

**SUPPLY CHAIN INTEGRATION AND PERFORMANCE OF
MANUFACTURING FIRMS IN NAIROBI, KENYA**

BY


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DECLARATION


This research project is my original work and has not been submitted for examination in any other University.

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This thesis has been submitted for examination with our approval as the University supervisors

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DEDICATION

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LIST OF ABBREVIATIONS AND ACRONYMS

ANOVA	Analysis of Variances
CV	Coefficient of Variation
GDP	Gross Domestic Product
ICT	Information Communication and Technology
IT	Information Technology
KAM	Kenya Association of Manufacturers
KNBS	Kenya National Bureau of Statistics
KPI	Key Performance Indicators
RBV	Resource Based View
ROA	Return on Asset
ROE	Return on Equity
ROI	Return on Investment
ROS	Return on Sales
SCM	Supply Chain Management
SC	Supply Chain
SCI	Supply Chain Integration
SPSS	Statistical Package for Social Sciences

ABSTRACT

The general aim of the study was to investigate the impact of supply chain integration on manufacturing firms' performance in Kenya. The specific objectives guiding the study were to establish the supply chain integration approaches adopted by manufacturing firms in Kenya. The study further pursued to establish the impact of supply chain integration approaches on performance of manufacturing firms in Kenya.

The study utilized descriptive research to collect quantitative and qualitative data. The target population constituted of heads of departments in supply chain, finance, IT and sales departments in manufacturing firms in Nairobi County. The population included 40 supply chain heads of departments in manufacturing firms in Nairobi randomly selected on stratified sampling basis from 836 manufacturing companies registered with KAM in 2020, where 142 were registered in Nairobi. Primary data was collected using both open and close-ended questions administered to 40 respondents of the study. For descriptive statistics, mean, Coefficient of variation, and standard deviation were used. Frequencies and percentages were employed in determining the features of the data and to summarize. To assess the relationship and impact of the three independent and the dependent variables, correlation analysis and regression were used.

The findings showed that the components of supply chain integration significantly predicted manufacturing firms' performance in Kenya. Consequently, regression analysis on customer integration implied an existence of a positive relationship and significant on firm's performance, while supplier integration had a positive and not significant relationship to firm's performance and internal integration had a negative and non-significant relationship with performance of manufacturing firms in Kenya. The study concluded that manufacturing firms evidently utilize the supply chain integration approaches to boost performance.

CHAPTER ONE: INTRODUCTION

1.1 Background of the study

Recently the supply chain has become a significant starting point of competitive advantage. Organizations have come to understand that it is not only enough to boost productivity within their organization without advancing their supply chain and make it efficient. Competition has risen since the 1990s and markets have become global, therefore increasing the complexities of delivering commodities to the right position at the good time at the minimum cost (Li, Ragu-Nathan & Rao, 2006). The experience and practice of the supply chain is an integral aspect of remaining competitive and successful in the global race (Li, Ragu-Nathan & Rao 2006). This study addresses the relationship between supply chain integration (SCI) and performance of firms in the manufacturing sectors.

The major supply chain integration drivers is competition in manufacturing industries in the recent years; which is highly attributed to latest emerging trends in technology and global innovations. This has triggered researchers to go a mile ahead in finding leverage and means of integrating and gaining competitive advantage. Firms in developed and most developing countries have shifted focus to integrating their production systems such as vendor selection, sourcing, and logistics. Integration creates and improve department's visibility within an organization and boosts market for competing in an expanding global market. Organizations have been pressured to integrate to enable revenue growth, reduce operational costs and improve operational performance.

Most manufacturing firms have therefore focused on centralized processes that ensures that a company has enough materials to produce the expected output effectively without any constraints. A supply chain includes all those involved in carrying out consumer

orders, either directly or indirectly. It is a network of suppliers and buyers and internal parties to ensure that raw materials are available to produce and consume by the end users.

Acknowledging the value of creating efficient supply chain management and maintaining competitive edge in companies' goods and services, according to Gunasekaran and Nagi,(2004); Sufian (2010), it is imperative to appreciate supply chain is heavily influenced by incorporation of essential elements into the supply chain. To understand SCI and the performance relation, it is necessary to figure out how both individual dimensions are associated to different performance dimensions.

1.1.1 Supply Chain Integration

Integration of a supplier is the way a business and its suppliers communicate and network. The extent of interaction with suppliers and consumers thus represents the degree of supply chain integration (SCI). It is therefore an important aspect within an organization to effectively coordinate internal and external activities involving the supply chain activity (Stank et al , 2001). Furthermore, integration includes the synchronization of forward distribution physical flows and the backward IT synchronization (Frohlich & Westbrook, 2001).

The scope of SCI is integration with clients, vendors, internal or external bodies (Chen et al, 2009b). Knowledge, organizational and relational integration promote linkages between firms in the supply chain activity. The integration of supply chain as a critical strategic tool would contribute to a consistent competitive advantage and good market efficiency. Firms can develop new skills and excel as a result of integrating organizational functions. One of the first studies to support this fact is Harrigan's (2004) report, that claims that the earlier

definition of vertical integration is outmoded as 100% controlled activities that are physically integrated to meet 100% of the company's needs. Today, many companies settle on a lesser degree of integration, or as implied as delayed integration by Harrigan (2004). Internal integration refers to how internal systems of a firm are coordinated together to give clear and full visibility of operations. It outlines the sharing of information infrastructure which facilitates coordination of functions and sharing information among the departments in a firm. This is providing a link of information across organizational departments, building easy approach to inventory information, marketing, and production systems.

External integration as the name suggests is having the external parties work with the internal parties. This involves suppliers, customers and the internal supply chain. The business environment is characterized by unstable changing market demands that need firms to respond. Meeting the demand of the customers through marketing activities would still require business processes integration to guarantee goods availability.

The mission and intent of SCI is to achieve an effective and timely flow of products, resources, information, and processes in order to ensure optimum value for customers at the lowest possible cost and a minimal time (Frohlich and Westbrook 2001). SCI puts together all of these roles in a manner that facilitates cooperation and eliminates disconnection (Frohlich, 2001). Supply Chain integration involves internal relations between the organizational departments that source, manufactures and distributes goods and external connections with non-business organizations, comprising direct suppliers and their suppliers, as well as the direct buyers and their buyers' networks (Jespersen & Larsen, 2005).

1.1.2 Firm Performance

Firm performance is explained by effectiveness of a corporation in serving customer needs. SC's strategies consist of three elements, including communication and knowledge exchange, logistics planning ,IT infrastructure, and organizational culture are all factors when effectively combined together and implemented effectively enhances productivity and also customer satisfaction.

Some of the key performance indicators (KPI) are increased asset utilization, reduced customer complaints, customer satisfaction, great profit margins, and reduced defects among others. The relative importance of the financial component of a company in respect with competition within the same particular sector is another aspect to consider in determining the efficiency of a business; this is compared and contrasted with other manufacturing companies. The efficiency of the supply chain is informed and affected by the control and alignment of core data elements in their supply chain. Premkumar (2008) also found out that a higher degree of exchanging information increases supply chain efficiency. Increased contact between companies and vendors improves the exchanging of knowledge such as business information – between the two sides, an instrument to enhance supply chain efficiency. Studies indicate that knowledge exchange has a strong correlation with the competitiveness of firms (Dyer and Singh, 1998; Andreu et al., 2008).

Performance can be measured, according to Tracey et al. (2005), using four distinct dimensions comprising of customer loyalty, perceived value, financial performance and market performance. Despite its significance, corporate performance studies have encountered myriad of challenges such as lack of agreement and acceptance from other scholars, collection of main performance metrics based on convenience, as well as little

consideration of the dimensions (Combs, Crook and Shook, 2005). Past studies have assessed the performance of organizations with one single indicator majorly the financial performance using profitability (Glick, Washburn, & Miller, 2005).

Selection of performance evaluation is a crucial move in assessment of any integration of supply chain. It is noted that cost, consumer response, resource, performance and durability are the required components in assessing organizational performance and supply chain integration aspects. Therefore, a production company will aim to assess the efficiency of its feedstock suppliers to see to it that the right integration decisions are consistent.

1.1.3 Manufacturing firms in Kenya

A manufacturing company is any company which uses raw materials or components to manufacture a finished product. These finished goods may be marketed directly to customers or to other production businesses who use them to manufacture multiple products. Kenya's manufacturing sector has been described as one of the essential development industries in spearheading the vision 2030. The sector accounts for 65% of the country's GDP contribution with the remaining 35% coming from construction, building, mining and quarrying activities (Kenneth and Brian 200).

The economy generated 843,000 new jobs in 2018 financial years, with a GDP of 5.4%. This is accordingly the 2020 Economic Survey report launched in April 2020 by the Finance minister of the Government of Kenya. The manufacturing sector directly contributes 10% to Kenya's GDP, according to the World Bank (2013) which comprises 3500 manufacturing units with 300,000 people working directly in these manufacturing units and close to 500,000 indirectly, accounting for 13% of the Kenya formal workforce.

Kenya's 2030 vision illustrates the need for an ambitious, integrated manufacturing policy to make it globally competitive. The president of the republic of Kenya unveiled the Big four agendas on 12 December 2017, where he emphasized that we must face and defeat the enemies; and to conquer the enemy and boost our manufacturing abilities we have to believe that we can do it as a country, keep a common vision and remain focused. By 2022, he set one of the Government's four key goals to raise its export contribution to GDP to 15%.

According to KAM-Manufacturing-Deep-Dive-Report (2019), there are 836 companies registered with KAM. About 430 of those companies are in Nairobi cutting across the 14 key manufacturing sectors.

1.2 Research problem

Due the rapid global growth and emerging technologies, there is need to shift attention to areas on operational excellence. The industrial sector was the leading economic growth driver and tradable sector, according to Rotich (2011) report. The Kenya vision 2030 stresses the need for an appropriate manufacturing policy to make Kenya internationally successful and productive (KNBS, 2018) for effective and sustainable development. To achieve this competitiveness there is need to research further. Most firms have already started to embrace the idea of implementing an integrated supply chain system.

