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EFFECT OF FINANCIAL RISKS ON PERFORMANCE OF MANUFACTURING FIRMS IN KENYA

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ABSTRACT

The general objective of the study was to determine the moderating role of supply chain adaptability on the relationship between financial flow risks and performance of manufacturing firms in Kenya. The study specifically determined the effect of financial risks and performance of manufacturing firms and to determine the moderating role of supply chain adaptability on the relationship between financial flow risks and performance of manufacturing firms among the manufacturing firms in Kenya. The research design was explanatory survey research design. The target population of this study were 682 manufacturing firms in Kenya. From the target population of 682 firms, a random sample of 169 firms were selected where procurement manager and assistance manager were chosen giving a total sample size of 338. This study used questionnaires to collect data relevant to the study. The variables were tested for reliability by computing the Cronbach alpha statistical tests. Quantitative data collected were analyzed using descriptive statistical techniques which were frequencies, mean, standard deviation. Whereas inferential statistics to be used were, ANOVA/T test, Pearson correlation and the Regression Analysis Model. To test moderating effect the study used hierarchical regression model at 0.05 level of significance. The study established that financial flow risks have a positive influence on the performance of manufacturing firms. In addition, supply chain adaptability significantly moderated the relationship between financial flow risks and firm performance. It is recommended for firms to have adequate visibility into the financial stability of their entire supplier community. Finally, it is important for firms to enforce environmental incident notices at manufacturing sites and undertake environmental and financial due diligence when purchasing or selling goods/services.

Key Words: Supply Chain Adaptability, Financial Flow Risks, Performance of Manufacturing Firms

Background of the Study

Business is becoming riskier nowadays because of the increasing use of outsourcing, globalization of supply chains, and shorter product life-cycle (Barry, 2014; Waters, 2017; Christopher et al., 2016). Risk makes supply chains more complicated and more time sensitive than ever before, and therefore companies within a supply chain need to strategically cooperate with their key suppliers and customers to survive, compete, and prosper (Frohlich and Westbrook, 2011; Zhao et al., 2018; Flynnet al., 2014).

Supply chain Risks (SCRs) have become a serious problem as turbulent environments, uncertain supply and demand, and unpredictable disruptions are more common nowadays. It is difficult for most supply chains to respond to changes and they are vulnerable to SCRs (Tangand Tomlin, 2018). Therefore, the challenge for companies is how to conduct SCI under risky environments, and various risks may play different roles in implementing different types of supply chai adaptability (SCI).

Supply risk is the probability of an incident associated with inbound supply from individual supplier failures or the supply market, in which its outcomes result in the inability of the purchasing firm to meet customer demand or cause threats to customer life and safety (Zsidisin, 2013). Ellis, Henry and Shockley (2017) described SC risk as ‘an individual’s perception of the total potential loss associated with the disruption of supply of a particular purchased item from a particular supplier.

Among various aspects of supply risks, supply chain delivery risk may be the most important because more and more companies expect their suppliers to make just-in-time deliveries. Suppliers who fail to provide on-time delivery will cause many problems for purchasing firms, for example, regarding manufacturing, inventory, and sales functions. Demand risk includes risks associated with turbulent environments, and unstable and dynamic customer needs (Chen and Paulraj, 2004).Unstable demand is usually the biggest challenge for today’s companies, which leads to high inventory costs, low levels of customer service, and unreliable deliveries. Therefore, this study attempts to empirically explore the impact of financial flow risks.

Supply chain adaptability (SCA) is advocated as the key to creating value in supply chain management (SCM)(Horvath, 2011).While SCA is considered a powerful weapon to gain competitive advantages, there are still many unanswered questions regarding the mechanism of SCA implementation(Frohlich, 2002; Power, 2005; Flynn et al., 2010; Zhao et al., 2011). For example, how can SCA be implemented to solve supply chain risk and hence performance of manufacturing firms? And more so, which factors hinder the implementation of SCA? Few prior studies have addressed this question.

For example, Frohlich (2002) investigated supply, internal, and demand barriers in web-based SCA implementation. Richey et al. (2009) considered internal planning failure and external monitoring failure as barriers to SCA. However, research in this area is still in its infancy and further empirical studies are required to reveal the “barriers to SCA” to supply chain managers. The main barrier discussed in this study is supply chain risk (SCR).

In Kenya, the manufacturing sector is important and it makes a substantial contribution to the country’s economic development. But in recent years, the sector’s contribution to gross domestic product (GDP) has worsened due to unforeseen disruptions like workers strikes, terrorist activities, draught incidences, volatility in international oil prices and high cost of production (Arani, 2015).

Manufacturing firms constantly face the problem of on-time delivery. As the production capacity of manufacturers is limited, they need to allocate their limited production resources to meet the requirements of the varying demand at a reasonable cost.

Regarding production schedule attainment, firms need to receive the materials and components on time. Through integration with suppliers, manufacturing firms share order and inventory information with suppliers, which helps suppliers prepare high-quality materials and services on time. Therefore, the biggest challenge for the manufacturing sector is on how to deal with unexpected disruptions in order to build supply chain adaptability ((Arani, 2015).

Performance of manufacturing firms has become an important focus of competitive advantage for manufacturing industry. Effective performance of manufacturing firms is important to build and sustain competitive advantage in product and services of the firms. Gunasekaran and Ngai, (2014); Sufian (2010) stated that the performance of supply chain was influenced by managing and integrating key element such as total quality management and information into their supply chain.

In the past decade however, companies have begun to recognize not only the need for continual quality improvement and meeting the needs of their immediate customers, but also the necessity of competing quickly and efficiently in ever changing global markets. As a result, SCM has come to the forefront as a philosophy by which firms can operate inter organizationally, and merge both strategic initiatives and upstream and downstream processes in order to achieve business excellence (Dale et al., 2013). However, thus, the general objective of this study is to investigate moderating role of supply chain adaptability on the relationship between financial flow risks and performance of manufacturing firms in Kenya.

Statement of the Problem

The past decades have witnessed growth and expansion in supply chains, with the aim to increase productivity, lower costs and fulfill demands in emerging markets. The increasing complexity in a supply chain hinders visibility and consequently reduces one's control over the process (Posadas, 2000). Cases of service delivery disruption, as is common with many Government departments, have shown that a risk event occurring at one point of the supply chain can greatly affect other aspects of the system, if the disruption is not properly controlled 5 (Palas and Wood, 2009). Supply chain management thus faces a pressing need to maintain the expected output of the system in risk situations (Musa, 2012). To achieve this, there is a need to identify potential risks and evaluate their impacts, and at the same time design risk mitigation policies to locate and relocate resources to deal with risk events.

