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# Effects of supply chain management strategies on competitive advantage on food and beverage processing companies

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Effects of Supply Chain Management Strategies on Competitive Advantage  
in Food and Beverage Processing Companies  
in Nairobi County



Master of Commerce

2016

Effects of Supply Chain Management Strategies on Competitive Advantage  
in Food and Beverage Processing Companies  
in Nairobi County

Sarah Waithira Kariithi

56916

Thesis Submitted to School of Management and Commerce in partial Fulfilment  
of the Requirements for the Degree of Masters of Commerce at

Strathmore University

VT OMNES VNVM SINT

School of Management and Commerce  
Strathmore University  
Nairobi, Kenya

May, 2016

## **DECLARATION**

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

**Sarah Waithira Kariithi**

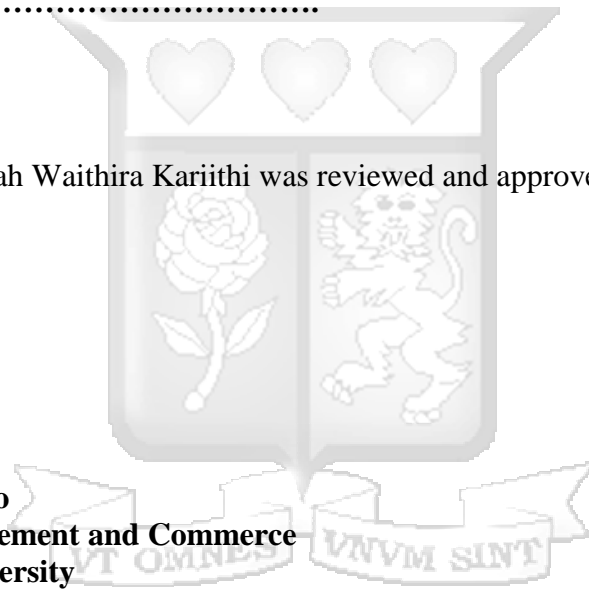
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### **Approval**

The Thesis of Sarah Waithira Kariithi was reviewed and approved for examination by the following:

**Dr. Hellen Otieno**  
**School of Management and Commerce**  
**Strathmore University**



**Head of School of Management and Commerce**  
**Faculty of Commerce**

**Dean of School of Graduate Studies**

## ABSTRACT

The purpose of this study was to analyze effects of supply chain management strategies (SCM) on competitive advantage in the food and beverage processing companies in Nairobi County. The food and beverage industry plays a unique role in expanding economic opportunities because it is universal to life and health however, the industry's performance is below par in Nairobi and is facing intense competition from the imported food stuffs from overseas. There is also increasing evidence that most companies in the food and beverage industry have a long way to go before they can realize their full potential for a truly linked SCM system. For instance, most logistics executives do not know exactly how SCM creates value for customers because this phenomenon has not been examined exhaust-fully. Moreover studies done in different geographical areas have diverse approaches of methodologies, scopes and variables therefore resulting in varied findings that may not apply in Nairobi in analyzing effects of SCM strategies on competitive advantage hence the need for this study.

The study adopted quantitative approach with food and beverage processing companies as the target population as listed in the Kenya Association of Manufacturers (KAM) directory. Detailed information about perceptions, opinions and attitudes was obtained using a questionnaire administered by the researcher among these companies. Linear regression and correlation statistics were applied to investigate relationship between SCM Strategies and competitive advantage.

The study found that to a large extent companies are striving to attain competitive advantage over their competitors. Supply chain integration (1.664) had the greatest effect on competitive advantage followed by supply chain collaboration (0.703) as revealed by the magnitude of their coefficients. Supply chain agility (0.375) had the least effect on competitive advantage. The study concluded that companies' competitive advantage is achieved through implementing supply chain collaboration, supply chain agility and supply chain integration strategies in their networks. Competitive advantage is achieved when companies manage an integrated chain where customer is the focus, information requirements, physical logistics and chain participants are managed. Company's brand

equity, competitive positioning and forging good customer relationships are companies' major sources of competitive advantage.

The study recommends that the companies should develop a clearly laid out policies and procedures for handling customers' concerns and/or complaints. Companies should develop interactive websites to achieve effective information sharing and concerns can be addressed in real time. It is imperative for companies develop policies and procedures guidelines in order to ensure continuous product research and development with the aim of satisfying customer ever changing demands and achieve competitive advantage over their competitors. There is need for management to improvement on the existing systems to enhance integration with trust as a key component. Companies have their strengths in supply chain collaboration and supply chain integration however it is the synergy of all three SCM strategies that facilitates a company achieving competitive advantage. This way, it becomes difficult to imitate the same strategies and facilities within a supply chain hence it is difficult to duplicate an exact supply chain keeping the company ahead and differentiated from its competitors.



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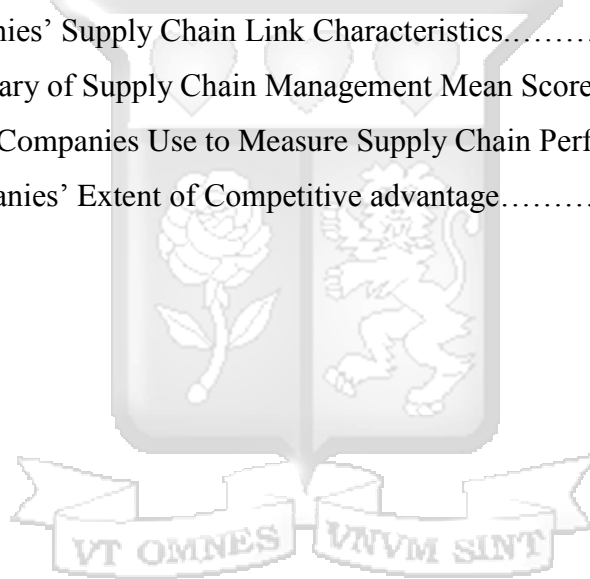
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## ACKNOWLEDGEMENT

I wish to thank my family for their encouragement and moral support in the course of my studies. I appreciate Dr. Hellen Otieno for her timely and wise counsel during the preparation of this project report. God bless you.

To all managers in food and beverage companies who took their time and for thoughtful co-operation to fill the questionnaires, I say thank you.

To God be the glory.



# CHAPTER ONE

## INTRODUCTION

### 1.1 Background of the study

Supply chain management (SCM) is a popular concept among researchers (Cooper, Lambert, et al., 1998; John et al., 2001) as a result of trends in global sourcing, an emphasis on time and quality-based competition, and their respective contributions to greater business environmental uncertainty. Corporations have turned increasingly to global sources for their supplies which have forced companies to look for more effective ways to coordinate the flow of materials into and out of the company (John et al., 2001). In this study, SCM is defined as a strategic view of material and distribution management that shows the benefits to the individual companies from enhanced performance of the supply chain as a whole through the lens of the business processes across functional and corporate borders to the ultimate consumer (Kemppainen and Vepsalainen, 2003).

Competitive advantage as defined by Porter, (1990) is the ability of firms respond to conditions in their marketplaces by modifying their competencies (internal capabilities and linkages with suppliers and associates) and the ways in which they position themselves in relation to their competitors. O'Farrell, Hitchens and Moffat, (1993) argue that each of these components are intricately related and ultimately contributes to company's competitive advantage hence creating economic value rather than being something that is used within strategy, they see competitive advantage as the objective of strategy.