McLaughlin et al. (2003) found, besides, that the anonymity of global prosperity is partially a result of their capacity to use ICT for SCM. The ICT is an essential tool for efficient integration of supply chain, and many ICT implementations have become popular lately. The integrated supply chain requires a continuous flow of knowledge according to Lambert and cooper (2000), which in turn contributes to the optimum inventory flow in the business. Chizzo (1998) has found that the importance of sharing information depends on what information is exchanged with whom and where and how it is exchanged and on what its effect on the efficiency of the supply chain is. In this inquiry, there is need to evaluate which information has to be exchanged to ensure the requisite results. Katua (2014) concluded that organizations facilitate transfers of information such as marketing, production and technological information.

According to Li et al. (2006), evidence is drawn from studies that have focused on supply chain performance and corporate performance that there is positive impact on organizational performance as a result of integration of supply chain citing that effective implementation of supply chain strategies not only enhance firm's competitiveness but also

promotes competition among firms involved in supply chain activities. According to Stevens (1989), management of content flows from manufacturers for internal processes is essential to all manufacturing industries by means of value addition and delivery networks for customers.

From studies reviewed, it is noticeable that larger part of the studies has not evaluated firm performance by addressing supply chain integration approaches and its effect on a firm's performance as a whole. Many studies have been conducted on manufacturing firm's performance focusing on various aspects of supply chain management. The effect of integration on supply chain achievement in manufacturing companies in Kenya was analyzed by Katua (2014). This research did not discuss the impact on the whole area of industrial efficiency of supply chain integration approaches. This highlights a literature gap by responding on research questions; what are the approaches of supply chain Integration? And what is the impact of Supply chain integration approaches on the overall performance of manufacturing firms in Kenya?

1.3 Objectives of the Study

The general aim of the study is to find the impact of supply chain integration to firm's performance. The specific objectives guiding the study are the following;

- i. To establish the supply chain integration approaches adopted by manufacturing firms in Kenya.
- ii. To establish the impact of supply chain integration approaches on performance of manufacturing firms in Kenya.

1.4 Value of the study

The findings of this study will help policy makers to identify supply chain integration ways and how they affect firms' performance. It will also give light on how firms can adopt those practices to increase productivity and revenue generation. It will enable managers across other firms to embrace the supply chain practices discussed in this paper.

Researchers and scholars can use the findings on this paper and the academic fraternity in further studies concerning the same thematic areas. This study will provide insights or create new knowledge in supply chain integration in manufacturing firms and other business sectors.

The findings of this paper will also help the managers and directors of organizations in addressing the shortcomings in supply chain of their manufacturing firms and those of other industries and especially the big four agenda pillars sector.

CHAPTER TWO: LITERATURE REVIEW

2.1 Introduction

This chapter explores what various scholars and authors have said about integration of the supply chain partners. The chapter outlines literature and past studies done on supply integration approaches and how they affect performance and competition of manufacturing firms in Kenya.

2.2 Theoretical Review

Past studies reveal a collection of interrelated statements and theories that explain the correlation of supply chain integration and performance in firms. These theories are discussed next:

2.2.1 Knowledge Based View

This theory explains that knowledge and capabilities are the principal sources of competitive advantage and performance in firms. Researchers view knowledge as the key competency to attain performance unlike in resource-based theory where the key focus is in utilizing the firm's resources to achieve its objectives (Grant, 1996). Knowledge enables businesses to make up internal and external capital and to create unique advantages that contribute to market growth. Consequently, the existing tools, such as technology and products, have no innate merit or advantages for such companies, unless they can be strategically integrated in order to gain a competitive edge, generate value addition and benefits for consumers. Knowledge managements is critical in the organization as it can create a competitive advantage or it can innovation (Andreu, Baiget, & Canals, 2008).

Resources within a firm that relates to knowledge activities is necessary particularly in ensuring sustainable competitive advantages, which are difficult to replicate and form the basis for sustainable differentiation (Wiklund and Shepherd, 2003). The benefit is focused on the competitiveness of companies, the knowledge of the consumer, creativity and business capability. Compositional methods require the convergence of cost-effective, innovative product functions and their management, allowing quick reaction to business volatility and offering consumers a superior offer. Through organization, consolidation and application of the expert skills that individual employee possess, an organization can create a sustainable competitive advantage.

As Alavi and Leinder (2001) have mentioned, technology has a significant function for the firm's knowledge creation and implementation capacity as well as in improving large-scale intra and intercorporate knowledge management, since information systems may be used to coordinate operational activities and functions. This helps the company's efficiency. It is also important to point out that a literature on the management of knowledge requires superior knowledge, from corporate learning to superior organizational performance.

Grants (1996) confirm that organizations capabilities are advantageous to competitors and organizational managers should apply knowledge to transform inputs to outputs which makes the competitive. Knowledge integration depends on the transferability and application within the organization. A combination of organizational internal knowledge and capabilities is therefore important. He further explains situations that lead to competitive advantage and performance under this view as extension of existing capabilities and include the new knowledge and using the existing knowledge in new capabilities. Internal Integration means that other firms will not access or use the same

capabilities and hence cannot achieve the same performance achieved when knowledge and capabilities are well utilized. These two must work together for sustainable advantage.

2.2.2 Resource Based View

This theory clearly defines that a firm can only achieve and perform better than others by optimizing the resources of the firm to full capacity. The firm's KBV, according to Curado et al. (2002), lies with the availability of resources within a firm. There is an emergent strategic literature on RBV according to these authors that emphasizes this information as the basis for competition.

The main goal for RVB is to explain why some performs perform better than others, and how they gain competitive advantage. This theory, according to Peteraf and Barney (2003), provides strategies that will help determine the performance of a firm from different dimensions with regard to resource availability and other internal forces that affects performance. They further explain that this theory focuses on efficiency of the firms and no other areas like strategic behaviors or market power. RBV is based on two types of resources; which is intangible and tangible resources. Tangible resources are those that can easily be bought in the market by other firms hence no huge competitive advantage with them. These can be property, land or capital. The intangible resources or assets are items with no physical value and are acquired over a period. These resources are trademarks, reputation or intellectual property etc.

Resources are characterized as organizational factors that empower it to conceive and execute value-creating strategies. To have a significant impact on company efficiency, the tools must be deployed in ways that fit the policies adopted by the organization. Companies

should focus on creating skills that are unique, inimitable or impossible to replicate. There are capacities relevant to the company's staff that contribute their expertise, experience and ability (Andreu et al., 2008). Further, (Dierickx and Cool, 1989; Barney, 1991) developed a framework to examine the properties of resources in organizations and came up with four attributes of firms resources as below; these are characteristics that makes a firm fully utilize its capacity to perform.

Rare; both tangible and intangible resources should be limited in supply, and not equally distributed. They should not be easily accessible to other markets. Valuable; Resources are said to be valuable if they improve the value of products or goods provided to customers. This can be done by product differentiation and reducing cost of production. This is key criteria to identify how a firm is performing against other firms. If the resources do not meet this criterion, it may lead to competitive disadvantage. Inimitability; these are the resources which are difficult to replicate by other firms. It should however be costly to imitate such resources to retain competition power within the firm. Non-substitutability: This means resources that cannot be replaced or substituted.

Supply Chain Partners, as Dyer and Singh (1998) highlights, also provides valuable resources that are necessary to realize competitive advantage. They concluded that it is necessary to structure inter-organizational capital to achieve excellent efficiency rather than simply using the restricted resource base of a business itself. Suppliers play a remarkable part in providing the focal firm with critical services as well as in the execution strategies of the organization. RBV implies that SCI is an inimitable, non-substitutable, path-dependent skill established over time by an organization to achieve a sustained competitive edge. This perspective has shown that, in order for strategic SCI to be efficient,

we must not rely on only one actuator, but rather consider consumer integration, internal role and supplier integration in combination.

2.2.3 Systems Theory

This view as established by Bertalanffy (1950) argues that there are various components that contribute to the overall outcome. He stated the need to establish mutual relationships between two disciplines that operate in same environment. This theory defined various components named as inputs and outputs play key role and one cannot achieve while isolating the other factor. In order to address or establish performance of manufacturing firms there are systems that contribute, which are supplier, customers and internal aspects of the firm. The concept of this approach was to encourage supply chain partners to engage in interactions and interrelationships within the firms in order to understand outcomes. It is clear that systems cannot exist on isolation, for instance integration of customers cannot be realized without involving internal coordination of the firm.

2.3 Supply Chain Integration Approaches

Integration presents a key point in fields such as management, production management and information's systems. It has been acknowledged that it is capable of responding to the challenge of sharing information in organizations (Barki&Pinsonncault, 2005). According to Lawrence and Lorsch (1965), integration is a process of equality in the performance of organizational tasks between different subsystems. External and internal integration approaches are the two primary approaches where external integration is further split into supplier integration and consumer integration.

La Londe and Masters (1994) have described supply chain as a collection of businesses that forward their products from one point to another. This is also verified by (Lambert et al, 1998) that it is alignment between businesses that offer goods and services. These meanings lead to the conclusion that it is a relation between commodity, service and consumer upstream and downstream flows. This paper explains external integration as follows.

2.3.1 Customer Integration

External integration is the degree to which an organization develops mutual connections, knowledge transfers techniques and coordination of external integration operations with both consumers and suppliers (Gunasekaran, 2004; Narasimhan and Kim, 2001). It includes logistical operations that go beyond the internal business operations, including cooperation and communication with other partners of the supply chain. Under the context of external integration, Spekman et al. (1998) defined four stages as arms-length interactions, partnership, teamwork and collaboration.

Customer integration is a core component of the integration mechanism of the supply chain that leads to the capacity of the organization to interact with its important consumers (Bowersox et al., 2001). It has been developed as a way of ensuring the successful continuity of the business process and its overall growth and expansion. The competitive capacity of a company to recognize the needs of its clients and the degree of its willingness to address those needs decide the quality of its engagement with its clients (Powell, 1995). The creation of strong consumer relations helps businesses to become more open to the wishes and expectations of their customers (Stroeken 2000). Additionally, good consumer relationships can be used to increase service performance, cost-effectiveness and dissuade

new entrants (Vickery et al. 2003). The integration of the company with its clients makes them aware of their clients by connecting their front ends with customers (Simchi-Levi et al. 2008).