According to the data released by the Kenya National Bureau of Statistics in 2014, Gross domestic product at market price contributed by manufacturing firms has been: 9.8% in 2010, 9.6% in 2011, 9.5% in 2012, 8.9% in 2013 and employment has moved from 261,700 in 2010, 270,200 in 2011, 271,000 in 2012 to 280,300 in 2013. The role of the manufacturing sector in Vision 2030 is to create employment and wealth. The sector's overall goal in the millennium development goals (MDG) is to increase its contribution to the GDP by at least 10% per annum over the medium term period 2013 - 2017 as envisaged in the Vision 2030 and propel Kenya towards becoming Africa's industrial hub.

In the context of the manufacturing industry, the challenges are diverse: short shelf life and perishability, competition from imports, increased consumer safety and health concerns (RoK, 2014). The short shelf life and perishability of products along with the challenges of infrastructure

pose a serious threat to manufacturing firms. Secondly, consumer concerns on environmental and welfare issues have put further pressure on manufacturers to ensure products are produced sensitively and safely. The other problem is the slow growth in the overall industry due to major increase in Kenyan imports of consumer-ready (KAM, 2015).

The value of imports is projected to continue increasing over the next five years to over $ 400 million (World Bank, 2014). Local manufacturers are no longer the dominant source of supply to consumers. A number of manufacturing firms are closing down creating massive loss of jobs resulted in slower economic growth (KAM, 2015).According to Samir and Aman (2010), management of supply chains requires speed, accurate and intelligent decision making to cope with the complex dynamic competition and uncertainty from external demands and variables. In order to attain that, several strategies exist towards supply chain risk management (Tang & Musa, 2011).

In addition, although several studies have been conducted in the area of manufacturing, none has addressed the financial flow risks and performance of manufacturing firms in manufacturing firms as moderated by supply chain adaptability in greater Nairobi, Kenya. The risks and challenges manufacturing firms face differ from one country to another. One country's risks and challenges may not be another country's risks and challenges. Therefore, the purpose of the study was to establish the moderating role of supply chain adaptability on the relationship between financial flow risks and performance of manufacturing firms in Kenya.

Objectives of the Study

The study was guided by the following objectives;

i. To analyze the effect of financial risks on performance of manufacturing firms in Kenya.
ii. To determine the moderating role of supply chain adaptability on the relationship between financial flow risks and performance of manufacturing firms among the manufacturing firms in Kenya.

LITERATUTRE REVIEW

Theoretical Framework

Resource Based View theory

The resource-based theory of the firm (RBV) and the interrelated capabilities approach which represent a dominant stream of research in strategic supply chain management over the last decade have not been prominent in the supply chain enablers' literature. Provides a critical review of the literature on the RBT and suggests areas where it can be applied to strategically-oriented performance of manufacturing firms research (Kraaijenbrink *et al.,* 2010). It describes the resource-based theory of the firm, its major assumptions, and its implications for strategic actions. Also discusses other areas of research where the RBV have been applied. Illustrates how the RBV represents the underlying theoretical support for one of the central propositions of strategic supply chain management: that a distinctive supply chain enabler's capability is a source of sustainable competitive advantage and superior performance (Barney *et al.,* 2001).

This study therefore adopts the resource based view theory which was introduced by Wernefrlt (1984) and Barney (1991). The theory holds that organizational performance is determined by the manner in which firms deploy, manage and position their internal resources and capabilities. These resources need in valuable, rare and imperfectly imitable and not substitutable.

Resources and capabilities are a bundle of tangible and intangible assets that include information and knowledge the firm controls, its management skills and the organizations routines and processes (Barney, 1991). The RBV takes the company as the primary unit of analysis and differences in performance between firma are due to difference in the way firm resources and capabilities are employed.

According to Ni (2006), viewing supply chain relationships as resources satisfies all four resource criteria in the resource-based view perspective, namely (Barney, 1991): value; rareness; uniqueness (inimitability); and non-substitutability. Intangible resources have become especially important in real-life market settings, with heterogeneous demand across and within industries, the existence of information asymmetries, and heterogeneous and not perfectly mobile resources (Hunt & Morgan, 1995). If today's economy is really a network economy (Barabasi, 2003), and most of the competition takes place across network-embedded companies and their corresponding networks then relationships can be viewed as key resources (Johnson & Selnes, 2004), and their management is thus a key source of competitive advantage leading to a favourable market position and financial performance.

Relationships may be seen as a type of intangible, non-price factors and source of firm competitiveness. They are the most important sources of competitive advantage of the firm which directly and indirectly influence the position and performance of the firm in international markets (Raskovic & Morec, 2013). Within a supply chain perspective, and particularly related to buyer-supplier relationships, Hunt & Davis (2008) have called for the employment of the resource-advantage theory perspective in better understanding the competitive advantage-building nature of buyer-supplier relationships and their management.

Resource Based View Theory Resource based view aspired to explain the internal sources of a firm's sustained competitive advantage (Kraaijenbrink, Spender, & Groen, 2010). The Resource Based View (RBV) of the firm postulated that, resources internal to the firm were sources of competitive advantage (Tukamuhabwa, Eyaa, & Derek, 2011). Such resources were valuable, rare, unique and difficult to substitute. Resources believed to be valuable were those that were capable of facilitating conception or implementation of strategies that improved performance, exploited market opportunities or neutralized impending threats (Barney & Clark, 2007).

The two assumptions for RBV theory were, resources and capabilities were heterogeneously distributed among firms; and resources and capabilities were imperfectly mobile, which made firms‟ differences remained stable over time (Karia, & Wong, (2011).Every firm was different (heterogeneous) from other firms in terms of the resources and capabilities a firm possesses or accesses. These differences differentiated one firm from another and a firm's success was due to its firm-specific (idiosyncratic) resources (Karia, & Wong, 2011). Accordingly, individual resources, competencies and capabilities of the organization were a bundle of the firm's resources or the essence of the resource-based view (Karia, & Wong, 2011).

For 28 instance, in supply chain business, a resource is described as a basic element or a prerequisite for the development and operation of supply chain; and it is required for building up a firm's capabilities (Aldin, Kolarov, Valentia, Wayne & Mrlin, 2004). The resource-based view (RBV) of firms mainly emphasized their internal strengths and weaknesses, in contrast to industrial organization economics which focused on firms' external opportunities and threats Shang & Marlow (2005), because when the external environment is unstable, a firm's own resources and capabilities may be easier to control (Shang & Marlow, 2005).

The resource focused perspective contends that a firm was a collection of tangible and intangible resources (Kraaijenbrink, 2010). This collection was unique to each firm so that each firm could be considered different (heterogeneous) from each other within the same industry i.e. no two companies possess the same experiences, or had acquired the same assets or skills or built the same organizational culture (Barney & Clark, 2007). Such differential endowment of resources among firms was the ultimate determinant of strategic decisions (Shang & Marlow, 2005).

Ganotakis and Love (2010) used the RBV to explain the importance of supply chain management to a firm. According to Ganorakis and Love, (2010), supply chain flexibility and efficiency was considered to be a source of competitive advantage for entrepreneurial firms. Ownership of firm-specific assets enabled a company to develop a competitive advantage. They also found out that a company's competitive advantage was derived from the company's ability to assemble and exploit an appropriate combination of resources (Ganotakis & Love 2010).