Bourlakis and Weightman, (2004) argue that SCM is widely recognized as the key in many industries to cost reduction as well as service enhancement because first, the business model in the past was often based upon a philosophy of vertical integration whereby upstream and downstream facilities and activities were owned and managed by one organization. Today all activities other than our core business are outsourced. The extent of this outsourcing in some instances is such that we refer to supply chains as supply 'networks'. Second, globalization of industry is a major driver. The norm 'local for local' manufacturing and distribution is being replaced by global sourcing and

focused manufacturing in fewer but bigger facilities. Third, there is growing demands placed upon suppliers by ever more powerful retailers. Retail concentration is now a fact of life in many markets and is increasing as we see the emergence of global retailers. Their demands for just-in-time delivery, for higher product quality and tailored logistics solutions means there must be review of supply chain strategies (Bourlakis and Weightman, 2004).

Bourlakis and Weightman, (2004) discuss UK food manufacturers have excelled in producing new and interesting products which meet consumers' needs. Innovation in chilled ready meals is a good example of this. However, the need to be highly price competitive has, to a certain extent, driven some food manufacturing to other countries. Certain areas of the UK food manufacturing sector now find it difficult to compete, but not because they are inefficient or lack innovation. The major difficulties include the lower cost of labour elsewhere, particularly beyond Europe. Another is the unstoppable growth in demand variability - consumer demand for convenience, which can often manifest itself in a decision to eat out, rather than cook at home. Most such retailers are highly focused on giving their customers what they want, but with the growth in eating out, the competition is coming not just from each other but from new quarters – the take away, restaurants and hotels (Manuj, and Mentzer, 2008).

In Africa, Nigeria is endowed with abundant human and natural resources which include expanse of fertile land, moderate plantation cum irrigation farming, extensive sea-coast, long irrigative water and mineral deposits, etc. This is in addition to geographically located oil-rich belt, gulf of Guinea that is typical of equatorial type of regions. However, her food and beverage production performance is characterized by uncoordinated results in Agricultural production, with partial success in foods and industrial crops such as rubber, cocoa, dye; oil-seeds etc call for actionable research (Ibidunni, 2009).

Kenyan food-processing sector remains the largest component of the manufacturing industry in terms of structure, economic contributions, and performance within the manufacturing sector (KBS, 2015). Export Processing Zones Authority (EPZA, 2015),

noted that the sector accounts for about 24% of Kenya's Gross Domestic Product. Further, an estimated 75% of the population depends on the sector either directly or indirectly (EPZA, 2015). Kenya's main cash crops are tea, coffee, flowers, fruits, pyrethrum, tobacco, sugar, dairy products, sisal, and wattle. In 2003, tea, coffee and horticultural products contributed fifty five percent of exports revenue (EPZA, 2015).

The industry is affected by many challenges including the economic slump, lack of or low value addition of its products, rising food prices, increasing transportation costs due to a rise in oil prices, and decline in consumers, low adoption of information systems, inflexible internal operations/processes and lack of properly coordination among industry players (Food and Beverage Industry Global Report, 2010). Further, the sector has experienced a gradual decline for instance 3.9 percent from 2007, but still generated over a third (33.4 per cent) of the total manufacturing production (KBS, 2009). This can be attributed to high production costs, high duty on inputs, duplication of laws and regulatory agencies, competition from sectoral association, inadequate supplies of raw materials, high material handling, distribution and marketing costs, slow development and implementation of policies, and the use of obsolete technology and skills (KAM, 2014).

The food and beverage industry plays a unique role in expanding economic opportunities because it is universal to life and health however, the industry's performance is below bar in Nairobi and is facing intense competition from both imported and exported of food stuffs from overseas (Okello et al., 2014). For instance, according to Food and Agriculture Organization of the United Nations key players in the world tea exports like United Kingdom and Germany are not tea producers themselves but generate up to fifty percent of Kenya tea export earnings through value addition (FAOSTAT, 2008).

In addition, Robert, (2009) as quoted by Burua, (2010) cites five major supply chain management challenges in Kenya; cost containment, rapid change in business environment which is rocking supply chain executives' ability to adapt especially with conventional supply chain management strategies and designs. Lack of clear visibility

whereby flooded with more information than ever, supply chain executives still struggle to “see” and act on the right information. Risk management ranks remarkably high on the supply chain agenda as well. Low customer intimacy despite the demand-driven slogans, companies are better connected to their suppliers than their customers. Contrary to initial rationale, globalization has proven to be more about revenue growth than cost savings. As compliance mandates, suppliers and information flows multiply, supply chains are becoming more complex, costly and vulnerable.

According to Li et al., (2006) one key component in managing and alleviating these challenges is through companies managing their supply chains. Where collaboration with supply chain participants and involving them in product development can lead to low costs and risk management within supply chains. Management teams will become more agile in that they will share information and receive feedback hence they are better placed in making decision and, addressing ever changing business environment and customers’ demands. Companies will seek ways to integrate their information systems, logistics and supply chain performance hence achieving competitive advantage (Tan, 2002).

### **1.1.1 Competitive advantage**

Competitive advantage is derived from customer value which is created through collaboration and cooperation to improve efficiency (lower cost) or market effectiveness (added benefits) in ways that are most valuable to key customers. Value is not inherent in products or services, but rather is perceived or experienced by the customer (Woodruff, 1997). Therefore, in order to compete through creating customer value, a firm must understand, and deliver the value perceived as important by its customers. By satisfying customers and achieving competitive advantage, firms in a supply chain influence customers to make choices and behave in ways that improve the financial performance of the supply chain and the firms within it (John et al., 2001).

Customers are demanding products consistently delivered faster, exactly on time, and with no damage (John et al., 2001). Companies are competing more today on the basis of time and quality. However, getting a defect-free product to the customer faster and more

reliably than the competition is no longer seen as a competitive advantage, but simply a requirement to be in the market. Effective SCM has become a potentially valuable way of securing competitive advantage and improving organizational performance since competition is no longer between organizations, but among supply chains (Li, et al., 2006).

Powell, (2003) argues that competitive advantage can be realized from superior performance when considering a firm's accounting-base, finance-base, or even market-base. However, Arend, (2003) disagrees with him because in carrying out SWOT analysis, many companies' weaknesses fail to have any positive use to firms. He further argues that one firm has higher returns because its rivals, its employees, its suppliers, its regulators, its distributors, and its other affected parties cannot appropriate enough of the value generated by that firm, regardless of how hard they try. It follows that specific means for gaining superior performance will always be changing and adapting due to such competitive pressures.

### **1.1.2 Supply Chain Management**

As a popular term, Supply Chain Management (SCM) has diversity of meanings though there are areas of consensus. Definition of SCM both in academia and practice bears inconsistencies. Definition of "supply chain" is more common across authors than the definition of supply chain management (Cooper and Ellram, 1993; La Londe and Masters, 1994; Lambert, Stock and Ellram, 1998). SCM in management philosophy suggests the boundaries of SCM include not only logistics but also all other functions within a firm and within a supply chain to create customer value and satisfaction, and for the company to realize competitive advantage in its environment (John et al., 2001). The short-term objective of supply chain management strategy is to increase quality and productivity while reducing inventory and cycle time; its long-term strategic goals are to increase customer satisfaction, market share, low unit cost and profits for all members of the supply chain network (Horvath, 2001). SCM long-term goals requires, joint relationships with suppliers across multiple tiers (Monczka, Trent and Handfield, 1999; La Londe and Masters, 1994).