Consumer incorporation includes the exchange of market knowledge that allows the producer better understand customer demands and anticipate stronger customer performance, as well as the mutual participation of customers in designing products, the production of improved goods at reduced cost and greater versatility in responding to the demand of customers (Flynn et al. 2010). The strong relationship between consumers and suppliers provides opportunities to increase the quality of demand details, which decreases the manufacturer's product creation and development preparation time and the obsolescence of inventories, making it more responsive to consumer demands.

In other studies, by Lee (2000) he outlined three dimensions of external integration: information sharing, organizational coordination and supplier participation. The focus of these three dimensions leads to high level of customer service, improving performance and customer satisfaction.

Organizational coordination refers to balanced decision-making and responsibilities within the supply chain in the firm. Sharing information involves transfer of technological knowhow, marketing techniques, information pertaining production and inventory across customers and suppliers (Lambert, 2001). Supplier participation is ensuring that suppliers are involved in all processes within the organization decision making.

These definitions clearly state the importance of the three dimensions between members of a supply chain which should lead ultimately to a more effective and improved

performance in supply chain operations. They explain how important it is to have the external aspects both supplier and customer integrated for better performance.

2.3.2 Supplier Integration

Partnerships and relationships among SC members are motivated mainly by the need to balance costs and volume rather than to see opportunities for strategic success. Closer supplier-Customer partnership helps to organize projects and settle disputes. Improved collaboration and communication of priorities helps minimize redundancy and duplication of action in the management of supply chain operations (Swink et al., 2007). Thus, the mutual sharing of knowledge on products, processes and skills allows producers to establish their production plans and deliver goods on schedule, with increased productivity and high quality. Swink et al (2007) suggest that by including suppliers in product creation, a manufacturer and suppliers can come about a shared creativity of how to satisfy consumer needs and adapt to market shifts that contribute to improved business performance.

The firm's deep mutual relationship with vendors would ensure that the needs of producers are recognized and satisfied. The presence of vendors is a crucial component because many researchers have shown that it can offer multiple advantages, such as decreased costs, shortened lead-time, increased product creation and enhanced implementation of manufacturing technologies. A company's integration with its suppliers is the result of a strategic relationship amongst them.

Inventory management and collective planning help an organization to automate sourcing and logistics processes and maximize supply chain performance. This is the product of a shared and continuing partnership that includes a high degree of confidence, engagement

over time, long-term contracts, collaborative dispute settlement, and the distribution of benefits and risks of partnership (Vickery, Jayaram, Droge, & Calantone, 2003). Both parties work together to minimize costs and improve product efficiency resulting in benefit or loss sharing.

Stank, Daugherty, and Ellinger (1996) demonstrated that supplier integration is a vital cause of strategic advantage as it boosts operations in a business-to – business situation. Drawing from (Zhao et al . 2011) transfer of knowledge from manufacturers to suppliers happens as a result of partnership engagement with an aim to share information and establish a coordinated information management and framework.

2.3.3 Internal Integration

Internal integration is the described as degree to which corporate units and divisions operate together and collaborate by cross-functional process alignment to overcome disputes and accomplish common goals (Danese et al., 2013). The internal context encompasses factors that are contextualized within the organization's scope. These factors are linked to personnel within the influence of an organization, corporate roles and employees as well as the operational levels.

Internal incorporation enables the conversion of manufacturing criteria into buying specifications and strengthens inventory flow and activities involved in ordering process. Trust also plays a crucial role in creating a common view of a company's business priorities and objectives to promote the creation and execution of divisions effectively. The Adler and Kwon (2002) study has established that trust indicates that staff have shared responsibilities and compatible expectations and values.

Internal integration as defined by Lorsch (1965) encourages team activity, resources sharing and the achievement of defined goals amongst additional roles. It takes down departmental hurdles and strengthens collaboration to satisfy consumers ' needs. He further defined internal integration as a process of equal between different subsystems when achieving company tasks. While manufacturing firms may maintain their functional structures but customer orders flow across functions and departments to ensure the ultimate goal of satisfying a customer is achieved.

From the studies above, we can support that both internal and external integration have big influence in performance of manufacturing firms. Firms will have poor performance if their functions within are not integrated. The first to ensure is to have the internal functions properly integrated to enables proper flow of internal processes. It is evident that a company's internal integration is crucial to effective external integration.

Schoenherr and Swink (2012) suggested that internal integration is an essential component in order to facilitate integration in the supply chain, which increases operational efficiency. Lee et al. (2004) identified also the most significant contributing factor in cost control for internal integration. It can be observed that the external integration and efficient performance of supply chain integration appears to rely on internal integration. Gimenez and Ventura (2005) concluded that external integration and internal integration should be implemented simultaneously.

Coordinating operations and exchange of knowledge to minimize inventories, boost efficiency, and enhance customer loyalty will yield advantages for both stakeholders and therefore firms must work together to bring these improvements successfully (Drake and Schlachter, 2008). Internal integration explicitly understands the importance of

maintaining close interactive partnerships with clients and suppliers in departments as a result of an interconnected mechanism and roles within an undertaking. Both views are important for the partners of the supply chain to function together in order to optimize the benefit of the supply chain.

2.4 Stakeholder Approach to Firm Performance

This theory has been embraced by various academicians and is characterized as one that enables an organization to solve the problem of differentiating outcomes from performance. Connolly et al. (1980) underlines the need to classify stakeholders and to describe the success effects that assess their satisfaction under this principle.

Freeman (2001), suggested that stakeholders are any community or entity who could be influenced by the fulfillment of the aims of the company. The key owners, since they have a relationship and collaboration with the company, are suppliers and clients. These are secondary players with informal ties with the organization, but their actions directly influence the operations of a firm.

Research suggests that there is a strong relationship between manufacturers' internal integration and organizational efficiency in the supply chain. The most critical differentiators between firm performance is, according to Stank et al. (2001b), internal and consumer integration. The ties between internal integration and operating efficiency are favorable factors that influence manufacturer's performance in a supply chain.

2.4.1 SCI and Performance of Manufacturing Firms

Performance in supply chain management is critical for assessing efficiency. Kaplan and Norton (2005) have claimed that what you do not calculate cannot be prescribed. Performance is the quantification mechanism for the efficacy and efficiency of an intervention or event.

According to Kaplan and Norton (2001), the key aim at the time of the organizational success was to maximize organization's productivity and competitiveness in order to enhance the operational capacity to provide products and services to their clients. Moreover, Vickery et al. (2003) suggest that efficiency of the supply chain has two capacities: operation and financial performance. Service performance is coverage of the service dimensions to customers and the manufacturing firm's objectives. It measures customer satisfaction or value added to the customers in meeting their demands.

Financial performance includes the traditional models such as Return on Sales (ROS). And Return on Investment (ROI). Financial performance will have the largest outcome of performance, in regard to service performance and hence results to the overall performance of a firm. Kim (2009) goes to further emphasizes that supply chain performance has four dimensions. Quality, Cost, time and Flexibility performance. It is concluded that financial performance is the most important performance indicator.

Tan, (2001) outlined the purpose of an integrated supply chain, which can't be readily duplicated by other manufacturing companies, is to construct production structures and logistics functions around the supply chain. Quality evaluation is crucial for the determination of the organization's performance and expertise. Lee (2000) said that the

safest way for ensuring the consistent efficiency of the supply chain is integration with the provider. Study reveals that the effects of SCI on business results in the manufacturing sector are important and crucial as far sustainable competitive advantage is concerned (Frohliche and Westbrook 2001; Rosenzweig et al.2003; Droge et al.).

Performance can be measured using a tool called key performance indicators. Key Performance Indicators (KPIs) are specific indicators that stipulate how a company is achieving its objectives. If the results show the performance is poor it means that the firm has to set strategies that will enable them improve. They are used as comparisons of achieved performance and the desired outcome. The KPI's must be Specific, Measurable, Attainable, realistic and time bound. Bhagwat et al. (2007) also designed a tool that can recognize performance of a firm called a balanced scorecard that measures business operations from four perspectives namely customer, Finance, internal business processes and learning and growth.

In several studies, appropriate operating and financial indicators were chosen to reflect overall firm performance. It is critical for performance measurement that past and future performance be differentiated according to period. Past performance if superior does not guarantee that the firm's performance will yield same results when measured at a later period.

Hooshang, et al (2014) conducted research on the supply chain integration and firm performance of manufacturing firms in Sweden which concluded that supply chain integration is beneficial to performance of manufacturing companies. The study showed that the feedback is important to managers in indicating the importance of Integration and

that they should consider integrating of internal processes in the firm with coordination with the supply chain partners for the full performance of the firms.

A research by Cheruiyot (2013) on the effect of Supply Chain integration on operational efficiency has shown a positive impact on the operational performance of Kenya's manufacturing firms. Further, this study concludes that managers in should strive to understand better their supply chains and the activities that enhance collaboration. This may lead to improved efficiencies which in turn improve their operational performance as well as improved financial performance.

Mbaisi (2016) studied factors affecting SCI in large manufacturing firms in Kenya. This study demonstrated existence of strategic partnership between large manufacturing firms and sharing information yielded to improved quality and generally, lead to firm's performance.

In his research; The Supply Chain Policy and Competitive Advantage of Nation Media Group Ltd, Kyengo (2012) found that the company's overall success was primarily determined by the ability of the company to produce supplies on schedule to diverse customers.

Research carried out by Owino (2015) on the integration of supply chain and organizational success of Kenyan commercial banks revealed that reverse logistics, information management, top management support, customer orientation, IT acceptance and customer service impact commercial banks' results.

Katua (2014) conducted a research on effect of market integration on performance of the supply chain in manufacturing companies in Kenya with the goal of exploring the influence

of SCI on the performance of the supply chain. The researcher discovered that supply chain transformation organization's accomplishment of strategic priorities, minimize uncertainties and enhance internal and external alignment of operating processes.

2.5 Summary of Literature Review

Integration of supply chain not only increases stability and strong inventory management system, which effectively leads to higher profit margins, it also creates competition in a variety of market environments.

When this internal integration has been attained, firms will continue to deem the synchronic demand, which synchronizes the customer's demand with the production strategy and the distribution of materials from suppliers. Integration strength also applies to external ties with stakeholders outside the focal organizational framework. Kim (2009) suggests that reaching convergence within the supply chain is a vital task affecting both internal and external partners such as manufacturers, consumers and employees.