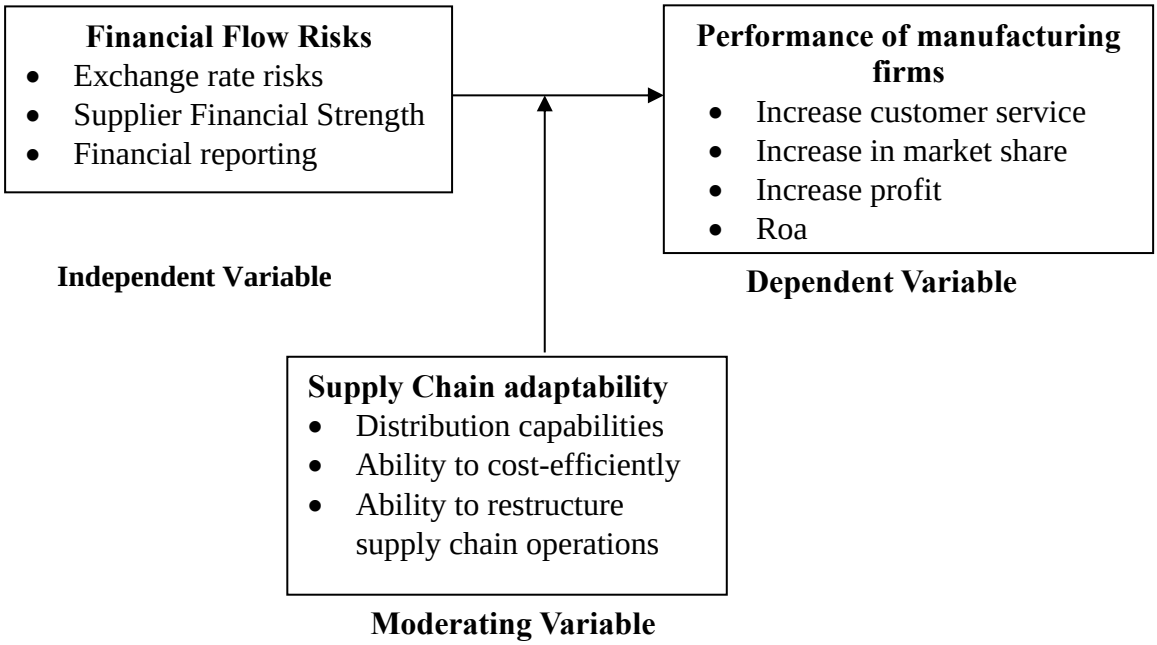
In their study, Wong and Karia, (2010), confirmed that, RBV focused on the idea of costly-to-copy attributes of the firm as sources of business returns and the means to achieve superior performance and competitive advantage. The RBV had been used in the strategic literature for the analysis of business performance. It was important to highlight that the RBV had recently been employed in supply chain management studies to examine the supply chain resources and capabilities on performance of manufacturing firms (Lai, 2008; Yang, 2009). Lai, (2008) from supply chain literature, argued that the RBV theory was an appropriate theory for supply 29 chain and supply chain management research.

These studies found supply chain resources and capabilities to be significantly positive related to firm performance. Some literature used RBV theory to examine the impact of information flow on 3PL providers competitive advantage (Lai, 2008) whiles others examined the effects of supply chain capabilities on firm performance (Yang, 2009). The study apply resource based view theory to explain financial risk as resources of the firms that if mitigated effectively will enhance performance of manufacturing firms

Conceptual Framework

A review of literature in the area of supply chain management has presented various research approaches used in the analysis of supply chain risk management. What is also clear is the lack of exhaustive literature in the area of supply chain management. The complex and interconnected nature of supply chain further necessitates the study of supply chain risk management as well as the research methods and approaches used in its analysis. This lays credence to informing the research methods and approaches to be used in this stud Conceptual framework refers to a diagrammatic set of interrelated ideas on a particular phenomenon and it’s characterized by cause and effect relationships which helps interpret more and hence making it easily understandable. This makes it more straightforward and also easily predictable (Svinicki, 2010).

Fig 2.1 shows a conceptual framework depicting the relationship between the financial flow risks, and performance of manufacturing firms moderated by supply chain adaptability guiding this study.



Financial Flow Risks

Financial flow refers to the cash that is received and spent by an organization (Musa, 2012). The financial position of an enterprise is disrupted when a company is unable to settle debts as well as when it engages in investments that are improper. Issues such as credit uncertainties caused, mainly by clients who default their debts in an organization can lead to variations in the incomes of a firm (Rao & Goldsby, 2009).These can lead to delays in the payment of the suppliers and other partners along the supply chain (Musa, 2012; Rao & Goldsby, 2009).

Financial risk refers to inflation, interest rate level, currency fluctuations and stakeholder requests (Manuj and Mentzer 2008; Trkman and McCormack 2009; Hahn and Kuhn 2012). These kinds of risk engender price fluctuations in supply activities, operation planning, labour disputes, demand variability and SC disruptions. For instance, inflation leads to continuously increased prices that irritate consumers who place the blame on producers. This is a reason for demand variability (Parks 1978). Firms try to avoid raising prices and in doing so they prefer to lock material costs with long-term contracts, although this hurts the supplier. Inflation also disrupts operations planning.

Companies that wish to plan ahead encounter difficulty in the presence of uncertainty. They may have problems with budgeting since they are unsure about costs. Moreover, since the inflation rate is high, employees request higher wages from employers that engender labour disputes. Regarding interest rates, Zhi (1995) argued that as it increases, banks charge more for business loans, resulting in reducing the ability of customers to buy products and services, thus raising demand risk. This phenomenon can cause price fluctuations in supply activities (Zhi 1995)

Njaaga (2013) defines exchange rate as the risk that the operations of a business will be affected by the changes in the rates of exchange. Musa (2013) defines exchange rate volatility as the movement of exchange rate that stems from fluctuations in currency. Rao (2006) explains that most firms manage the risk of exchange rate through hedging. Hedging involves taking a contract that will either rise or fall in value and then offsetting the fall or rise in value of an existing position (Eiteman, 2007). Hedging therefore helps in the reduction of the position risks that are caused by the movements of the exchange rates.

A study by Musa (2013) shows that manufacturing firms in Kenya are more likely to be affected by the volatility in exchange rate risks since it is an import oriented country. He further explains

that the fact that most manufacturing firms import raw materials, consumer goods and capital goods, there is need to manage the foreign exchange market. The exchange rates in an economy plays a very vital role since it affects the domestic price levels, the allocation of resources and investment decisions as well as the profitability of the goods and services that are traded by a company (Musa, 2013; Njaaga, 2013).