Different studies have different results and conclusions, theoretical and methodology approaches. Most of these studies are conducted in Europe for instance, in USA (Tan, 2002) in Germany (Henriksson and Nyberg, 2005) among others. These countries have sophisticated market structures that are not a match for Africa or specifically Kenya for instance, UK market comprises of clubs of smaller organizations securing bulk purchasing power (Harland and Lee, 2000). Most authors in their studies concentrate on different industries such as automotive industry (Lamming, 1993) textile industry (Dore, 1983), manufacturing industries (Hakansson, 1987).

Researchers have derived different findings on SCM as a result of different methodologies – qualitative or quantitative. Li et al., (2006) say higher levels of SCM practice can lead to enhanced competitive advantage and improved organizational performance in their empirical study. In their qualitative study, Davis, (1993); Morgan, (1997) cite that manufacturing enterprise managed as a supply chain is capable of concurrently lowering cost and increasing service to achieve differentiation and hence gain competitive advantage. However, in both qualitative and quantitative study Harrison and New, (2002) observed it is futile to try to make sense of developments in the logistical and operational features without acknowledging the rapid introduction of differentiated products.

Global orientation and increased performance-based competition, combined with rapidly changing technology and economic conditions, all contribute to marketplace uncertainty. The uncertainty requires greater flexibility on the part of individual companies and supply chains, which in turn demands more flexibility in supply chain relationships (John et al., 2001). Walker et al., (2000) further cites the principle component enabling agility is the skills of the management making companies more responsive to changes in the market place. Goals to achieving successful supply chains are speed-to-market, agility, and flexibility to respond more quickly to actual customer demand, while keeping cost at a minimum. In order to make the goals, it is necessary to integrate the processes at the operational level.

SCM activities dictate closer coordination with suppliers and distributors. Suppliers are connected through long-term relationships, each performing an activity to his best capability (Walker et al., 2000). Collaboration is not only seen in passive exchange of information but also in a more proactive approach through common planning and synchronization of activities and business processes (Henriksson and Nyberg, 2005). Historically, goods and services have been distributed through networks in which loosely aligned firms have bargained at arm's length, negotiated aggressively over price and other conditions of sale, and otherwise behaved autonomously. There is a greater likelihood for conflict (competition) in the transaction channel than in the physical distribution channel especially conflict can occur in bargaining for price or terms.

Different scholars have conceptualized supply chain management practices differently. Tan's, (2002) conceptual understanding reveals SCM practices could be categorized into six constructs addressing various aspects of supply and materials management issues. Li et al., (2006) conceptualizes and develops five dimensions of SCM practice (strategic supplier partnership, customer relationship, level of information sharing, quality of information sharing, and postponement) and tests the relationships between SCM practices and competitive advantage. Another study highlights a growing recognition that SCM strategies embedded in large firms are strategic sourcing, partnering, lean manufacturing, communication, postponement, responsiveness and outsourcing (Bolo, 2011). Different researchers have taken different theoretical approach in their studies.

Researchers have used different research tools of empirical analysis. Exploratory factor analysis tool has been used for exploring constructs where there is a lack of theory to support a priori models Tan et al., (2002. Henriksson and Nyberg, (2005) approached SCM as a Competitive advantage in two stages: Resource-based view (RBV) and dimensions of SCM practices concepts. Their findings indicated SCM can be a source of competitive advantage partly because of utilization supply chain practices although many operational obstacles are experienced and need to be removed for proper strategy implementation.

## 1.2 Statement of the problem

Managers and researchers agree that supply chain management is critically important to competitive positioning (Porter and Millar, 1985; Cooper, Lambert, and Pagh, 1997; John et al., 2001) however realization of competitive advantage in their Supply chains is low. There is no comprehensible agreement on defining SCM concept. SCM deals with the total flow of materials from suppliers through end users (John et al., 2001; Cooper et al., 1997). SCM consists of two or more firms in a supply chain entering into a long-term agreement; the development of trust and commitment to the relationship, integration of logistics activities involving the sharing of demand and sales data (La Londe and Masters, 1994).

Studies on SCM conducted in different geographical areas and time focus on different business sectors. For instance, most of these studies are conducted in Europe where geographical set up is different from one in Africa. These countries have sophisticated market structures that are not a match for Africa or specifically Kenya for instance, UK market comprises of clubs of smaller organizations securing bulk purchasing power (Harland, 1996). Furthermore authors in their studies concentrate on different business sectors such as automotive industry Lamming, (1993) textile industry (Dore, 1983), manufacturing industries (Hakansson, 1987).

There is no agreement within the body of researchers on the most crucial SCM strategies approaches and findings. For instance, effective SCM has become a potentially valuable way of securing competitive advantage and improving organizational performance since competition is no longer between organizations, but among supply chains. There is need for establishment of effective SCM practices that will enhance competitive advantage to ensure that an organization can deliver against its strategic objectives (Li et al., 2006). However, it is futile to try to make sense of developments in the logistical and operational features without acknowledging speed-to-market, agility, flexibility to respond more quickly to actual customer demand and the rapid introduction of differentiated products (Li et al., 2006).

According to Bolo (2011) organizations are moving from the adversarial kind of transactions to the use of a few qualified suppliers with close relationships, a trend attributed to: the customers' demand for higher quality; wider range of products; shorter time to market; and faster deliveries. Innovation in chilled ready meals is a good example (Bourlakis and Weightman, 2004). There is also increasing evidence that most companies in the food and beverage industry have a long way to go before they can realize their full potential for a truly linked SCM system. For instance, most logistics executives do not know exactly how SCM creates value for customers because this phenomenon has not been examined exhaust-fully (Daugherty, 2011).

The industry is affected by many challenges including the economic slump, lack of or low value addition of its products, rising food prices, increasing transportation costs due to a rise in oil prices, and decline in consumers, low adoption of information systems, inflexible internal operations/processes, lack of properly coordination among industry players, Food and Beverage Industry Global Report, (2010), low cost containment, rapid change in business environment, and low customer intimacy (Burua, 2010).

Authors agree that supply chain strategy is important for corporate strategy in achieving competitive advantage (Davis, 1993; Morgan, 1997). Successful supply chain requires an integration of all the components involved into a combination of business processes within and across organizations. (Samaranayake, 2005). Whereby collaboration within the chain is an active involvement in exchange of information but also in a more proactive approach through common planning and synchronization of activities and business processes (Henriksson and Nyberg, 2005). Managers are able to respond to and make quick decisions to fulfill customers' demand for convenience. As a result of challenges companies are facing and differences in findings cited in different studies, it is necessary to conduct this study.

### **1.3 Objectives**

#### **General objective**

The purpose of this study is to analyze effects of SCM strategies on competitive advantage in food and beverage processing companies in Nairobi County.

#### **The specific objectives are:**

1. To establish the extent of competitive advantage in food and beverage processing companies in Nairobi County.
2. To analyse effects of supply chain collaboration on competitive advantage in food and beverage processing companies in Nairobi County.
3. To analyse effects of agile supply chains on competitive advantage in food and beverage processing companies in Nairobi County.
4. To analyse supply chain integration on competitive advantage in food and beverage processing companies in Nairobi County.