Furthermore, Rosenzweig et al. (2003) find that, at a high level of internal integration, higher-level organizational concepts serve as integrative frameworks through which all-internal groups are organized and information transferred through the group. When such integration has been accomplished, the firm operates as a group in which it is possible to collaborate and integrate greater varieties of technical skills to establish knowledge creation. The results of this study indicate that strategic choices are taken by all manufacturers with regard to the level of downstream and upstream integration they choose to pursue. Other organizations tend to participate in comparatively little integration,

resulting in a small arc of outcomes. Other firms opt for comprehensive integration with their suppliers or customers; this results in a broad arc of integration.

Table 2.1 Summary of Literature Review

Author	Study Topic	Objective	Methodology	Findings	Research Gaps
Hooshang,etal(2014)	Empirical study on Supply chain Integration and firm performance of manufacturing firms in Sweden	Established the effect of supply chain integrations is important to financial performance of manufacturing firms in Sweden	Survey design	supply chain integration is beneficial in performance of manufacturing firms	This study failed to explore other performance measures and only studied the impact of supply chain integration
Katua(2014)	Effect of supply integration on the supply chain Efficiency in Kenya's manufacturing companies	Investigated impact of supply integration on performance of supply chain in manufacturing firms in Kenya.	Descriptive research design	Organizations have been able to accomplish business targets, minimise costs and enhance internal and external alignment of operational processes through supply chain integration.	The study failed to study the impact on performance but only on supply chain performance.
Mbaisi(2016)	Factors affecting supply chain integration in large manufacturing firms in Kenya	Established the factors affecting supply chain integration on large manufacturing firms in Kenya	Descriptive research design.	Partnership between large manufacturing firms and sharing information yielded to improved quality and generally, lead to firm's performance.	The study did not consider the benefits of supply chain integration
Owino (2015)	Supply chain integration and organizational performance of	Determined the effect of supply chain integration on organizational performance of	Cross sectional research design.	The study found that knowledge management, reverse logistics, top management support,	The research neglected to recognize ways in which public institutions would

Author	Study Topic	Objective	Methodology	Findings	Research Gaps
	commercial banks in Kenya	commercial banks in Kenya.		the introduction of information technology, customer orientation and customer service influence commercial bank efficiency.	enhance incorporation of the supply chain to increase their efficiency and service to the public.
Kyengo(2012)	The Strategy of Supply Chain and Competitive Advantage of Nation Media Group Ltd.	Determined the effects of Supply Chain Techniques, SCS on the comparative advantage of NMG	Case Study Design	Overall performance of the organization was greatly influenced by the capacity of the firm to deliver products	The research failed to establish other performance indicators of effective supply chain.
Cheruiyot (2018)	The influence of the integration of the supply chain on the organizational efficiency of Kenyan manufacturing firms	Examined the effect of supply chain integration on operational performance of manufacturing organizations in Kenya.	Descriptive research Design was used	Integration of the supply chain affects favorably Operating productivity.	The research did not report much on integration of supply chain partners to boost the organization's efficiency.

2.6 Conceptual Framework

A conceptual framework is a comprehensive explanation of the phenomena of the study, supported by a visual or graphical representation of the key variable of the study (Kothari, 2004). Conceptual framework is a diagrammatic representation illustrating the relationship between independent and dependent variables.

A firm's performance as shown below is dependent of customer integration, supplier integration and internal integration processes. The relationship is these three variables contributes positively to performance of manufacturing firms in Kenya.

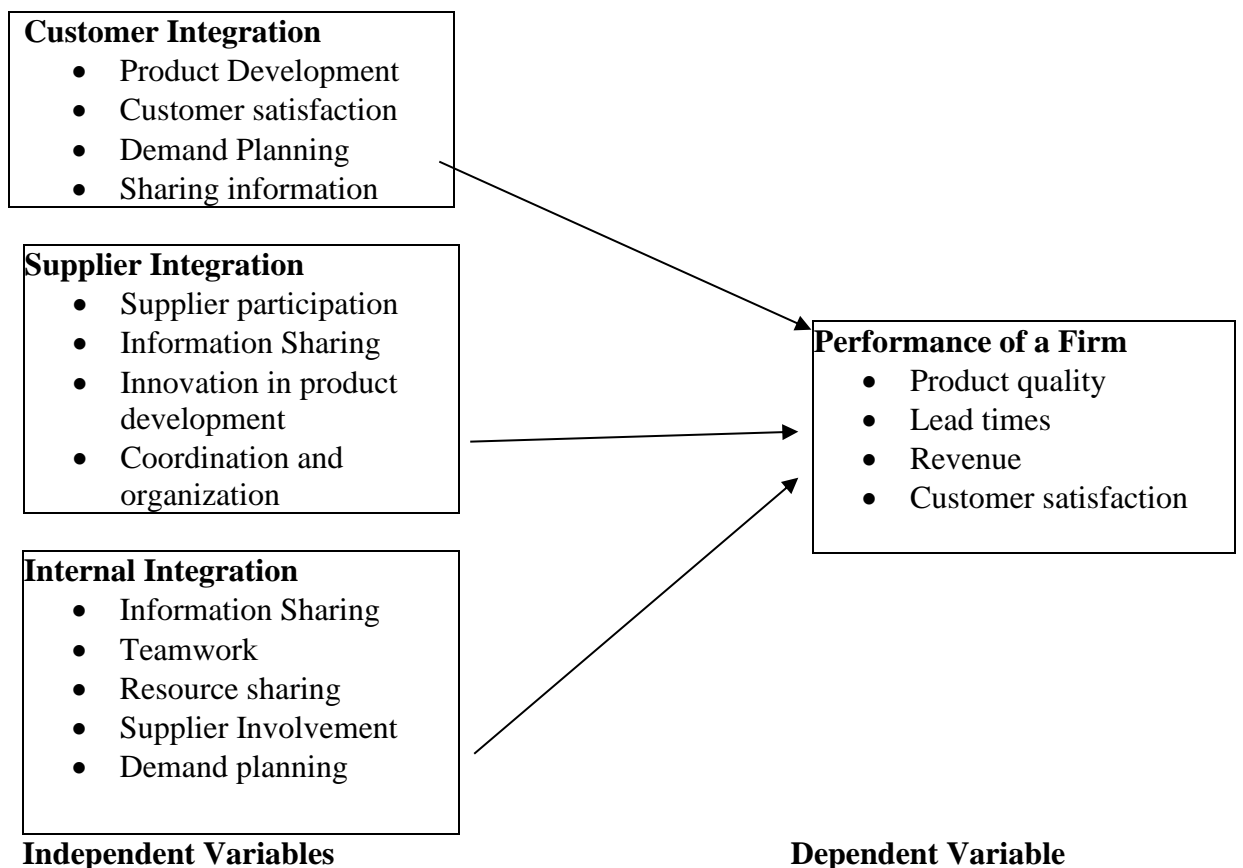


Figure 2.1: Conceptual Framework

CHAPTER THREE: RESEARCH METHODOLOGY

3.1 Introduction

This chapter represents the approach that was followed to completion of this study. It is broken down to; research design, population of the study, data collection instruments and finally data analysis.

3.2 Research Design

This study employed a descriptive research analysis to collect quantitative and qualitative data. This design is appropriate because it presents the situation as it exists at present without any kind of manipulation (Kothari,2004). It is concerned with the definition of the characteristics of a single person or group. It collects, describes and summarizes the evidence in order to gain clarity on the research topic. In this study descriptive research was used to probe the influence of supply chain integration approaches in manufacturing firms in Kenya. It is appropriate as it enables the researcher to collect, analyze and summarize detailed data on the subject of study.

3.3 Population

Population, according to John and Johnson (2002), is defined as the whole community of individuals, elements or items of interest that researchers wish to investigate. According to (Kothari, 2004) the target population is the portion of the overall population that the researcher is interested in and obtains the necessary data for analysis. There are 836 manufacturing companies registered with KAM in 2020, out of which about 142 of these firms are located in Nairobi County.

3.4 Sampling

Ngechu (2009), notes that sampling is the technique that is used to determine the sample size of what will be included in a study. Stratified sampling method was used to select the firms that comprise of the study sample. The research design proportionally represented small, medium and large manufacturing companies in Nairobi. The population of interest was divided into 3 strata, (See Appendix III) small (10 to 49 employees), medium (50 to 99 employees), and large (100 and above employees) companies. This was acquired from a survey baseline from KIRDI in 1997 on the private Sector Development Strategy paper 2006-2010 by Ministry of Trade and Industry, Government of Kenya.

Firms were then randomly selected from each stratum to constitute the sample size of the study. The heads of departments in supply chain, finance, IT and sales departments were considered knowledgeable with broad understanding of manufacturing firms' processes and hence preferred for correct feedback. This method gave equal chance to allow all manufacturing firms in Nairobi to comprise the study. Therefore, the sample size was 40 respondents selected from the target population.

3.5 Data Collection

The study depended on primary data, which was gathered using questionnaires. The questionnaires with both open and close-ended questions was administered based on the objectives of the study. The researcher administered the questionnaires to 40 respondents of the study, accompanied with an introductory letter from Nairobi University, School of Business. Further, the researcher retained a record of questionnaires, which were sent, and those received filed for subsequent data entry and analysis.

The questionnaires were structured questions that were answered using the Likert scale method, where the respondents were asked to specify their opinions on a scale of 1-5. The questionnaires were split into three parts. The first section covered the general knowledge of the respondents, the second section looked at the integration of the supply chain implemented by the company, while the third section covered the effect of integration of supply chain on the firms' performance.

The research brought forth, using the structured questionnaires, the impact of supply chain integration strategies on Kenyan manufacturing firms' performance. The method that was used to disseminate questionnaires was drop and pick later strategy. This gave sufficient time for the respondents to answer them, and also assured them of confidentiality of their identities.

3.6 Data Analysis

Before analyzing the responses, questionnaire validation was conducted to ascertain if the assessment measured what it's supposed to measure. They were edited and corrected to check for accuracy, completeness and consistency. Validity of questionnaires is critical when analyzing the correct quality of data hence increases the credibility of the results. The questionnaires were subjected to objective review from both the supervisor, SC practitioners and the researcher in order to ensure the consistency and validity of the method. The response from the experts will be looked at while doing corrections of the instrument used in the study. The questions that portrayed ambiguous characteristics were corrected and amended.