The volatility of the exchange rates affects the prices of the finished goods that are exported and also the cost of the inputs that are procured from a global perspective (Musa, 2013; Irene, 2011). The concept of globalization has encouraged international purchasing as firms seek to increase their competitive advantage and also leverage on economies of scale. Although global sourcing has significantly reduced the cost of buying, thereby contributing to profitability, it has also led to variability in the cash flows of firms due to fluctuations in foreign exchange risks (Afza & Alam, 2014). Results of a study carried out by Irene (2011) shows that there is negative relationship between foreign exchange risk and the financial performance of a firm. Exchange rate risk affects the outsourcing decisions of a firm as volatile currency affects the budget allocation for offshore initiatives (Zonnov, 2006).

Supply Chain adaptability

Supply chain adaptability is defined as the ability of the firm to sense long-term, fundamental changes in the supply chain and market environment (e.g. economic progress, political and social change, demographic change, radical technological advances), and to respond to such changes by flexibly adjusting the configuration of the supply chain (e.g. developing new supply bases, relocating production facilities, outsourcing). This conceptualisation of flexibility as a dimension of supply chain adaptability is in line with Christopher and Holweg (2011), who define structural flexibility as the ability of firms to build flexible options into the design of their supply chains in response to fundamental shifts in multiple variables that determine the supply chain and market environment. Structural sensing is crucial for supply chain adaptability, as effective structural change requires mapping and understanding of relevant processes in the entire value chain (Aitken, Christopher, and Towill 2002).

Supply chain adaptability can result in significant cost savings. Structural flexibility (e.g., outsourcing) encourages the firm to improve responsiveness (Christopher & Holweg, 2011; Lee, 2004). Supply chain adaptability can also improve performance of manufacturing firms (e.g., Lee, 2004; Whitten et al., 2012). There are sufficient arguments to support that supply chain adaptability directly impacts performance of manufacturing firms. However, one cannot ignore the possibility of the indirect effect of supply chain adaptability under the mediating effect of supply chain agility.

The agile capabilities of supply chain network are also due to adaptable capabilities, such as, collaboration with third-party logistics (3PL) and other supply chain partners to reduce lead time and improve delivery of products/services. Supply chain alignment can directly impact performance of manufacturing firms but particularly in the HSC network design, the mediating role of leadership cannot be ignored. Supply chain adaptability stems from flexibilities produced by structural and relational investments and choices (Stevenson & Spring, 2007), whereas product innovation capability is more focused and specific. As such, supply chain adaptability provides a context for the development and refinement of a firm's product innovation capability.

Performance of manufacturing firms

The right side of the hypothesised model – SC performance – is used to examine the degree of risk in the SC. Traditionally cost is recognised as a key performance indicator for assessing the efficiency of a supply chain. It is a key objective in supply chain management as minimising cost – and waste – results in a better performing supply chain. However, this measure tends to be

historical and does not demonstrate the current situation of the business environment and future performance (Quang et al. 2016).

Some authors have suggested Return on Investment (ROI) and Growth as a 'solution' for SC performance measurements. Quang et al. (2016) argued that ROI fails to provide an objective assessment of smaller companies that may be owner-managed. Moreover, according to Andersen and Jordan (1998), this variable is useful to compare similar firms within their sector, but restricts cross-sector comparisons. Likewise, growth measures, e.g. revenue growth, profitability growth and productivity growth, have become meaningless since comparing enterprises in different sectors – such as an ineffective firm operating in the software industry (a high growth sector) – will have higher revenue growth/profitability growth, etc., than effective apparel enterprises.

Naturally, financial measures still have an important role. Yet, in attempting to have a comprehensive performance scale, it is necessary to be balanced with more contemporary, intangible and strategic-oriented measures. Kaplan and Norton (1992) argued that the contemporary approach emphasises on how short- and long-term measures affect firm performance. This disputation led to the development of two concepts: • Lagging indicators describe what has actually happened in the past, e.g. financial variables. • Leading indicators provide an early warning of what might happen in the future. An example of such is customer oriented variables, e.g. customer satisfaction, delivery performance, lead times, flexibility and quality, or human resource-oriented variables, e.g. employee satisfaction and morale.

Developed by Kaplan and Norton (1992), the balanced scorecard model recognises the limitations of traditional firm performance measurement and translates a firm's strategy into performance objectives, particularly focusing on intangible assets such innovation, value chain, employee skills and knowledge levels, customer and supplier relationships. This new approach shifts the conventional focus on physical assets to emphasise both physical and intangible resources in a firm for a purpose of corporate long-term development in the future.

A scorecard has four balanced perspectives, including financial, customer, internal processes and innovation and learning, which are able to cover leading and lagging indicators. As such, this study defines a set of measures for SC performance based on the balance scorecard model comprising five crucial dimensions as supplier performance, internal business, innovation and learning, customer service and finance.

In attribute of performance is a set of indicators that are used to express a competitive strategy (Feng, 2017). The performance is the ability of the SC to offer products and services with good quality, on time and in precise amounts, while minimizing the costs (Green Jr., et al., 2012). According to the SC literature review, when designing models, it is important to consider the current and emerging elements, such as globalization, always with the aim to improve specific performance indicator.

The evaluation of performance extends to all the companies that make up the SC chain to ensure their sustainable growth. For a company, it is necessary to know its performance measures and compare their standards with the competing chains. Organizational performance refers to how well an organization achieves its market oriented goals as well as its financial goals, and that's why organizations adopt suitable strategies and policies for better organizational performance (customer satisfaction, innovation and learning, and financial performance).

Typically, the research work has tended to emphasize quantitative factors to measure operational competitiveness while there are few models that capture qualitative attributes (Bhatnagar and Sohal, 2015). A SC requires analyzing performance, using assessment techniques that include not only quantitative attributes, but also qualitative attributes. As it is the case of Abu-Suleiman et al.,

who considered attributes of planning, material procurement, production, distribution, and customer service (Abu-Suleiman, et al., 2015).

Performance of manufacturing firms is measured through attributes or metrics that permit know if the strategic goals provide information and direct feedback of the processes involved in the SC. The attributes are also the basis to identify and evaluate alternatives that will help achieve decision criteria to improve the business processes (Chan, 2016). Performance measurement can be defined as a process of quantifying the efficiency and effectiveness of an action (Gunasekaran and Kobu, 2017).

To measure the SC performance it is important to monitor the viability of strategies, and also identify the performance measurement method, but each implementation must be taking into account its own specific variables (Gunasekaran, et al., 2015). All participants in the supply chain should be involved and committed to common goals, such as customer satisfaction and enhanced competitiveness (Tang and Tomlin, 2016). Although the configuration of supply chains may not undergo changes at a great scale as a result of climate change, adjustments should be made which could reduce vulnerabilities while offering a competitive advantage. These adjustments stem from the different level of vulnerability their building blocks present to climate change hazards. Certain supply chain configurations, that will have the capacity of absorbing any negative effects attributed to climate change, could create a competitive advantage.