### **1.4 Research Questions**

1. What is the extent of competitive advantage in food and beverage processing companies in Nairobi County?
2. What are the effects of supply chain collaboration on competitive advantage in food and beverage processing companies in Nairobi County?
3. What are the effects of agile supply chains on competitive advantage in food and beverage processing companies in Nairobi County?
4. What are effects of supply chain integration on competitive advantage in food and beverage processing companies in Nairobi County?

### **1.5 Scope of the study**

Food and beverage processing companies have are embracing SCM strategies in order to realize and/or enhance competitive edge. Hence they provided a relevant sample size for the study. The geographic coverage will enable the researcher deal with the key decision makers based at the headquarters for most companies. This is also in consideration of time and cost constraints as the research is intended to take place within two weeks after the approval of the proposal.

## **1.6 Significance of the study**

### **Supply chain logistics practitioners**

This research is beneficial to processing companies' supply chain logistics practitioners to enable them make informed decisions in order to increase revenue, build win-win relationships with key stakeholders, develop solutions to developing strategic SCM practices and increasing revenue for stakeholders.

### **Policy Makers**

This research is beneficial to policy makers and policy implementing institutions in that achieving beneficial supply chain collaboration, agility and integration within supply chains, will enhance acceptance and easy implementation of policies within manufacturing industry.

### **Customers**

Customers will benefit by having access to not only to quality defect-free products but also timely deliveries to point of sale outlets. When companies collaborate with their supply chain participants, integrate all supply chain components involved in business processes and managers are able to respond to and make quick decisions to fulfill customers' demands.

### **Researchers and Academicians**

This study is beneficial to researchers and academicians because it adds to the body of knowledge. It will also provide reference material for further research.

# CHAPTER TWO

## LITERATURE REVIEW

### 2.1 Introduction

In chapter two, the literature review comprises: subsection one, the theoretical framework that discusses common theories on which the study is anchored. It is followed by subsection two, empirical literature review and subsection three a chapter summary-conceptual framework.

### 2.2 Theoretical Framework

Competitive strategy focuses on ways that firms can create imperfectly competitive product markets in order to obtain greater than normal economic performance. There are theories that shed light on ways to enhance competitive advantage. In the first subsection we discuss three theories namely strategic factor market theory, resource-based view (RBV), and Institutional theory.

#### 2.2.1 Strategic Factor Market Theory

Strategic factor market theory (Barney, 1986) holds that firms cannot appropriate gains from the deployment of valuable resources unless they have superior expectations about their future value or are beneficiaries of luck. Firms can competitively acquire resources for less than the surplus they create in combination with other firm resources and capabilities, when they exhibit superior complementarity to the target resources relative to competing firms (Barney, 1986; Makadok and Barney, 2001). On the other hand, instead of searching for resources whose value is unknown to all players, managers can search for resources whose value in combination with their firms' resources and capabilities can be matched by few players in the business environment (Peteraf and Barney, 2003).

Strategic factor market theory suggests that “home grown” SCM capabilities — that is, capabilities built organically, within the boundaries of a firm — are more likely to be sources of strategic factor market imperfection than if such capabilities are acquired on

competitive factor markets (Ramsay, 2001). In strategic factors market logic, the market conditions under which capabilities can be sources of profits are discussed (Hunt and Davis, 2008). For example, Walmart's supply chain management system, a system that is both socially complex and path dependent in nature, has been a source of advantage for Walmart for some time—at least since the 1960s (Ghemawat, 1986). Also, Toyota's purchasing system, a system that has helped Toyota implement its lean manufacturing approach, has both path dependent and tacit attributes which have reduced the speed at which other automobile firms have been able to imitate it (Iyer et al., 2009). Strategic factor market theory is important because it enables unique value-creating strategies, over time; enabling its managers to exploit different levels of economic rent (Powell, 2003).

### **2.2.2 Resource-based view (RBV) Theory**

A resource-based view proposes that resource selection and accumulation are a function of both within firm decision-making and external strategic factors (Conner, 1991). Resources are defined as “anything that enables the firm to conceive of and implement strategies that improve its efficiency and effectiveness” (Barney, 1991, p.101). Barney is generally acknowledged as the first to formalize the resource-based literature into a comprehensive theoretical framework. In his 1991 article, Barney argued that firms that possess and exploit resources and capabilities that are valuable and rare will attain a competitive advantage. He further divides firm's resources into three categories: human capital resources, organizational capital resources and physical capital resources (Barney, 1991).

Resource-based theory is relevant because it points to the importance of heterogeneous purchasing and supply chain management capabilities in creating the imperfectly competitive markets that makes competitive advantage in product markets possible. These capabilities are valuable, and because — when acquired from outside the firm— this value is more likely to be widely known, the price of acquiring these capabilities will quickly rise to equal their value in implementing product market strategies. Further Barney, (2012) argues firms that have been able to build their purchasing and supply chain management capabilities internally, away from the competitive pressures can use

these capabilities to gain competitive advantages, assuming, of course, that these capabilities generate more accurate expectations about the future value of the resources and capabilities a firm acquires compared to other firms (Barney, 2012).

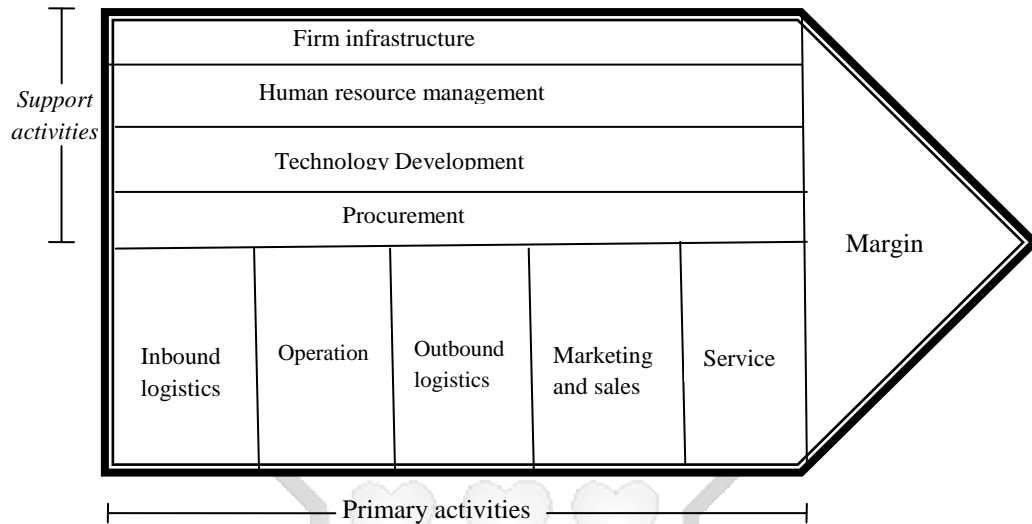
The second reason why resource-based theory is a relevant theory is because it can be used to predict the role of SCM for understanding sources of competitive advantage (Barney, 1991). Do these processes within firms have the attributes that are likely to create value, be rare among competitors, be costly to imitate, and have no close substitutes (Barney, 1991)? Resource market characteristics include whether resources are scarce, unique, imitable durable, idiosyncratic, nontradeable, intangible and nonsubstitutable (Conner, 1991). The value of resources and capabilities depends on the market within which a firm operates, the rarity, inimitability, and substitutability of resources and capabilities depends much more on the extent to which they are developed in unique historical circumstances (Barney, 2012).