Data collected was analyzed in an orderly manner in order to make practical conclusions and recommendations on the objectives. Data of supplier, customer and internal integration was coded by utilizing the numeric scales which the respondents used in responding to questions posed in the questionnaire.

Statistical Package for the Social Sciences (SPSS) version 26 was used for data analysis. Frequencies and percentages were employed in determining the features of the data and to summarize the data. Quantitative data was evaluated using statistical analysis; descriptive statistics such as mean, standard deviation and coefficient of variation was computed to determine the extent of variation on the variables. Coefficient of variation is a measure used to show the extent of dispersion around the mean of the results. The researcher conducted a correlation analysis to investigate the relationship between supply chain integration variables and manufacturing firm's performance; and Karl Pearson's coefficient of correlation (r) was computed to achieve this objective. A linear regression model was fitted to determine its significance and further assess the effect of the three independent variables on the dependent variable. Tables were used to display the data gathered for ease of interpretation and review. The study used a multiple regression in the form of:

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + e$$

Where;

Y = Firm's performance (dependent variable)

X_1 = Customer Integration

X_2 = Supplier Integration

X_3 = Internal Integration

β_0 =the regression coefficient

$\beta_1, \beta_2, \beta_3$ =Coefficients of the regression model

CHAPTER FOUR: RESEARCH FINDINGS AND DISCUSSIONS

4.1 Introduction

The current chapter outlines research findings and discussions. The study envisaged investigating the impact of supply chain integration on the performance of manufacturing firms in Kenya.

4.2 Response Rate

A sample of respondents was interviewed through questionnaires. The study administered 40 questionnaires to managers through hand delivery. Out of the 40 questionnaires issued, all respondents managed to duly fill and return them in time for data processing. As a result, the response rate was 100% good response to the study as portrayed by Table 4.1. Prior studies have weighted the response rates and report that a 50% response rate is sufficient, 60% is generally good, and above 70% excellent (Kothari, 2011; Mugenda & Mugenda, 2012).

Table 4.1: Results for Response Rate

Category Of Firms	Issued questionnaires	Returned questionnaires	Response rate
Small-scale	11	11	100%
Medium-scale	12	12	100%
Large-scale	17	17	100%
Total	40	40	100%

4.3 Level of Education

This section presents personal data of the respondents in regards to the study. The researcher requested the study respondents to provide information on their level of education. Table 4.2 presents the study findings. Among the respondents, the highest level

of education was bachelor’s degree level (55.0%) followed by university post graduate degree level (45%). None of the respondents had attained a lower level of education with none having either non-formal education (0%) or primary education (0%). Based on the study findings, it was evident that manufacturing firms’ managers had attained high level of education. Further, high level of education indicates that the managers hold high level of understanding on supply chain integration and its importance in manufacturing firms in Kenya. According to Macnamara et al., (2014), individuals with high levels of education are more adept at accomplishing duties that need a particular skill set.

Table 4.2: Level of Education of the Respondents

Highest Level of Education	Frequency	Percent
Non-Formal Education	0	0.0%
Primary School	0	0.0%
Some Secondary Education	0	0.0%
University (Bachelors)	22	55.0%
University (Post graduate)	18	45.0%
Total	40	100

Source: Research data, (2021)

4.4 Supply Chain integration Approaches Adopted by Manufacturing firms

This section addressed the first objective of the research.; which was to establish the supply chain approaches adopted by manufacturing firms in Kenya. The respondents were asked to rate extent to which their firms have adopted the supply chain integration practices. The supply chain approaches were divided into three sections: (i) Customer Integration (ii) Supplier Integration and (iii) Internal integration.

The study findings were as presented in the subsequent subheadings indicating the mean, standard deviation and Coefficient of Variation of the different variables of interest in the study.

4.4.1 Customer Integration

The study asked the respondents whether they agreed that their organizations encouraged customer Integration to affect the performance of their firms.

a) Product Development: Customer Integration Component

The researcher sought to assess firms' performance based on product development as a component of customer integration. Table 4.3 presents the study findings on product development as a component of customer integration.

The frequency of the respondent's on receiving feedback from their clients regarding the firm's quality and delivery performance recorded a mean of 2.23(SD=0.99). The results indicated a CV of 0.448 which indicated a low variability in the sampled data to show that greater number of the manufacturing firms were determined to improve their performances through the product development approach. The study findings confirm those of Hooshang, et al (2014) conducted research on the supply chain integration and firm performance of manufacturing firms in Sweden and showed that the feedback is important to managers in indicating the importance of Integration and that they should consider integrating of internal processes in the firm with coordination

with the supply chain members for the full performance of the firms.

Table 4.3: Product Development as a Component of Customer Integration

	Mean	Std. Dev	CV
We often get feedback from our clients regarding our quality and delivery performance	2.23	1.000	0.448

Source: Research data, (2021)

b) Demand Planning: Customer Integration component

The study sought to assess firms’ performance based on demand planning as a component of customer integration. Table 4.4 presents the study findings on demand planning as a component of customer integration. The research findings showed that majority of the firms ensured they promptly responded to the needs and demands of the customers as indicated by a mean score of 1.93(SD=1.05). The results as shown by CV of 0.544 indicate that majority of the respondents conquered that demand planning influences firm performance. Therefore, manufacturing firms utilized demand planning in customer integration as a tool to improve performances.

Table 4.4: Demand Planning as a Component of Customer Integration

	Mean	Std. Dev	CV
Our company ensures it promptly responds to the needs and demands of the customers	1.93	1.047	0.542

Source: Research data, (2021)

c) Sharing Information: Customer Integration Component

The study sought to assess firms’ performance based on information sharing as a component of customer integration. Table 4.5 presents the study findings on information sharing as a component of customer integration.

Transparency on sharing critical business expertise knowledge, and protocols with key business partner registered the highest mean score of 2.93 (SD=1.185). The results showed a CV of 0.404 which reflected that there was consensus with the statement in regards to firm performance. The statement that sharing information on situations that may influence operations with the firm’s business partners resulted to a mean of 2.55 (SD=1.131), with a

variability of 0.443 which showed that most respondents agreed to the statement. Frequent face to face communication with the manufacturing firms' suppliers ranked third with a mean of 2.38 (SD-1.353) and a CV of 0.568 to indicate that the responses were moderately varied. The last mean score was registered on the firm's strive to ensure high-level of reliability while exchanging information amongst business partners with a mean score 1.73 (SD=0.847), with a CV of 0.48 which showed that a low variation of the responses. Prior research studies have underscored that it is crucial to integrate sharing of information in the supply chain to efficiently secure a competitive advantage (cooper, 2004).

Table 4.5: Sharing Information as a Component of Customer Integration

	Mean	Std. Dev	CV
There is transparency on sharing critical business expertise knowledge, and protocols with key business partner	2.93	1.185	0.404
There is information sharing on situations or occurrences that may influence operations with our business partners	2.55	1.131	0.443
We have frequent face to face communication with our suppliers	2.38	1.353	0.568
We strive to ensure high-level of reliability while exchanging Information amongst our business partners	1.73	.847	0.489

Source: Research data, (2021)

d) Customer Satisfaction: Customer Integration Component

The interview sought to assess firms' performance based on customer satisfaction as a component of customer integration. Table 4.6 presents the study findings on customer satisfaction as a component of customer integration.

Most of the respondents indicated that manufacturing firms often seek information from customers on how to improve on quality, standards, reliability, responsiveness and performance as portrayed by a mean score of 2.63 (SD=1.125), these was varied as shown by a CV of 0.427 to indicate great confidence from the respondents; followed by firms

frequently practicing customer satisfaction measurement and evaluation with a mean score of 2.55(SD=1.085) which showed a CV of 0.422 meaning that most respondents agreed on the statement.

Respondents also indicated that firms frequently determine future customer tastes and preferences with a mean of 2.50 (SD=1.109) which showed a CV of 0.443 also indicating low variability on the mean; valuing the importance of having stable customer relationships registered a mean of 2.0(SD=0.86) reflecting a CV of 0.424 to mean that there was consensus in the responses. Manufacturing firms also ensured there were good customer relationships so that they could feel free to be assisted when they are in need scored a mean of 1.88 (SD=0.911) showing a low variation from mean of 0.48 as CV. Lastly, manufacturing firms did strive to ensure their customers were in constant and close contact registered a mean of 1.78 (SD=0.92) which showed a indicated by a CV of 0.516 .This is an indication that the results moderately varied from the mean .The study findings resonate with those of Kyengo (2012) who found that the company's overall success was primarily determined by the ability of the company to produce supplies on schedule to diverse customers. Further, good customer relationships are used to improve cost effectiveness and service performance as highlighted by (Vickery et al . 2003)

Table 4.6: Customer Satisfaction as a Component of Customer Integration

	Mean	Std. Dev	CV
We often seek information from customers on how to improve our quality, standards, reliability, responsiveness and performance	2.63	1.125	0.427
Customer satisfaction measurement and evaluation is a frequent practice in our company	2.55	1.085	0.425
We frequently determine future customer tastes and preferences	2.50	1.109	0.443
We value the essence of evaluating the importance of having stable customer relationships	2.03	.862	0.424
We ensure there is good customer relationships so that they can feel free to be assisted when they are in need	1.88	.911	0.484
We strive to ensure put our customers in constant and close contact	1.78	.920	.0516

Source: Research data, (2021)

4.4.2 Supplier Integration Approaches

The study asked the respondents whether they agreed that supplier integration was adopted in their firms and its impact on the performance of their firms.

a) Supplier Participation: Supplier Integration Component

The study sought to assess firms' performance based on supplier participation as a component of supplier integration. Table 4.7 presents the study findings on supplier participation as a component of supplier integration. Working as a team together with the firms' suppliers to solve problems that arose scored the highest mean of 2.35 (SD=0.975), the results showed consensus from the respondents as indicated by a CV of 0.415. Priority on selecting only those suppliers who are keen on meeting firms' quality standards registered a mean of 2.22(SD=0.862) reflecting a low variability of 0.38 to mean there was greater consensus on the responses. The study findings were consistent to those of Lambert, (2001) who reported that it was critical for firms to ensure they establish excellent

relationships and communication with suppliers to achieve efficiency in firms' performance.

