastics and rubber	Gilgil Road
67	Polychem East Africa	Chemical and allied	Mogadishu Road
68	Power Technics Limited	Energy, electrical and electronics	Mombasa Road
69	Premier Food Industries Ltd	Food and beverage	Baba Dogo Road, Nairobi
70	Premier Industries	Plastics and rubber	Baba Dogo Road, Nairobi
71	Proctor and Gamble EA Ltd	Chemical and allied	Westlands Road, Purshattam Place
72	Rai Plywoods Limited	Timber, wood and furniture	Uganda Road, Eldoret
73	Razco Limited	Food and beverage	Baba Dogo Road, Nairobi
74	Reckitt Benkiser EA Ltd	Chemical and allied	14 Riverside,

			Arlington Building
75	Sadolin Paints East Africa	Chemical and allied	Jirore Road, Industrial Area
76	Safal Mitek Ltd	Metal and allied	Mombasa Road
77	Sameer Africa Ltd	Plastics and rubber	Mombasa Road
78	Sameer Agriculture and Livestock	Food and beverage	Olesor Road
79	Savannah Cement	Building, mining & construction	Athi river
80	SC Johnson and Son	Chemical and allied	Outering Road - Ruaraka
81	Scania East Africa	Motor vehicle and accessories	Kitui Road
82	Sunflag Textile and Knitwear Limited	Textile and apparels	Kitui road
83	Syngenta East Africa	Chemical and allied	Matumbaro Road, Nairobi
84	Tata Chemicals	Chemical and allied	Magadi
85	Tetra Pak Ltd	Paper and board	Likoni Road
86	Thermopak Limited	Plastics and rubber	Funzi Road
87	Toyota Kenya	Motor vehicle and accessories	Uhuru Highway, Nairobi
88	Trufoods Limited	Food and beverage	Jogoo Road, Nairobi
89	Twiga Chemicals	Chemical and allied	Ol Kalou Road
90	Unga Group	Food and beverage	Commercial Street
91	Unilever East and Southern Africa	Chemical and allied	Commercial Street
92	United Aryan (EPZ)	Textile and apparels	Baba Dogo Road, Nairobi
93	United Distillers and Vintners	Food and beverage	Kampala Road, Nairobi
94	Warren Enterprises	Metal and allied	Kasarani-Mwiki Road
95	West Kenya Sugar	Food and beverage	Kakamega
96	Wrigley Company EA Ltd	Food and beverage	Bamburi Road

Source: Extracted from Kenya Association of Manufacturers. (2015). *Kenya manufacturers and exporters directory.* Nairobi.