Empirical Review

Financial Flow Risks

With respect to financial flow "the vulnerability of financial strength of a supply chain member, may easily affect the entire supply chain network" (Tang, 2006, p. 15). Ali et. al. (2010) in their study emphasized that effective and efficient management of financial flow integration is essential to improve the performance of manufacturing firms. Popa say that "financial Supply Chain Management consists of the holistic and comprehensive activities of planning and controlling all financial processes, which are relevant within a company and for communication with other enterprises" (2013, p.142) further added "the financial supply chain is different from the physical supply chain as it deals with the flow of cash instead of goods, being a flow with an opposite direction" "Both suppliers and buyers in the supply chain should cooperate to improve the financial efficiency of the supply chain as a whole, i.e. to globally optimize the financial performance of the whole supply chain.

Therefore, in the last several decades, financial managers in the supply chain have spent great efforts in improving the cooperation between firms" (Liu, 2012, p.2). "Inventory costs due to obsolescence, markdowns and stock-outs, can be significant. Personal computers devalue by more than one percent per week. In the USA retail markdowns constitute about 20% of total retail volumes. Mismanaged supply chains, leading to excessive or mismatched inventory, are thus liable to huge financial risks. Financial risks can also present themselves through the risk of reworking stock and penalties for non-delivery of goods" (Christopher and Lee, 2004, p. 388).

Due to lack of control and visibility financial flow risk involves the inability to settle payments and improper investment. The common risks are exchange rate risk, price and cost risk, financial strength of supply chain partners and financial handling/practice (Tang and Musa, 2011, p. 13). "Disruptions experienced in current financial markets obviously are leading to previously unanticipated consequences ranging from unavailability of capital for financing capacity expansions, changing consumption preferences due to a drop in the value of retirement assets, and volatility in exchange rates" (Vakharia and Yenipazarli, 2008) further added that these disruptions

would impact almost all the links in an SC and hence, would require a simultaneous coordinated risk management effort.

Ali et. al. (2010) conducted a study that concluded that the three dimensions of Supply Chain Integration, financial flow, physical flow and information flow are positively associated with firm performance. Hence, the supply chain process integration should be focused and leveraged to achieve operational excellence and revenue growth (2010, p.216

Supply Chain adaptability

Supply chain adaptability can result in significant cost benefits. Structural flexibility (e.g. outsourcing to contract manufacturers and third-party logistics firms) improves firms' access to capacity when required, converting fixed costs into variable costs (Christopher and Holweg 2011). DHL, for example, collaborates with vehicle manufacturers, creating joint aftermarket logistics systems that share trucks and warehousing facilities. Changing suppliers, identifying new suppliers and markets, relocating production facilities, and constantly innovating in terms of products and processes can further enable firms to reduce costs. By relocating production facilities from the US to other countries and outsourcing manufacturing when structural shifts in global printer markets occurred, HP was able to reduce costs (Lee 2004).

Similarly, Microsoft and Flextronics managed to significantly reduce costs by flexibly adapting supply chain structures for the Xbox (Lee 2004). Supply chain adaptability can also affect operational performance. Developing new supply bases and markets and relocating production facilities can safeguard quality levels and ensure delivery and steady service in times of structural shifts in markets and economies (Lee 2004; Whitten, Green, and Zelbst 2012). Achieving structural flexibility through diversified manufacturing and sourcing footprints enables firms to improve delivery and service level performance. For example, manufacturers can make or source base demand in low-cost countries and shift production of surge demand to countries closer to key markets, resulting in shorter lead times and enhanced ability for delayed configuration (Christopher and Holweg 2011).

During the launch of the Prius in the US, Toyota was able to reduce inventory costs and improve delivery performance by flexibly adapting its distribution network (Lee 2004). GAP managed to increase delivery performance by adapting its supply chains to the nature of markets for products (Lee 2004). Moreover, relocating production facilities or switching suppliers may be needed in light of regulatory (e.g. ban of products) and political shifts to safeguard stable quality, delivery and service. Innovativeness promotes short development lead times, reduced design cycles and flexible design capabilities: all of which help in launching innovative products and accessing new markets at the right time.

Supply chain adaptability can also be considered vital under high product complexity. A high number of product variants and components is likely to result in different organisational requirements for manufacturing, quality assurance and information management (Jacobs and Swink 2011), making resources within the existing supply chain less likely to be sharable across products. Thus, adaptive capabilities become more beneficial for firms in their efforts to improve delivery performance, enhance service levels, and optimise quality and cost of diverse products. HP, for example, has outsourced basic production capacities to contract manufacturers, but used its own factories for late configuration and production of complex products (Christopher and Holweg 2011).

Supply chain adaptability includes the ability to cost-efficiently tailor the supply chain structural configuration to a variety of products to get the best manufacturing and distribution capabilities

for each offering (Lee 2004). The ability to restructure supply chain operations can result in reduced cost and increased profitability under high product complexity (Meeker, Parikh, and Jhaveri 2009). Multi-firm collaborative organisational forms enabling innovative processes and strategies and response to uncertainty over emerging properties and changes in customer requirements are considered especially effective under high product complexity (Hobday 1998).

In general, supply chain adaptability is considered to be particularly essential in an environment characterised by shortening technology and product life cycles going along with growing demand for product variety (Whitten, Green, and Zelbst 2012). Cisco provides a good example of increased benefits of supply chain adaptability under high product complexity (Lee 2004). Specifically, Cisco produces and sells a variety of products, ranging from standard, high-volume networking products to highly customised, low-volume products. Tailoring its supply chain structural configuration to different target markets and customers, Cisco was able to secure profits and gain market share. This included, for example, flexibly changing suppliers, partially outsourcing, manufacturing and commissioning contract manufacturers when needed.

RESEARCH METHODOLOGY

The research design was explanatory survey research design. This study uses a positivism research philosophy. The target population of this study were 682 registered manufacturing firms in Nairobi County (KAM, 2018). The study targeted management's team in supply chain who included Heads of Department and Purchasing Officers because they are perceived to have more knowledge and information of any activities that involve supply chain in firm. The sample size was obtained using coefficient of variation. Using Nassiuma, (2000) formula, a sample of 169 firms were selected where the researcher selected 2 HODs (finance and supplier chain) this gives sample of 338. The study then used random sampling technique to select the firms sampled. This study used questionnaires to collect data relevant to the study. Quantitative data collected was analyzed using descriptive statistical techniques which were frequencies, mean, standard deviation. The findings were presented by use of frequency distribution tables that gave record of a number of times a score or a response occurs. Collected data was analyzed using multiple regressions and correlation analysis, the significance of each independent variable was tested at a confidence level of 95%.

DATA ANALYSIS, PRESENTATION AND INTERPRETATION

The study distributed 338 questionnaires to 169 manufacturing firms. Out of the 338 questionnaires, 324 were returned. However, of the 324 returned, a total of 318 were reasonably and adequately completed representing approximately 94% response rate. The response rate was deemed satisfactory as suggested by Fowler (1993) who recommends 75% as a rule of the thumb for minimum responses. Further, regarding the works of Jaworski and Kohli, (1993) and Prasad *et al*. (2001), this response rate is considered satisfactory and is comparable to research on similar topics in marketing.