Table 4.7: Supplier Participation as a Component of Supplier Integration

	Mean	Std. Dev	CV
We work as a team together with our suppliers to solve problems that arise	2.35	.975	0.415
We prioritize on selecting only those suppliers who are keen on meeting our quality standards	2.23	.862	0.388

Source: Research data, (2021)

b) Innovation in Product Development: Supplier Integration Component

The study sought to assess firms' performance based on innovation as a component of customer integration. Table 4.8 presents the study findings on innovation in product development as a component of supplier integration.

Most manufacturing firms helped the suppliers during the course of developing new products scored a mean of 3.38 (SD=0.705) which shows the larger group of the respondents agreed on the responses as reflected by CV of 0. 208. This shows very low variability on the responses which is good feedback. Further, firms assisted their suppliers in quality improvements on their products registered a mean score of 2.98 with also great consensus amongst the respondents as indicated by a variation of 0.308 from the mean. Owino (2015) highlighted that technology plays such a great deal in supplier integration in innovation when developing new products that are customized for meeting user needs.

Table 4.8: Innovation in product development as Component of Supplier

Integration

	Mean	Std. Dev	CV
Our company helps the suppliers during the course of developing new products	3.38	.705	0.208
We are keen in helping our suppliers in quality improvements on their products	2.98	.920	0.308

Source: Research data, (2021)

c) Coordination and Organization: Supplier Integration Component

The study sought to assess firms' performance based on coordination and organization as a component of customer integration. Table 4.9 presents the study findings on coordination and organization as a component of supplier integration.

Firms considering the inclusion of their main suppliers in the course of scheduling activities and planning goals ranked the highest with a mean score of 3.68(SD=0.797), the results indicated the responses were slightly varied as shown by CV of 0.216. Firms been keen on establishing long-term trading relationships with suppliers ranked second with a mean of 2.35 (SD=0.662) with a CV of 0.281 which translates that better part of the responses agreed to the statement. Lastly, firms putting efforts towards the maintenance of sound and sustainable relationships and co-operation with suppliers depicted a mean score of 2.20 (SD=0.853). The results indicated the responses varied from each other as given by a CV of 0.287.

According to Lee (2000), key areas in external integration of a firm is sharing information, supplier involvement and organizational coordination which enhance improved customer service, improved performance and customer satisfaction

Table 4.9: Coordination and Organization as a Component of Supplier Integration

	Mean	Std. Dev	CV
We consider the inclusion of our main suppliers in the course of scheduling our activities and planning goals.	3.68	.797	0.216
Our company is keen on establishing long-term trading relationships with suppliers	2.35	.662	0.281
Our company puts efforts towards the maintenance of sound and sustainable relationships and co-operation with suppliers.	2.20	.853	.0387

Source: Research data, (2021)

4.4.3 Internal Integration Approaches

The study asked the respondents whether they agreed that their organizations encouraged Internal Integration to affect the performance of their firms.

a) Sharing Information: Internal Integration Component

The researcher sought to assess firms' performance based on sharing information as a component of internal integration. Table 4.10 presents the study findings on information sharing as a component of internal integration.

There is frequent communication amongst all key units and departments in firms recorded a mean score of 2.63 (SD=0.667) which reflected low variation of responses as indicated by a CV of 0.253. As Kim (2009) cites that reaching convergence within the supply chain is a vital task affecting both internal and external partners such as manufacturers, consumers and employees hence the emphasis for openness in sharing information.

Table 4.10: Sharing Information as a Component of Internal Integration

	Mean	Std. Dev	CV
There is frequent communication amongst all key unit and departments in our company	2.63	.667	.253

Source: Research data, (2021)

b) Teamwork: Internal Integration Component

The study sought to assess firms' performance in regards to team work as a component of internal integration. Table 4.11 presents the study findings on team work as a component as a component of internal integration.

The decision-making process being a joint activity by the firm's leadership recorded the highest mean score of 3.03(SD=1.025) with a moderate variation of the responses 0.338 CV, followed by firms encouraging the workforce to work as a team towards achieving a shared goal while simultaneously putting unhealthy staff competition at bay with a mean score of 2.63 (SD=0.74) indicating the responses were varied as shown a CV of 0.281. The results revealed that the respondents concurred with the statement that everyone in the team is a key player as indicated by a mean of 1.85(SD=0.893), these results showed a great variation from of the responses as shown by a CV of 0.483. It is key to note that the higher the covariance, the stronger the relationship of variables. The findings of the study support those of Mbaisi (2016) who studied factors that affect supply chain integration in large manufacturing firms in Kenya and established that existence of strategic partnership between large manufacturing firms, and sharing information yielded improved quality and generally, lead to firm's performance.

Table 4.11: Teamwork as a Component of Internal Integration

	Mean	Std. Deviation	CV
The decision-making process is a joint activity by the company's leadership	3.03	1.025	0.388
Our company encourages the workforce to work as a team towards achieving a shared goal while simultaneously putting unhealthy staff competition at bay	2.63	.740	0.281
Everyone in the team is a key player	1.85	.893	0.483

Source: Research data, (2021)

c) Resource Sharing: Internal Integration Component

The study sought to assess firms' performance based on resource sharing as a component of internal integration. Table 4.12 presents the study findings on resource sharing as a component of internal integration. High level of system integration among the departments recorded a mean of 2.80(SD=0.853) which reflected a variation of 0.304 in the responses to show moderate consensus to the statement. From the results it is important to note that a higher covariance indicates a stronger relationship among the variables. The study points out that the sharing resources is critical aspect in boosting internal performance of the firm as it is explained by Peteraf and Barney (2003) that resource availability boosts performance.

Table 4.12: Resource Sharing as a Component of Internal Integration

	Mean	Std. Dev	CV
There is high level of system integration among the departments	2.80	.853	0.304

Source: Research data, (2021)

d) Supplier Involvement: Internal Integration Component

The study sought to assess firms' performance based on supplier involvement as a component of internal integration. Table 4.13 presents the study findings on supplier involvement as a component of internal integration.

Results indicate that most of the respondents reflected a mean of 3.28 (SD=0.77) which indicated a CV 0.234 to mean high consensus of the responses to the statement that key suppliers maintain a commendable on-time delivery record with the company; followed by the key suppliers ensured they satisfy the requirements made in the firms' emergency orders which registered a mean of 3.2(SD=0.966) and reflected a slight variation of 0.302 on the responses. A strong working partnership with the company suppliers scored a mean of 3.13(SD=0.822) with a moderate variation of the responses as shown a CV of 0.263. Firms having collaborative platforms through which they partner with customers and suppliers resulted in a mean of 2.98(SD=0.92) and indicated a moderate variation of the responses as shown by a CV of 0.309. The other scores were registered on key suppliers make drastic product volume changes with a mean of 2.67(SD=1.0) indicating a CV of 0.374 and lastly suppliers make alterations in product mix when needed to act scored a mean of 2.53(SD=0.78) reflecting a covariance of 0.308. The two indicate a moderate variation of the responses on the statements to support internal integration in their firms. These findings are consistent to those of Cheruiyot (2013) who scrutinized the effect of Supply Chain integration on operational efficiency and showed a positive impact on the operational performance of Kenya's manufacturing firms.

Table 4.13: Supplier Involvement as a Component of Integral Integration

	Mean	Std. Dev	CV
The key suppliers have maintained a commendable on-time delivery record with the company	3.28	.877	0.234
The key suppliers ensure they satisfy the requirements made in our emergency orders	3.20	.966	0.301
There is a strong working partnership with the company suppliers	3.13	.822	0.263
We have collaborative platforms through which we partner with customers and suppliers	2.98	.920	0.309
The key suppliers make drastic product volume changes when required to	2.68	.997	0.374
The key suppliers make drastic alterations in product mix when needed to	2.53	.784	0.308

Source: Research data, (2021)

e) Demand Planning: Internal Integration Component

The study sought to assess firms' performance based on demand planning as a component of internal integration. Table 4.14 presents the study findings on demand planning as a component of internal integration.

The respondents with a mean of 2.88(SD=0.822) agreed to the statement that manufacturing firms make rapid alterations in manufacturing processes to meet demand dynamics. The results showed a moderate variation from each other as shown by a CV of 0.285. Firms been well equipped with several warehouses, equipment and personnel to address rapid demand changes indicated a mean of 2.80(SD=0.791) reflecting a slight variation within the responses of 0.283. The respondents agreed to the statement that the firms' distributors could easily alter the modes and channels of delivery with a mean 2.68 indicating a varied responses as shown by CV of 0.285. Most of the respondents reflecting a mean of 2.6(SD=1.128) showed low consensus in their responses to the statement that the company could efficiently adjust warehouse capacity to cater for demand dynamics.

This is shown by a CV of 0.433. Ensuring changes in product mix to meet the customers' demands scored a mean of 2.6 which indicated a moderate agreement on the adoption of product mix in their firms as indicated by CV of 0.299. Firms meeting the drastic dynamics in product volume as per the customers' demands and the concerned departments reconfiguring equipment to comply with urgent orders produced means of 2.18 (SD=0.813) and 1.98 (SD=0.80) respectively.

The results indicated moderate consensus to the statement as given by the variations of 0.373 and 0.404 respectively. Firms ensuring, they accelerate emergency customer demands indicated a mean of 1.82(SD=0.913) which showed the respondents were varied with 0.44 in support of the statement. Including suppliers in product process bring a shared creativity of products that can satisfy customer needs on their requested schedules as well as improve on business performance (Swink et al. ,2007).

Table 4.14: Demand Planning as a Component of Internal Integration

	Mean	Std. Deviation	CV
The company makes rapid alterations in manufacturing processes to meet demand dynamics	2.88	.822	0.285
The company is well equipped with several warehouses, equipment and personnel to address rapid demand changes	2.80	.791	0.283
Our company distributors can easily alter the modes and channels of delivery	2.68	.764	0.285
The company ensures changes in product mix meet the customers' demands	2.60	.778	0.299
Our company can efficiently adjust warehouse capacity to cater for demand dynamics	2.60	1.128	0.433
Our company meets the drastic dynamics in product volume as per the customers' demands	2.18	.813	0.373
The concerned departments reconfigure equipment to comply with urgent orders	1.98	.800	0.404
Our company ensures it accelerates emergency customer demands	1.83	.813	0.444

Source: Research Data, (2021)

4.5 Performance predictor model

The research wanted to establish the connection between supply chain integration approaches and performance of manufacturing firms.