In relation to Resource-based perspective, competitive advantage is an outcome of discretionary rational managerial choices, selective resource accumulation and deployment, strategic industrial factors and factor market imperfections. Resource-based view assumes that economic motives drive resource procurement decisions and that economic factor in the firm's competitive and resource environments drive firm conduct and outcomes (Oliver, 1992).

### **2.2.3 The Value Chain**

Value chain can be used to examine the various activities of a firm and how they interact in order to provide a source of competitive advantage by, performing these activities better or at a lower cost than the competitors (Henriksson and Nyberg, 2005). A company's value chain is taken to be the conceptualization of the core processes and activities which represent the organization in process terms. They capture the activities which start and end in the organization and link with other organizations in the chain (Rainbird, 2004). Value chain comprises of primary and supported (which are mainly outsourced) activities as shown in figure 2.1.

**Figure 2.1: Value Chain**



Source: Michael Porter, *Competitive Advantage*, (1985).

SCM on the other hand includes integration of all the activities, functions and facilities involved (either directly or indirectly) in the flow and transformation of goods and services from the material stage to the end-user (Handfield and Nichols, 1999). This value chain principle is relevant to companies because it integrates the various structures and processes of the supply chain, facilitating and coordinating the flow of goods and services and the flow of information necessary to provide the value that customers demand (Rainbird, 2004).

This study adopts resource-based theory that emphasizes the importance of heterogeneous supply chain management capabilities in creating the imperfectly competitive markets that makes competitive advantage in product markets possible. The value of resources and capabilities depends on the market within which a firm operates (Barney, 2012).

### **2.3 Empirical Literature Review**

There are many SCM strategies in research work however three common ones are presented in various studies. These strategies include: supply chain collaboration, supply chains agility and supply chain integration.

### 2.3.1 Extent of Competitive Advantage

Barney, (1991) lists four essential requirements of or a resource/skill to be a source of competitive advantage (CA): It must be valuable; it must be rare among a firm's current and potential competitors it must be imperfectly imitable; and there must not be any strategically equivalent substitutes for this resource/skill. If a company has these characteristics then it is said it has achieved competitive advantage over its competitors (Barney, 1991; Ketchen, 2004).

Firm resources and skills are considered valuable when they aid a firm in formulating and implementing strategies that improve its efficiency and/or effectiveness. However, if certain resources/skills are possessed by a large number of potential competitors, they cannot be a source of competitive advantage. Valuable and rare organizational resources/skills can be sources of CA only if firms do not possess these resources, cannot obtain them and the critical resources are imperfectly imitable (Barney, 1991). The final requirement for a resource/skill to be a source of CA is that the resource/skill be nonsubstitutable. Substitutability can take two forms. If a competitor cannot duplicate a firm's resources/skills exactly, but can substitute similar resources that enable it to formulate and implement identical strategies and use very different resources/skills as strategic substitutes then a resource/skill cannot be a source of CA (Barney, 1991).

According to Martin and Grbac, (2003); Porter, (1985) competitive advantage is gained by: reducing costs or by differentiating and increasing effort on cross-firm co-operation, responsiveness (agility) to customers' needs. "If the company strives to meaningful cost reductions, more efforts on cross-firm co-operation, co-ordination, collaboration and integration are required (Flint, 2004). There are many sources of competitive advantage however; Bharadwaj, Varadarajan and Fahy, (1993) cite eight sources of competitive advantage namely: barriers to imitation, competitive positioning through cost leadership and differentiation, cost and demand Synergies, customer value which is buyers' perceptions of value represent, product, process, and managerial innovations, performance outcomes, brand equity and relationships/pre-commitment contracts firms.

Barriers to imitation characterized by isolated mechanism, uncertain imitability, and resource/skill stock. Competitive positioning can be achieved through cost leadership and differentiation. Cost leadership entails performing most activities at a lower cost than competitors while offering a parity product. Product differentiation entails customers perceiving a consistent difference in important attributes between the firm's offerings and its competitors' offerings.

Cost and demand Synergies are achieved realized when a firm is able to market entirely new services with little added costs through networks or systems previously established for current services. Communications and information-handling technologies often facilitate distribution of a broader set of services. Customer value which is buyers' perceptions of value represents a trade off between the quality and benefits they perceive in the product relative to the sacrifice they perceive by paying the price. Product, process, and managerial innovations can be used to gain competitive advantage, to the extent that the underlying technological innovations remain proprietary (Bharadwaj, Varadarajan and Fahy, 1993).

Performance outcomes can be expected to lead to superior market place performance (e.g., market share, customer satisfaction) and financial performance for instance, return on investment, shareholder wealth creation. Brand equity is a set of brand assets and liabilities linked to a brand, its name and symbol that add or subtract from the value provided by a product to a firm and/or that firm's customers. Customer relationships/pre-commitment contracts firms can enhance their performance by cultivating new customers and/or retaining their existing customers and selling more to them. Cultivating new customers is generally more expensive than retaining existing customers particularly in mature markets (Bharadwaj, Varadarajan and Fahy, 1993). This study will focus on four sources of CA namely a) customer's value between the quality and benefits they perceive in the product in comparison the price they pay. b) Competitive position through cost leadership and differentiation. c) Cultivating relationships and/or pre-commitment contracts firms in order to enhance their performance and retain existing customers. d) Brand equity is our source of competitive advantage.

## **2.3.2 Effects of Supply Chain Collaboration on Competitive Advantage**

Supply chain collaboration entails cooperation among supply chain participants. This section discusses three key supply chain collaboration strategies namely strategic supplier partnerships, customer relationships and cooperation with competitors.

### **2.3.2.1 Strategic supplier partnerships**

Co-operation within the supply chain is often referred as within the supply chain collaboration (Walker et al., 2000). In the late 1980s, it was established that collaboration with suppliers could lead to competitive advantage (Ekenstedt, 2004). Suppliers are connected through long-term relationships, each performing an activity to his best capability (Walker et al., 2000). Long-term relationships between companies and supplies are often designed to leverage the strategic and operational capabilities of supply chain members. For instance, joint capabilities could help in producing differentiated products. These relationships have to be maintained positive even when the companies are facing economic challenges (Handfield and Nicholas, 2004). Competitive advantage could be achieved if the company manages its' suppliers strategically, operational performance in terms of dependability, flexibility, cost and quality. Collaboration with suppliers can lead to competitive advantage because successful companies have increased amount of suppliers, long-term supplier contract and consolidated efforts within the chain (Ekenstedt, 2004).

SCM collaboration will lead to competitive advantage by offering exchanges that allow members of the supply chain to cooperate in the design and development of products, manufacturing processes, logistics and distribution strategies (Horvath, 2001). In addition, it will offer value-added capabilities to their supply chain actors including commerce, business and enablement services (Walker et al., 2000). Involving suppliers in product design may reduce quality problems, gain loyalty from these suppliers and prevent competitors getting access to the same supplier and the same sourced products (Ramsay, 2001). Collaboration is not only seen in passive exchange of information but also in a more proactive approach through common planning and synchronization of activities and business processes (Henriksson and Nyberg, 2005).