Descriptive Statistics for Study Constructs

Respondents were asked to provide information regarding their level of agreement to items concerning the financial risk, supply chain adaptability and firm performance.

Financial risk

Financial risk refers to the cash that is received and spent by an organization (Musa, 2012). Table 1 illustrates the results on financial risk. Basing on the results, the firms have adequate visibility

into the financial stability of their entire supplier community much less their key suppliers (mean = 4.34, SD = 0.619). As such, the manufacturing firms evaluate their suppliers financially to determine their financial status before engaging them in their organization. This is in line with Kleindddorfer and Saad (2005) who argue that a company that deals with suppliers who have financial hardships may result to inefficiencies along the supply chain. Furthermore, the firms have considered the value of a reliable bankruptcy risk score to assess supplier financial condition (mean = 3.8, SD = 0.987). Consequently, the firms reduce the risk of getting into partnership with suppliers that are financially unsound.

Besides, the firms have acquired financial reports from a leading provider on a case-by-case basis (mean = 3.73, SD = 1.2). As well, the firms rely on predictive financial stability reporting that is provided by a major credit rating agency on thousands of potential suppliers (mean = 3.69, SD = 1.419). The implication is that the management of financial failure risk is a top priority for the manufacturing firms. Moreover, the respondents confirmed that the firms' financial health should be evaluated more frequently (mean = 3.61, SD = 1.017). However, there is uncertainty as to whether the firm have teamed up with a financial partner to manage supplier financial risk (mean = 3.43, SD = 1.103). Similarly, there is doubt if firms have ongoing financial risk monitoring to alert financially distressed suppliers while there's still time to regroup (mean = 3.350, SD = 1.001). In general, the findings on financial risk summed up to a mean of 3.607, standard deviation of 0.778, skewness -0.793 and kurtosis 0.661.

Table1: Financial risk

n=318	Mean	Std. Dev.	Skewness	Kurtosis
The firm has adequate visibility into the financial stability of their entire supplier community much less their key suppliers	4.340	0.619	-0.537	0.225
The firm has acquired financial reports from a leading provider on a case-by-case basis	3.730	1.200	-0.964	0.016
The firm relies on predictive financial stability reporting that is provided by a major credit rating agency on thousands of potential suppliers	3.690	1.419	-0.730	-0.784
The firm has teamed up with a financial partner to manage supplier financial risk	3.430	1.103	-0.291	-0.529
The firm has financial health should be evaluated more frequently.	3.610	1.017	-0.320	-0.643
The firm has consider the value of a reliable bankruptcy risk score to assess supplier financial condition	3.800	0.987	-0.438	-0.245
The firm has ongoing financial risk monitoring to alert financially distressed suppliers while there's still time to regroup	3.350	1.001	-0.054	-0.642
Financial risk	**3.607**	**0.778**	**-0.793**	**0.661**

Supply chain adaptability

Supply chain adaptability refers to the ability of the firm to sense long-term, fundamental changes in the supply chain and market environment and to respond to such changes by flexibly adjusting the configuration of the supply chain. The study therefore found it necessary to establish supply chain adaptability among the manufacturing firms. The results are as presented in table 2. The findings of the study have shown that the firms have supply chain incentive creation (mean = 4.260, SD = 0.564). They also maintain excess capacity in productions, storage, handling and/or transport (mean = 4.25, SD = 0.623). Besides, there is joint efforts share risk-related information

(mean = 4.18, SD = 0.745). Moreover, the firms have joint efforts to prepare supply chain continuity plans (mean = 4.17, SD = 0.671). Also, the firm imposes contractual obligations on suppliers (mean = 4.15, SD = 0.859). Further, the firms drop specific products, markets, suppliers, service providers or customer organizations (mean = 4.12, SD = 0.787). As well, there are joint efforts with suppliers to improve supply chain visibility and understanding (mean = 4.12, SD = 0.712). In addition, the firms increase stockpiling and the use of buffer inventory (mean = 4.09, SD = 0.831). Finally, the firms use different distribution channels (mean = 4.00, SD = 0.792). Generally, the results on supply chain adaptability summed up to a mean of 3.566, standard deviation of 0.677, skewness -0.961 and kurtosis 0.873.

Table 2: Supply chain adaptability

n=318	Mean	Std. Deviation	Skewness	Kurtosis
The firm drops specific products, markets, suppliers, service providers or customer organizations	4.120	0.787	-0.885	0.779
There is joint efforts with suppliers to improve supply chain visibility and understanding	4.120	0.712	-0.278	-0.644
There is joint efforts to share risk-related information	4.180	0.745	-0.665	0.200
The firms has Joint efforts to prepare supply chain continuity plans	4.170	0.671	-1.158	3.780
The firm uses different distribution channels	4.000	0.792	-0.799	1.421
The firm increases stockpiling and the use of buffer inventory	4.090	0.831	-0.576	-0.058
The firm maintains excess capacity in productions, storage, handling and/or transport	4.250	0.623	-0.856	3.485
The firm imposes contractual obligations on suppliers	4.150	0.859	-0.619	-0.438
The firm has supply Chain Incentive Creation	4.260	0.564	-0.344	1.305
Supply chain adaptability	3.566	0.677	-0.961	0.873

Firm Performance

This section of the analysis highlights the results on firm performance. Basing on the findings in table 3, there is a degree of satisfaction concerning the sales margin (mean = 4.4, SD = 0.558) and the growth in profits (mean = 4.28, SD = 1.208).Additionally, the customer retention rate is as high as or higher than that of competitors (mean = 4.18, SD = 0.816).Moreover, the products supplied by the firm are considered to be of high quality (mean = 4.05, SD = 0.804).Consequently, the organization has good reputation in the sector (mean = 4.05, SD = 0.624).The firms' customers are satisfied with the products and services of the firm (mean = 4.03, SD = 0.779) though the degree of satisfaction with the grown in sales is minimal (mean = 3.44, SD = 1.274).Finally, there is no satisfaction concerning financial profitability (mean = 1.07, SD = 0.259). The findings on firm performance summed up to a mean of 3.6878, standard deviation of 0.42973, skewness -0.736 and kurtosis 1.007.