4.5.1 Impact of supply chain integration approaches and performance of manufacturing firms

Karl Pearson's coefficient of correlation (r) and regression was conducted to achieve this objective. A correlation analysis on Table 4.16 presents the study findings for supply chain integration and performance of manufacturing firms.

Table 4.15: Correlation Matrix

	Customer Integration	Supplier Integration	Internal integration	Performance of manufacturing firms
Customer Integration	1			
Supplier Integration	0.271	1		
Internal integration	0.134	0.344*	1	
Performance of manufacturing firms	0.466*	0.332*	0.028	1

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

In line with the findings, customer integration and performance of manufacturing firms are significantly and largely positively correlated ($r = .466$, $p < .001$). Results also indicate supplier integration and performance of manufacturing firms are significantly and moderately positively correlated ($r = .332$, $p < .001$). Further, there is a positive and insignificant correlation between internal integration and performance of manufacturing firms ($r = .028$, $p > .001$). There is positive relationship between supplier, customer and internal integration and performance of manufacturing firms.

The current study focused to determine the effects of the joint relationship between customer integration, supplier integration and internal integration on manufacturing firms' performance and a regression was used to examine the findings of the fitted model reported on Table 4.17.

Table 4.16: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	0.526	0.276	0.216	0.25038

- a. Predictors: (Constant), Customer Integration, Supplier Integration, Internal integration
- b. Dependent Variable: Performance of manufacturing firms

The findings of the study indicated an R value 0.526. The results implied a positive relationship between supply chain integration variables: customer integration, supplier integration and manufacturing firms' performance. Further, the findings showed a R² value of 0.276 which indicated of the explanatory power of supply chain integration variables. The findings indicated that 27.6% of the variation in manufacturing firms' performance in Kenya could be explained by the fitted model. Besides, this was an indication that the regression model could not explain 72.4% of the variation in firms' performance. Therefore, customer integration, supplier integration, and internal integration jointly as components of supply chain integration impacted the manufacturing firms' performance in Kenya.

ANOVA F test was conducted to assess the significance of the fitted regression model. Findings on the Analysis of Variance (ANOVA) presented on Table 4.18 revealed that the model assessing the connection between customer integration, supplier integration and internal integration (IV) and firms' performance (DV) portrayed statistical significance ($F=4.582, p=0.008<0.05$). Since the p value of the F- statistic was less than 0.05, on the basis of the fitted model above, the findings had the implication that the supply chain integration variables: customer integration, supplier integration and internal integration were valid predictors of manufacturing firms' performance in Kenya. Therefore, the findings of the study led to the rejection of the null hypothesis; Ho: customer integration, supplier integration and internal integration has no influence on manufacturing firms' performance in Kenya.

Table 4.17: ANOVA

Model	Sum of Squares	Df	Mean Square	F	Sig.
Regression	0.862	3	0.287	4.582	0.008
Residual	2.257	36	0.063		
Total	3.119	39			

- a. Predictors: (Constant), Customer Integration, Supplier Integration, Internal integration
b. Dependent Variable: Performance of manufacturing firms

The regression coefficients presented on Table 4.19 demonstrated that customer integration ($\beta_1=0.289$, $p=0.008<0.05$) contributed to positive and statistically significant effects on manufacturing firms' performance in Kenya since the generated p-value was less than 0.05. Supplier integration ($\beta_2=0.183$, $p=0.09>0.05$) had a positive and statistically not significant influence on firms' performance since the p-value was greater than 0.05. Further, internal integration ($\beta_3=-0.128$, $p=0.417>0.05$) showed a negative and statistically not significant effect on manufacturing firms' performance in Kenya since the generated p-value was greater than 0.05.

Therefore, on the basis of the model, there is the implication that change of a single unit of customer integration would result in a positive shift of 0.289 in the manufacturing firms' performance. The results demonstrated that a unit change in supplier integration would contribute to an increment of 0.183 units on the manufacturing firms' performance. However, a unit change in internal integration would lead to a decrease of 0.128 units in manufacturing firms' performance in Kenya. Therefore, the appropriate model would be as follows:

$$Y = 1.985 + 0.289X_1 + \varepsilon$$

Table 4.18: Regression Coefficients for Multivariate Regression

	β	Std. Error	Beta	t	Sig.
(Constant)	1.985	0.441		4.500	0.000
Customer Integration	0.289	0.104	0.411	2.787	0.008
Supplier Integration	0.183	0.108	0.264	1.695	0.099
Internal integration	-0.128	0.156	-0.124	-0.821	0.417

a. Predictors: (Constant), Customer Integration, Supplier Integration, Internal integration

b. Dependent Variable: Performance of manufacturing firms

4.5.2 Assessment of firms' performance

The study sought to assess firms' performance using four indicators namely: product quality, lead times, revenue and customer satisfaction. Table 4.15 presents the study findings on performance using four indicators namely: product quality, lead times, revenue and customer satisfaction.

Reduction in the lead times (days) recorded a mean score of 3.25(SD=0.954) reflecting a variation of the responses by 0.299 which is a moderate variation, followed by customer satisfaction where there was a decrease in recordable customer complaints scoring a mean of 2.88 (SD=0.853) which indicated a variation of 0.296 of the responses on the statement.

In terms of revenue, increase in return on assets (ROA) recorded a mean of 2.85 (SD=0.736) with a CV of 0.258, increase in Return on Equity (ROE) recorded a mean of 2.85 which reflected a variability of 0.281 to show moderate dispersion from the mean; increase in total sales recorded a mean score of 2.85 (SD=0.864) indicating a covariance of 0.303. Further, pertaining to revenue, increase in profits registered the least mean score of 2.58 (SD=0.781) indicating a variation in the responses by a CV of 0.302. A study done

by Kim (2009) suggests that financial performance is the most crucial performance indicator of a firm.

Product quality as an indicator of firms' performance recorded mean scores with increment on the number of certified suppliers and increment on the number of products mix recording means of 2.63 and 2.53. The results reflected moderate and slight consensus from the respondents as indicated by a variation of 0.253 and 0.334 respectively.

It is evident that the findings from Katua (2014), there is improvement in quality of products, lead times amongst others due to adoption of supply chain integration. This has led to improved internal and external operations that reflect a customer satisfaction and revenue growth.

Table 4:19: Response on Firm Performance Indicators

Lead times

	Mean	Std. Dev	CV
In recent years our company observed a decrease on the lead times(days)	3.25	.954	0.29

Customer satisfaction

	Mean	Std. Dev	CV
In recent years our company observed has realized a decrease in recordable customer complaints	2.88	.853	0.296

Revenue

	Mean	Std. Dev	CV
In recent years our company observed has realized increase in Return on Assets (ROA)	2.85	.736	0.258
In recent years our company observed has realized increase in Total Sales	2.85	.864	0.303
In recent years our company observed has realized increase in Return on Equity (ROE)	2.85	.802	0.281
In recent years our company observed has realized increase in Profits (Ksh)	2.58	.781	.610

Product Quality

	Mean	Std. Dev	CV
In recent years our company observed an increment on the number of products mix	2.63	.667	0.253
In recent years our company observed an increment on the number of certified suppliers	2.53	.847	0.334

Source: Research data, (2021)

CHAPTER FIVE: SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

The chapter outlines a summarized account of research results on supply chain integration approaches and their impacts on performance of manufacturing firms in Kenya, followed by conclusions, recommendations and areas for further studies. Therefore, the chapter constitutes of four distinct sections: summary of findings, conclusions, recommendations, and areas for further studies. The study variables for supply chain integration were customer integration, supplier integration and internal integration which were treated as independent variables.

5.2 Summary of the Key Study Findings

The research study aimed at establishing the supply chain integration approaches adopted by manufacturing firms in Kenya, and investigate influence of supply chain integration approaches on performance of manufacturing firms in Kenya. A total of 40 respondents out of the targeted 40 were responded to the questionnaires sent to them by email resulting to response rate of 100%, which was a good response to the study.

In reference to study findings, it was evident the respondents were highly educated, with the least having attained an education level of bachelor's degree. Further, a greater part of the respondents had worked for over one year and were highly knowledgeable and skilled in handling supply chain responsibilities in manufacturing firms in Kenya.

Descriptive research results indicated that manufacturing firms utilized supply chain integration as a tool towards fostering their performance. Customer integration as

component of supply chain integration included various approaches such as product development, demand planning, information sharing and customer satisfaction. Most of these approaches were frequently utilized by respondents when undertaking various activities to boost the firms' performance. Findings on correlation analysis showed an existence of a positive and significant relationship between customer integration and firm's performance

Regression demonstrated the existence of a significant positive linear relationship between customer integration and manufacturing firms' performance. The research study findings indicated that customer integration either solely or collectively with the other components impacting significantly on firm's performance.

On supplier integration, research findings indicated that it was an approach extensively utilized by firms to enhance their performances. The study investigated supplier integration as a component of supply chain integration and assessed a couple of approaches such as innovation in product development, coordination and organization, and supplier participation. It was evident that the respondents frequently employed these approaches with associated activities undertaken to foster the firms' performance.

Results on correlation analysis showed an existence of a positive and significant relationship between supplier integration and performance of manufacturing firms. Further, on the regression model, supplier integration had a positive and insignificant relationship with firms' performance. Therefore, this showed that supplier integration when regressed collectively with the other two components of supply chain integration; customer integration and internal integration, the influence was positive but insignificant on manufacturing firms in Kenya.

In terms of internal integration, study findings showed that it was an approach applied extensively by the research respondents to increase firms' performance.

The study findings indicated that the respondents frequently carried out these approaches through related activities to enhance the firms' performance.

Based on the regression model, internal integration showed a negative and insignificant relationship with manufacturing firms' performance.

5.3 Conclusions

The research study investigated supply chain integration approaches and their impacts on performance of manufacturing firms in Kenya. Relating the study findings to the core aim, it was evident that manufacturing firms utilize supply chain integration approaches to foster performance.

On the aspect of customer integration as component of supply chain integration, manufacturing firms frequently use various activities that aim at bolstering product development, demand planning, information sharing and customer satisfaction. The study concluded that these approaches were critical since they contributed to a positive and significant influence on firms' performance in Kenya.