Li et al., (2004) discuss the key to functioning supplier relationships is trust. Companies need to realize that even non-technical issues, like trust are of importance. They further emphasize that transparency is required in order to build trust implying a precise and timely information exchange between supply chain members, so that everyone is able to work from the same information technology enhances supplier relationships for instance, strategies like cooperative buyer-supplier relationships, tools like e-procurement, on-line reverse auctions and supplier selection and management.

Specialization in channels creates dependence among participants. Each firm depends on the others in the channel to carry out its functions efficiently and economically, cooperation among members is essential (Allerheiligen and Gill, 1996) for a company achieving competitive advantage. Co-operatively organized channels are often able to achieve scheduling effectiveness, because the requirements and intentions of member units can be predicted and controlled. Consequently, manufacturing, warehousing, and promotional activities can be scheduled to minimize total costs (Allerheiligen and Gill, 1996).

There is a greater likelihood for conflict (competition) in the transaction channel than in the physical distribution channel especially conflict can occur in bargaining for price or terms. However, there are readily observable benefit for instance there is decline in distribution costs which in most cases are more than half of all costs of doing business (Horvath, 2001). Competitive advantage will no longer be achieved by the ability of a business to erect technological barriers to rivals, but in its ability to leverage the intelligence inherent in SCM network and transform existing business processes (Horvath, 2001).

#### **2.3.2.2 Customer relationships**

Customer relationships are given pre-eminence because it is the goal of every SCM to create customer value. Competitive advantage is gained by creating value to immediate down-stream customers and their customers, ultimately to the end-user. Companies must see customer relationship as a potential source of competitive advantage and that all practices for managing customer relationships could be sources of CA (Flint, 2004). Li et

al., (2004); Daugherty, (2011), suggests managing customer relationships include activities such as managing customer complaints, building permanent, long-term relationships and improving customer satisfaction.

Long-term relationships with customers can reduce demand uncertainty, improve its customer service and decrease costs for stocking and warehouse management (Ramsay, 2001). Customer learning will ease predicting customer needs both regionally and globally enhancing competitive advantage. In addition, while the market environment is getting increasingly dynamic, the ability to develop and successfully manage relationships with customers is emerging as a key capability and a source of sustainable competitive advantage (Bolo, 2011).

According to Ramsay, (2001) companies that involve their customers on issues related to quality and material flows could enhance their operational performance in terms of speed and delivery accuracy. Although companies have customer information, they tend to ignore it. Customer information would be gaining company's competitive advantage; customers' forecasts, order statuses, sales statistics and marketing campaigns are few examples. To build long-term and profitable relationships with customers, a company needs mutual benefit and trust.

#### **2.3.2.3 Cooperation with competitors**

Against the norm, Yusuf et al., (2004) suggests that co-operative alliances with competitors should be established. It is through these interactions that agility is realized through the process of integration and inter-independence. Though not common, a company can find itself delegating aspects of production to competitors as is the case in automotive manufacturing where companies share production plants in different locations.

#### **2.3.3 Effects of Supply Chain Agility on Competitive Advantage**

Agility means using market knowledge and a virtual corporation to exploit profitable opportunities in a volatile marketplace (Naylor, Naim, and Berry, 1999). In order to

achieve competitive advantage, agile companies are market-driven, often investing in product research and striving towards short development and introduction product cycles. The requirement for organizations to become more responsive to the needs of customers, the changing conditions of competition and increasing levels of environmental turbulence (Power, 2005).

An agile supply chain has a high capability to flexibly adapt to the fast-changing environment. With this capability, a company is able to accomplish its supply chain goal; gain customer satisfaction leading to achieving competitive advantage (Yusuf et al., 2004). They further argue that competitive advantage can be achieved when an agile company first, has modern information technology which enables it to react quickly to the fluctuations in product demand and sourcing problems. Second, performs all physical activities quickly and accurately because the faster material, information and decision streams through the chain, the shorter the response time to the market needs. Third, there has to be a balance between the extent of information system use in the organization and levels of integration among SC members.

Researchers have identified diverse characteristics of agility. To be truly agile, a supply chain must possess a number of distinguishing characteristics which include: market sensitivity, virtuality, process integration, and networking (Ketchen and Giunipero, 2004). In developing a model for achieving agility in manufacturing organizations, Zhang and Sharifi, (2000) identified a number of “agility providers” (practices, methods, tools, techniques facilitating a capability for agility). Christopher, (2000) identifies the following characteristics: market sensitivity (through the capturing and transmission of point of sale data), creating virtual supply chains (based on information rather than inventory), process integration (collaboration between buyers and suppliers, joint product development etc.) and networks (confederations of partners linked together as against “stand alone” organizations. As adopted in this study, Hoek, Harrison and Christopher, (2001) further discuss an agile supply chain framework to include customer sensitivity, virtual integration, network integration and process integration.

### **2.3.3.1 Customer Sensitivity**

Customer sensitivity includes market understanding and customer “enrichment”, but also includes initiatives such as customization, postponement and rapid response. Based on the study, Hoek, Harrison and Christopher, (2001) found that customer sensitivity is a key concern in today's turbulent operating environment. The main focus is on running businesses in network structures with an adequate level of agility to respond to changes as well as proactively anticipate changes and seek new emerging opportunities. For instance, customization no longer has to be based on contained variety and customers are no longer restricted to select from an assortment of existing options but can define the areas for customization and determine which options should be customized.

‘Agility’ is needed in a less predictable environment for every company that wants to maximize economies of scale will find itself struggling when that customer comes knocking to place orders and wants quick response for its products. For instance, customer involvement in product development will go beyond the involvement in engineering a finished product into the actual design and development of products. To achieve competitive advantage, innovation will evolve from new models and product to customers specifying new products with order-intake. Inventories of goods finally can be replaced with information if customer sensitivity is accurately achieved and the supply chain infrastructure is upgraded beyond facilities and moving boxes (Hoek, Harrison and Christopher, 2001).

### **2.3.3.2 Virtual integration**

Virtual integration relates to leveraging information, but now has a focus on the wider supply chain. Agile supply chains compete through increased levels of knowledge and competency allowing them to broadly implement information technology. The use of information technology is a major indicator of SCM best practice, particularly if employed to connect customers, suppliers and value adding services leading to competitive advantage. It is the level of interaction between the supply chain participants, the sharing of information and the use of technology to create “connectivity” (i.e. the ability for organizations to share information in “real time”) (Power, 2005). Christopher,

(2000) emphasizes that agility in individual organizations can be significantly hindered by the level of complexity in terms of brands, products, structures and management processes.