Table 3: Firm Performance

N=318	Mean	Std. Deviation	Skewness	Kurtosis
Our customers are satisfied with the products and services of our firm.	4.03	0.779	-0.94	1.093
Our customer retention rate is as high as or higher than that of our competitors.	4.18	0.816	-0.433	-1.117

Our organization has good reputation in the sector.	4.05	0.624	-0.168	0.046
The products supplied by the firm are considered high quality.	4.05	0.804	-0.33	-0.455
Degree of satisfaction concerning financial profitability	1.07	0.259	3.33	9.14
Degree of satisfaction concerning growth in sales	3.44	1.274	-0.711	-0.368
Degree of satisfaction concerning growth in profits	4.28	1.204	-1.822	2.279
Degree of satisfaction concerning sales margin	4.4	0.558	-0.962	5.341
	3.68			
Firm Performance	78	0.42973	-0.736	1.007

Factor analysis

In order to assess the construct validity, items were examined by principal components extraction with varimax rotation. The Kaiser Meyer- Olkin (KMO) measure of sampling adequacy was used to compare the magnitude of the observed correlations coefficients and that of partial coefficient correlations. KMO values below 0.5 do not permit the use of factor analysis. The factor loading for financial risk, supply chain adaptability and firm performance as shown below:

Financial risk

Factor analysis was conducted to make sure that the items belong to the same construct. Table 4 illustrates the factor analysis for financial risk. As shown in the table, there were no exceptions, as all variables scored above the threshold of 0.5. The criterion for communality was fulfilled by financial risk items notably, the firm has adequate visibility into the financial stability of their entire supplier community much less their key suppliers, the firm has acquired financial reports from a leading provider on a case-by-case basis, the firm relies on predictive financial stability reporting that is provided by a major credit rating agency on thousands of potential suppliers, the firm has teamed up with a financial partner to manage supplier financial risk, the firm has financial health should be evaluated more frequently, the firm has consider the value of a reliable bankruptcy risk score to assess supplier financial condition, the firm has ongoing financial risk monitoring to alert financially distressed suppliers while there's still time to regroup were retained for further data analysis. Additionally, the first factor accounted for 25.236% of the total variance and the second factor 46.74% of the total variance and the third factor 66.489. The KMO Measure is an index for comparing the magnitude of the observed correlation coefficients to the magnitude of the partial correlation coefficients. As shown in table 4, KMO was greater than 0.5, and Bartlett's Test was significant.

Table 4: Financial risk

	1	2	3
The firm has adequate visibility into the financial stability of their entire supplier community much less their key suppliers	0.718		
The firm has acquired financial reports from a leading provider on a case-by-case basis	0.818		
The firm relies on predictive financial stability reporting that is provided by a major credit rating agency on thousands of potential suppliers	0.638		
The firm has teamed up with a financial partner to manage supplier financial risk	0.686		
The firm has financial health should be evaluated more frequently.		0.771	
The firm has consider the value of a reliable bankruptcy risk score to assess supplier financial condition		0.914	
The firm has ongoing financial risk monitoring to alert financially distressed suppliers while there's still time to regroup			0.718
Rotation Sums of Squared Loadings			
Total	2.271	1.935	1.77

% of Variance	25.236	21.504	19.749
Cumulative %	25.236	46.74	66.489
KMO and Bartlett's Test			
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		0.577	
Bartlett's Test of Sphericity	Approx. Chi-Square	1239.043	
	Df	36	
	Sig.	0.000	

Extraction Method: Principal Component Analysis.
Rotation Method: Varimax with Kaiser Normalization.

Supply chain adaptability

Factors with factor loadings of above 0.5 are excellent and should be retained for further data analysis. Supply chain adaptability items namely the firm drops specific products, markets, suppliers, service providers or customer organizations, there is joint efforts with suppliers to improve supply chain visibility and understanding, there is joint efforts to share risk-related information, the firms has Joint efforts to prepare supply chain continuity plans, the firm uses different distribution channels, the firm increases stockpiling and the use of buffer inventory, the firm maintains excess capacity in productions, storage, handling and/or transport, the firm imposes contractual obligations on suppliers and the firm has supply Chain Incentive Creation were retained for further data analysis. Additionally, the first factor accounted for 30.439% of the total variance; the second factor accounted for 52.902% of the total variance and the third factor 70.579% of the total variance. Sampling adequacy was tested using the Kaiser- Meyer- Olkin Measure (KMO measure) of sampling adequacy. As evidenced in table 5, KMO was greater than 0.5, and Bartlett's Test was significant.

Table 5: Supply chain adaptability

	1	2	3
The firm drops specific products, markets, suppliers, service providers or customer organizations	0.744		
There is joint efforts with suppliers to improve supply chain visibility and understanding	0.588		
There is joint efforts to share risk-related information	0.635		
The firms has Joint efforts to prepare supply chain continuity plans	0.849		
The firm uses different distribution channels	0.803		
The firm increases stockpiling and the use of buffer inventory		0.783	
The firm maintains excess capacity in productions, storage, handling and/or transport		0.697	
The firm imposes contractual obligations on suppliers		0.788	
The firm has supply Chain Incentive Creation			0.859
Total Variance Explained: Rotation Sums of Squared Loadings			
Total	3.044	2.246	1.768
% of Variance	30.439	22.463	17.677
Cumulative %	30.439	52.902	70.579
KMO and Bartlett's Test			
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.			0.671
Bartlett's Test of Sphericity	Approx. Chi-Square		1629.768
	df		36

	Sig.	0

Extraction Method: Principal Component Analysis.
Rotation Method: Varimax with Kaiser Normalization.

Firm Performance

Table 6 shows that the factor loadings results were above 0.5. This implies that all the factors were retained for further analysis. All firm performance items namely, our customers are satisfied with the products and services of our firm, our customer retention rate is as high as or higher than that of our competitors, our organization has good reputation in the sector, the products supplied by the firm are considered high quality, degree of satisfaction concerning financial profitability, degree of satisfaction concerning growth in sales, degree of satisfaction concerning growth in profits and degree of satisfaction concerning sales margin were later used for further analysis. To sum up, the first factor accounted for 33.561% of the total variance and the second factor accounted for 54.388% of the total variance and the third factor 70.57%. The Kaiser-Meyer-Olkin Measure value (0.614) was above 0.5 hence acceptable. Also, the Bartlett's Test was significant.

Table 6: Firm Performance

		1	2	3
Our customers are satisfied with the products and services of our firm.		0.746		
Our customer retention rate is as high as or higher than that of our competitors.		0.785		
Our organization has good reputation in the sector.		0.842		
The products supplied by the firm are considered high quality.		0.716		
Degree of satisfaction concerning financial profitability			0.883	
Degree of satisfaction concerning growth in sales			0.838	
Degree of satisfaction concerning growth in profits			0.678	
Degree of satisfaction concerning sales margin				0.834
Rotation Sums of Squared Loadings				
Total		3.02	1.874	1.456
% of Variance		33.561	20.827	16.182
Cumulative %		33.561	54.388	70.57
KMO and Bartlett's Test				
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.			0.614	
Bartlett's Test of Sphericity	Approx. Chi-Square		1409.599	
	Df		36	
	Sig.		0.000	

Extraction Method: Principal Component Analysis.
Rotation Method: Varimax with Kaiser Normalization.

Correlation analysis

The results of the correlation analysis are presented in table 7. The correlation between financial risk and firm performance was significant, $r = 0.655$, $P < 0.01$.