On internal integration perspective, it was concluded that it had a negative and insignificant influence on the performance of firms. The study established that manufacturing firms frequently utilized activities and processes aimed at enhancing critical aspects such as information sharing, team work, resource sharing, supplier involvement and demand planning.

In sum, customer integration proved to be the most effective component of supply chain integration in bolstering the performance of manufacturing firms in Kenya. Supplier integration ranked second in effectiveness on the influence in supply chain integration towards realizing increased firms' performance. Finally, despite internal integration leading to negative and insignificant influence on firms' performance, its individual contribution as a component of supply chain integration in firm's contribution remains critical.

5.4 Recommendations

In accordance with the study findings, it was evident internal integration was a limiting component of the supply chain integration hence having negative and insignificant influence on firms' performance in Kenya. Therefore, the study recommends that firms need to frequently invigorate the activities that relate to internal integration. For instance, on the aspect of information sharing, firms need to bolster frequent communication amongst all key unit and departments in manufacturing firms.

It is advisable that manufacturing firms should frequently encourage the workforce to work as a team towards achieving a shared goal while simultaneously putting unhealthy staff competition at bay. Further, firms need to frequently make everyone in a team to be a key player and ensure the decision-making process is a joint activity by the company's leadership. It would be critical if firms frequently ensure there is high level of system integration and robustness among the departments.

Suppliers are important players in internal integration hence firms frequently must have collaborative platforms through which they could partner with customers and suppliers and consequently build strong working partnership with the company suppliers.

Manufacturing firms should frequently meet the drastic dynamics in product volume and ensure changes in product mix meet the customers' demands. Further, the firms should ensure they accelerate emergency customer demands. It would be necessary for the concerned departments reconfigure equipment to comply with urgent orders. On a frequent basis, the manufacturing need to make rapid alterations in manufacturing processes to meet demand dynamics.

5.5 Limitation of the Study

The research questionnaires were issued during the COVID-19 pandemic, and as a result it was challenging to get information through face-to-face interviews where the researcher could have probed for more sensitive and confidential information. Besides, getting responses through email communication was a very tedious task since some of the respondents were uncooperative.

The study was also limited by time and consequently some of the protocols that necessitate a deeper understanding of supply chain integration were not used. For instance, face to face interviews with the managers would have generated deeper details on supply chain integration and other crosscutting issues that would have shed more light on their influence on the performance of manufacturing firms in Kenya.

5.6 Areas of Further study

The research looked into the supply chain integration approaches and impact on performance of the manufacturing firms in Kenya with a special focus customer integration, supplier integration and internal integration. In the context of the study findings, further research is recommended on the following areas:

- a) Findings demonstrated that customer integration, supplier integration and internal integration jointly contributed to 24.5% of the variation in manufacturing firms' performance in Kenya. Consequently, it would be critical for subsequent studies to pick out the possible aspects that could explain the unaccounted 75.5% of the variation in firms' performance.
- b) Data on indicators of firm's performance was collected for only one financial year. It would be prudent for upcoming research to investigate the influence of supply chain integration on indicators of firms' performance such as return on equity (ROE), return on assets (ROA), total sales, profits and lead times (days) over prolonged period of time.
- c) Further research should be done to establish the reason of internal integration registering a negative and insignificant influence on the joint regression model despite firms utilizing it as an approach of enhancing firms' performance.

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APPENDICES

Appendix 1: Letter of Introduction

Irene Mwende

P.O Box 20808 – 00200,

Nairobi.

Dear Respondent,

REQUEST TO COMPLETE A QUESTIONNAIRE FOR RESEARCH PURPOSE

This is to appeal to you to kindly complete the enclosed questionnaire for analysis.

The focus of the study is on supply chain integration and performance of manufacturing firms in Nairobi, Kenya. The submitted data will be handled with the maximum confidentiality and in case you will need the final report of the dissertation, please indicate the same. I request your cooperation in this exercise as you help me achieve my academic goals.

With kind regards,

.....

Irene Mwende

Appendix II: Questionnaire

SECTION A: GENERAL INFORMATION

1. Indicate the name of your organization (optional).....
2. What is your highest level of education?
 - a) Non-Formal Education []
 - b) Primary school []
 - c) Some Secondary []
 - d) University (Bachelors) []
 - e) University (Post graduate) []
 - f) Other (*State*)
3. How many years have you worked in this manufacturing firm?.....

SECTION B: SUPPLY CHAIN INTEGRATION

This section intends to examine the various types of supply chain integration and assess their impact on performance of manufacturing companies in Kenya.

Part 1: Customer Integration

To what extent does the following statements apply to your manufacturing firm? Please indicate your answer as (1=Very Frequent, 2=frequent,3=a bit frequent rarely, 4=Rarely and 5=Never).

Information	5	4	3	2	1
Product Development					
We often get feedback from our clients regarding our quality and delivery performance					
Demand Planning					
Our company ensures it promptly responds to the needs and demands of the customers					
Sharing information					
We have frequent face to face communication with our suppliers					

We strive to ensure high-level of reliability while exchanging Information amongst our business partners					
There is information sharing on situations or occurrences that may influence operations with our business partners					
There is transparency on sharing critical business expertise knowledge, and protocols with key business partner					
Customer satisfaction					
Customer satisfaction measurement and evaluation is a frequent practice in our company					
We strive to ensure put our customers in constant and close contact					
We frequently determine future customer tastes and preferences					
We ensure there is good customer relationships so that they can feel free to be assisted when they are in need					
We value the essence of evaluating the importance of having stable customer relationships					
We often seek information from customers on how to improve our quality, standards, reliability, responsiveness and performance					

Part 2: Supplier Integration

To what extent does the following statements apply to your manufacturing firm? Please indicate your answer as (1=Very Frequent, 2=frequent,3=a bit frequent rarely, 4=Rarely and 5=Never).

Information	5	4	3	2	1
Supplier participation					
We prioritize on selecting only those suppliers who are keen on meeting our quality standards					
We work as a team together with our suppliers to solve problems that arise					
Innovation in product development					

We are keen in helping our suppliers in quality improvements on their products					
Our company helps the suppliers during the course of developing new products					
Coordination and organization					
We consider the inclusion of our main suppliers in the course of scheduling our activities and planning goals.					
Our company puts efforts towards the maintenance of sound and sustainable relationships and co-operation with suppliers.					
Our company is keen on establishing long-term trading relationships with suppliers					

Part 3: Internal Integration

To what extent does the following statements apply to your manufacturing firm? Please indicate your answer as (1=Very Frequent, 2=frequent,3=a bit frequent rarely, 4=Rarely and 5=Never).

Information	5	4	3	2	1
Information Sharing					
There is frequent communication amongst all key unit and departments in our company					
Teamwork					
Our company encourages the workforce to work as a team towards achieving a shared goal while simultaneously putting unhealthy staff competition at bay					
The decision-making process is a joint activity by the company's leadership					
Everyone in the team is a key player					
Resource sharing					
There is high level of system integration among the departments					
Supplier Involvement					

We have collaborative platforms through which we partner with customers and suppliers					
There is a strong working partnership with the company suppliers					
The key suppliers make drastic product volume changes when required to					
The key suppliers make drastic alterations in product mix when needed to					
The key suppliers have maintained a commendable on-time delivery record with the company					
The key suppliers ensure they satisfy the requirements made in our emergency orders					
Demand planning					
Our company meets the drastic dynamics in product volume as per the customers' demands					
The company ensures changes in product mix meet the customers' demands					
Our company ensures it accelerates emergency customer demands					
The concerned departments reconfigure equipment to comply with urgent orders					
The company makes rapid alterations in manufacturing processes to meet demand dynamics					
The company is well equipped with several warehouses, equipment and personnel to address rapid demand changes					
Our company can efficiently adjust warehouse capacity to cater for demand dynamics					
Our company distributors can easily alter the modes and channels of delivery					

SECTION C: PERFORMANCE OF MANUFACTURING FIRMS

1. Please fill in the table on economic performance, social performance and environmental performance for the following years.

Information	5	4	3	2	1
Product quality					
In recent years our company observed an increment on the number of certified suppliers					
In recent years our company observed an increment on the number of products mix					
Lead times					
In recent years our company observed a decrease on the lead times(days)					
Revenue					
In recent years our company observed has realized increase in Profits (Ksh)					
In recent years our company observed has realized increase in Return on Equity (ROE)					
In recent years our company observed has realized increase in Return on Assets (ROA)					
In recent years our company observed has realized increase in Total Sales					
Customer satisfaction					
In recent years our company observed has realized a decrease in recordable customer complaints					

Thank you for your cooperation.

Appendix III: Manufacturing firms Sampled in Nairobi, Kenya

Small
1. Afro Plastics (K) Limited
2. Avery East Africa Ltd
3. Buyline Industries Limited
4. City Clock (K) Ltd
5. Colourprint Limited
6. Galaxy Paints and Coating Co Ltd
7. Kamili Packers Ltd
8. Rosewood Furniture Manufacturers
9. Safepak Limited
10. Tri-Clover Industries (K) Ltd
11. Twiga Stationers and Printers Ltd

Medium

1. Canon Chemicals Limited
2. Coopers Kenya Limited
3. Diversey Kenya
4. Eastern Produce Kenya Ltd
5. Ellams Products Ltd
6. Kenpoly Manufacturers Limited
7. Kenya Builders and Concrete Ltd
8. Kenya Wine Agencies Limited
9. Kim-Fay East Africa Ltd
10. Nairobi Flour Mills Ltd
11. Pembe Flour Mills Ltd
12. Superfoam Ltd

Large

1. Apex Steel Ltd
2. ASL Limited
3. Basf East Africa Limited
4. Beta Healthcare International
5. British American Tobacco Kenya Limited
6. East African Breweries Limited
7. Farmers Choice
8. Glaxo Smithkline Kenya Ltd
9. Haco Industries Ltd
10. Impala Glass Industries Ltd
11. Kenya Seed Company Ltd
12. Mastermind Tobacco

13. Nairobi Bottlers
14. Paperbags Limited
15. PZ Cussons EA Ltd
16. Unga Group Ltd
17. Vitafoam Products Limited

Source: Kenya Association of Manufacturers, (2020)