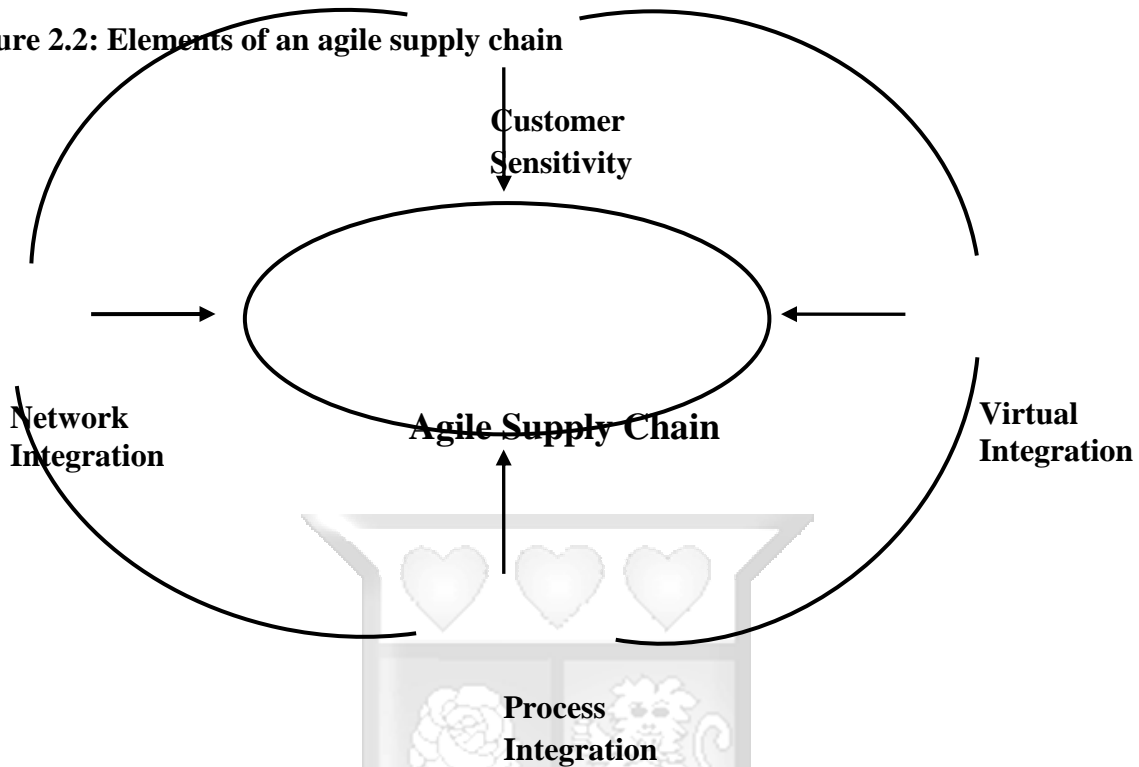
### **2.3.3.3 Network integration**

Network integration relates to cooperating to compete, and the broader critical issue of supply chain governance. Agility is therefore recognized to be holistic rather than functional, and of strategic rather than tactical importance. In order to realize competitive advantage, the concept has also been extended beyond the traditional boundaries of the individual organization to encompass the operations of the supply chain within which the organization operates (Christopher, 2000).

### **2.3.3.4 Process integration**

Process integration as shown in figure 2.2 relates to mastering change and uncertainty internally, but now, through managing the supply chain as a whole, to mastering change across organizations. According to Harrison and New, (2002) an agile supply chain consists of well-designed organizational structures, information systems and logistics processes and the principle component enabling agility is the skills of the management making companies more responsive to changes in the market place. An agile supply chain has a high capacity to flexibility adapt to the fast-changing environment. With this capability, a supply chain can accomplish its goal – gain customer satisfaction and in the long run, competitive advantage (Lambert et al., 1998).

**Figure 2.2: Elements of an agile supply chain**



Source: Hoek, Harrison and Christopher, (2001).

#### **2.3.4 Effects of Supply Chain Integration on Competitive Advantage**

The integration of supply chains has been described by Power, (2005) as the effort to elevate the linkages within each supply chain component, in order to realize better decision making, get all the pieces of the chain to interact in a more efficient way hence creating supply chain visibility and identify bottlenecks. Supply chain integration has been considered as a source of competitive advantage in that companies have their internal departments strive for optimized processes inside them. By doing this, department become competitors to each other though there is a functional integration. Functions are dependent on each other to achieve common goals (Grbac and Martin, 2003). According to Christopher, (1998) companies must have a culture of internal integration before being able to share information with external partners. External integration can be achieved by coordinated processes which is essentially SCM. SCM strives to optimize the coordinated processes through the whole supply chain and its

participants resulting to competitive advantage. Supply chain integration consists of a series of activities that an organization uses to deliver value, either in the form of a product, service, or a combination of both, to its customers (Li, et al., 2004) and hence achieve competitive advantage.

#### **2.3.4.1 IT infrastructure integration**

According to Li et al., (2006) supply chain integration (1) requires partners to share information and develop globally optimal plans, (2) optimizes the staging and flow of materials by leveraging the visibility of resources and (3) streamlines financial operations such as billing and payments that are inter dependent on other activities such as ordering and delivery. Integrated IT infrastructure is characterized by common data standards and integrated applications that enable flow of information and coordination of activities across functional units, geographic regions, and value network partners (Broadbent et al., 1999).

Rai, Patnayakuni, and Seth, (2006) argue that for companies to realize competitive advantage, they must develop capabilities to acquire, integrate, reconfigure, and release resources that are embedded in their social, structural, and cultural context. To achieve competitive advantage will take a while because developing these capabilities takes a long-term process that requires companies to make a series of linked strategic decisions and moves related to IT resources so as to blend them with organizational processes and knowledge resources (not just the physical components). It requires standards for the integration of data, applications, and processes to be negotiated and implemented in order for real-time connectivity (real-time transfer of information) between distributed applications to be achieved (Broadbent et al., 1998).

Rai, Patnayakuni, and Seth, (2006) study indicated that operational excellence has a very strong and significant weight in the formation of the firm performance construct. The strong effect of supply chain process integration on firm performance and hence gaining competitive advantage improves operational performance relative to competition by squeezing out delays, redundant tasks, and inefficient flows. The strong effect on revenue

growth also suggests that supply chain process integration enables market penetration and provides the agility to ensure that sales opportunities associated with the launch of new products and entry into new markets are captured.

#### **2.3.4.2 Supply chain link**

Supply chain link involves upstream mechanisms, particularly the ones that are aimed at integrating the production-logistics process. According to Li et al., (2006) the concepts 3PL and 4PL imply the amount of actors involved in logistics function. When a manufacturer (the buyer) takes care of the logistics activities all the way to the buyer, there is only one actor participating in the logistics therefore the name 1PL (one party logistics). When both the buyer and supplier are involved in the functions, for example sharing responsibilities of transport, the name 2PL (two party logistics) is used. In case there are the third and fourth actors between the supplier and the buyer we use the names 3PL and 4PL, third party logistics and four party logistics respectively. The concept of 3PL and 4PL not only cover transportation function but also warehousing, packing and planning. 3PL and 4PL are fundamentally logistics outsourcing. Most companies hold the view that outsourcing could lower costs and help them gain a competitive advantage. Logistics activities are outsourced not only to reduce control operating costs but also give the possibility to use resources that companies are not occupying internally. Companies realize their competitive advantage by managing their core business and outsourcing from specialized companies thus with time realizing competitive advantage within the supply chain (Lumbert and Cooper, 2000).

Distribution is one of the major ways manufacturing companies are differentiating themselves from other companies by excelling in delivery service. When products are not differentiated, distribution can be the order-winning factor (Lumbert and Cooper, 2000). The basis of integration can therefore be characterized by information sharing, trust, partnerships, shared technology, and managing integrated chains of processes (Allerheiligen and Gil, 1996). The extent of integration can begin with product design, and incorporate all steps leading to the ultimate sale of the item. Some authors also include all activities throughout the useful life of the product including service, reverse

logistics and recycling (Handfield and Nichols, 1999). The most effective of these networks will be those that are able to get the mix of information requirements, physical logistics and collaboration right, providing shared benefits to a majority of partner organizations (Power, 2005).