Table 7: Correlation analysis

	FP	financial risk
FP	1	
Legal risk	.673**	
	0.000	
Financial risk	.655**	1
	0.000	

Hypothesis Testing

The hypothesis of the study stated that financial risk has no significant effect on firm performance. However, the study findings showed that financial risk had coefficients of estimate which was significant basing on β_3= 0.263 (p-value = 0.000 which is less than α = 0.05) implying that we reject the null hypothesis stating that financial risk has no significant effect on firm performance. The implication is that there is up to 0.263-unit increase in firm performance for each unit increase in financial risk. Furthermore, the effect of financial risk was stated by the t-test value = 3.799 which implies that the standard error associated with the parameter is more than the effect of the parameter.

Table 8: Coefficient of Estimates

		Unstandardized Coefficients		Standardized Coefficients			Correlations		Collinearity Statistics	
		B	Std. Error	Beta	t	Sig.	Zero-order	Partial	Tolerance	VIF
(Constant)		1.44	0.116		12.449	0				
financial risk		0.198	0.052	0.263	3.799	0	0.674	0.194	0.261	3.836
R			.733a							
R Square			0.537							
Adjusted R Square			0.532							
Std. Error of the Estimate			0.40635							
Change Statistics	R Square Change		0.537							
	F Change		107.775							
	df1		4							
	df2		371							
	Sig. F Change		0.000							

Dependent Variable: firm performance

Moderating Effect Supply chain adaptability on financial risk and Performance of manufacturing firms

The objective of the study was to establish the moderating effect of supply chain adaptability on the relationship between financial risk and performance of manufacturing firms in Kenya. In order to confirm supply chain adaptability making moderation effect on the relationship between financial risk and performance of manufacturing firms. The following steps were carried out; First, the study standardized all variables to make interpretations easier afterwards and to avoid multicollinearity. Second, the study fitted a regression model (model 3) predicting the outcome

variable performance of manufacturing firms from the financial risk. The effects as well as the model in general (R^2) should be significant. Third, the study added the interaction effect (SCA*SCR) to the previous model (model 4, 5 and 6) and check for a significant R^2 change as well as a significant effect by the new interaction term. If both are significant, then moderation is occurring. If the predictor and moderator are not significant with the interaction term added, then complete moderation has occurred. If the predictor and moderator are significant with the interaction term added, then moderation has occurred (Marsh *et al*, 2013), however the main effects are also significant.

H_{01c} stated that supply chain adaptability does not moderate the link between financial risks practices and performance of manufacturing firms. However, the regression results showed that supply chain adaptability positively moderated the relationship between financial risks and performance of manufacturing firms (β = 0.419, ρ< .05), rejecting the null hypothesis. The moderating effect was also revealed by change in R squared ($R^2\Delta$ .015) and F change (F Δ =12.541) (This suggests that supply chain adaptability facilitates the relationship between financial risks and performance of manufacturing firms. Supply chain adaptability brings on board the skills and competences required to identify the potential risks manufacturing firms are likely to face and make it plausible for them to aggregate the risks and action plans for implementing decisions about the identified risks. The resulting outcome is an improvement in the performance of manufacturing firms.

Table 9: Moderating effect supply chain adaptability on financial risks and organizational performance

	Model 1 B(Se)	Model 2 B(Se)	Model 3 B(Se)	Model 4 B(Se)	Model 5 B(Se)
(Constant)	0.001(.042)	0.006(.038)	0.006(.155)	(-0.012)(.036)	(-0.006)(.035)
Zscore(FR)	0.29(.067)**	0.197(.062)**	0.156(2.479)*	0.155(.061)	(-0.081)(.089)
Zscore(FR_SCA)					0.419(.118)**
Model Summary					
R	0.817	0.855	0.861	0.871	0.88
R Square	0.667	0.731	0.741	0.759	0.775
Adjusted R^2	0.656	0.721	0.73	0.748	0.763
Std. Error	0.587	0.528	0.520	0.502	0.488
Change Statistics					
$R^2\Delta$	0.639	0.064	0.010	0.019	0.015
F Δ	121.464	45.116	7.152	14.528	12.541
df1	3	1	1	1	1
df2	190.000	189.000	188.000	187.000	186.000
Sig. F Δ	0.000	0.000	0.008	0.000	0.001

a Dependent Variable: Zscore (PERF)

**p<.01, *p.05

FR=Financial risks , SCA=Supply chain adaptability and PERF= Performance of manufacturing firms

Source: Research Data (2019)

Summary of the Findings

Financial Risk

The results on financial risk established that firms have adequate visibility into the financial stability of their entire supplier community much less their key suppliers. Also, the firms have considered the value of a reliable bankruptcy risk score to assess supplier financial condition. Besides, the firms have acquired financial reports from a leading provider on a case-by-case basis. As well, the firms rely on predictive financial stability reporting that is provided by a major credit rating agency on thousands of potential suppliers. Moreover, the respondents confirmed that the firms' financial health should be evaluated more frequently. However, there is uncertainty as to whether the firm have teamed up with a financial partner to manage supplier financial risk. Similarly, there is doubt if firms have ongoing financial risk monitoring to alert financially distressed suppliers while there's still time to regroup.

Supply chain adaptability

The findings on supply chain adaptability indicated that the manufacturing firms have supply chain incentive creation and they maintain excess capacity in productions, storage, handling and/or transport. Besides, there is joint efforts share risk-related information. Moreover, the firms have joint efforts to prepare supply chain continuity plans and they impose contractual obligations on suppliers. Further, the firms drop specific products, markets, suppliers, service providers or customer organizations. As well, there are joint efforts with suppliers to improve supply chain visibility and understanding. In addition, the firms increase stockpiling and the use of buffer inventory. Finally, the firms use different distribution channels.

Conclusion

financial flow risk affects the performance of manufacturing firms. Particularly, financial flow risk positively influenced the firm performance because of the efforts by the firms towards maintaining their financial health and the financial stability of suppliers. Furthermore, when moderated with supply chain adaptability, there is a reduction in financial flow risk which improves the overall firm performance. That is, firms will be able to analyze the financial strength of their suppliers and consequently manage the financial flows of a firm. Also, they will not spend their firms' finances on purchases that are not necessary.

Recommendations

financial flow risk has a positive influence on the performance of manufacturing firms. It is therefore recommended for firms to have adequate visibility into the financial stability of their entire supplier community. Also, it is important for firms to rely on predictive financial stability reporting that is provided by a major credit rating agency. Moreover, it is recommended for firms to team up with financial partners to manage supplier financial risk.

Recommendations for Further Studies

This study focuses on the moderating role of supply chain adaptability on the relationship between financial risk and performance of manufacturing firms in Kenya. The emphasis of the study was on financial risk. Future scholars could also incorporate information flow risk and organization characteristic risk. In addition, the study has established that supply chain adaptability positively and significantly moderates the relationship between financial risk and firm performance. Future scholars could incorporate a mediator variable.

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