The potential for integration of the supply chain to improve both profit potential and competitive advantage is highlighted by Woodruff, (1997) as the supply chain represents 60% to 80% of a typical company's cost structure, just a 10% reduction can yield a 40% to 50% improvement in pretax profits. The primary benefits resulting could include cost and cycle time reductions, and improvement of customer service levels.

#### **2.3.4.3 Performance measuring**

Today managers are required to include assessment of company's intangible and intellectual assets in their financial accounting practices (Simons, 2000). Performance measuring connects the components of supply chain systems and the activities on the operational level (Miller and Ross, 2003). Performance measuring enables companies to identify their achievements within a period of time in relation to their goals. This way companies are to gauge whether they are working towards achieving competitive advantage or not. A balance scorecard is commonly used to assess achievements of strategies. A basic scorecard uses four perspectives to translate company's mission and strategy: financial, customer, internal business process and, learning and growth (Simons, 2000). Key performance indicators (KPIs) is another way of measuring non-financial information. The management designs a strategy for company's operations, with the help of KPI's, the organization can steer operations towards visible goals; if the operations are performed well, it will reflect on good financial measure results (Miller and Ross, 2003).

Twenty first Century logistics framework is yet another tool used to measure internal and external supply chain performance. It includes five key performance areas: customer service, cost management, quality, productivity and asset management. This framework is useful in making comparison of logistics in two geographical areas Cooper and Schindler, (2011) and those customers and suppliers are involved in measuring

(Handfield et al., 2004). Benchmarking was defined by Xerox in 1979 as a continuous process of measuring one's products, services and practices against the competition. Benchmarking is viewed as measuring one's performance against that of the best-in-class companies, determining how the best-in-class achieves its performance levels, and gaining a competitive advantage by using the information gained as a basis for your own company's strategies and targets leading to superior performance (Kemppainen, and Vepsäläinen, 2003).

## **2.4 Gaps in Research**

The food and beverage industry plays a unique role in expanding economic opportunities however, the industry's performance is below bar in Nairobi and is facing intense competition from the imported food stuffs from overseas (Okello et al., 2014). Managers and researchers agree that supply chain management is critically important to competitive positioning (Porter 1990; Cooper, Lambert, and Cooper 2000; John et al., 2001) however realization of competitive advantage in their supply chain is low.

The sector is facing challenges such as cost containment, rapid change in business environment which is rocking supply chain executives' ability to adapt especially with conventional supply chain management strategies and designs. Lack of clear visibility whereby flooded with more information than ever, supply chain executives still struggle to "see" and act on the right information. Risk management ranks remarkably high on the supply chain agenda as well. There is low customer intimacy despite the demand-driven slogans; companies are better connected to their suppliers than their customers. Contrary to initial rationale, globalization has proven to be more about revenue growth than cost savings (Burua, 2010).

In addition, there is no comprehensible agreement on defining SCM concept. Studies on SCM conducted in different geographical areas and time focus on different business sectors. Furthermore authors in their studies concentrate on different business sectors such as automotive industry Lamming, (1993) textile industry (Dore, 1983), manufacturing industries (Hakansson, 1987). There is no agreement within the body of

researchers on the most crucial SCM strategies approaches and findings yet there is need to establish effective SCM practices that will enhance competitive advantage to ensure that an organization can deliver against its strategic objectives (Li et al., 2006).

More companies are moving from the adversarial kind of transactions to the use of a few qualified suppliers with close relationships, a trend attributed to Bosibori, (2014): the customers' demand for higher quality; wider range of products; shorter time to market; and faster deliveries (Bourlakis and Weightman, 2004). There is also increasing evidence that most companies in the food and beverage industry have a long way to go before they can realize their full potential for a truly linked SCM system. For instance, most logistics executives do not know exactly how SCM creates value for customers because this phenomenon has not been examined exhaust-fully (Daugherty, 2011).

The industry is affected by many challenges including the economic slump, lack of or low value addition of its products, rising food prices, increasing transportation costs due to a rise in oil prices, and decline in consumers, low adoption of information systems, inflexible internal operations/processes, lack of properly coordination among industry players, Food and Beverage Industry Global Report, (2010), low cost containment, rapid change in business environment, and low customer intimacy (Burua, 2010).

Successful supply chain requires an integration of all the components involved into a combination of business processes within and across organizations. (Samaranayake, 2005). Whereby collaboration within the chain is an active involvement in exchange of information but also in a more proactive approach through common planning and synchronization of activities and business processes (Henriksson and Nyberg, 2005). Managers are able to respond to and make quick decisions to fulfill customers' demand for convenience. These gaps motivate the need for this study.

## **2.5 Conceptual framework**

Collaboration with suppliers, customers and competitors could lead to competitive advantage in that, successful companies seek to increase more suppliers and build long-

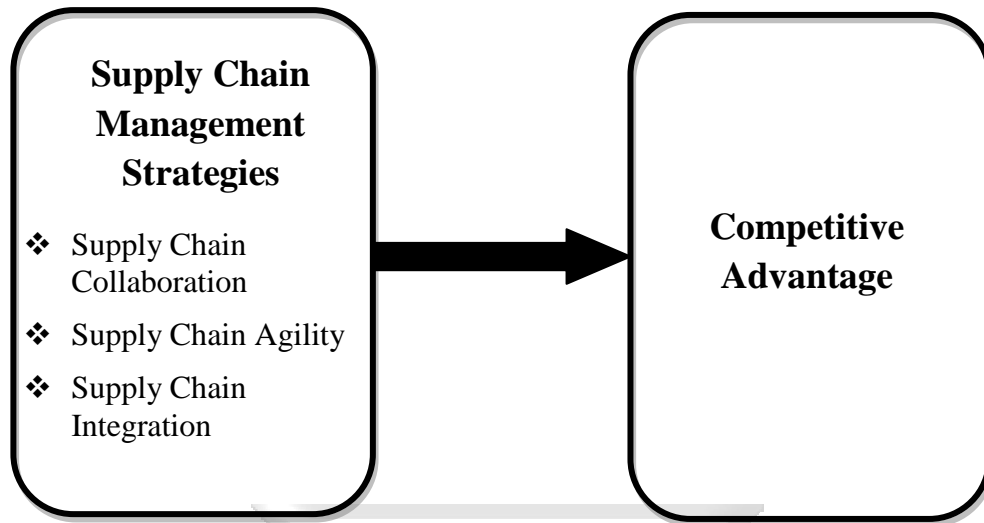
term supplier and customer relationships. Having customer relationships as a capability enables companies to understanding them as a potential source of competitive advantage. These relationships have to be maintained positive even when the companies are facing economic challenges (Handfield and Nicholas, 2004). Members of the chain involved in product design can have a positive impact on fault rate in manufacturing company's production. Their involvement in product design process may result in the company gaining their loyalty and reduce quality problems during production. Li et al., (2004) state that all practices for managing customer relationships could be sources of competitive advantage.

An agile supply chain has a high capability to flexibly adapt to the fast-changing environment. With this capability, a company is able to accomplish its supply chain goal; gain customer satisfaction leading to achieving competitive advantage (Yusuf et al., 2004). It connects interlinks collaboration and integration strategies in that, supply chain agility emerges from process, network, virtual integration and customer sensitivity riding on inter-dependence. In addition, competitive advantage can be achieved by the enabling skill of the management (Hoek, Harrison and Christopher, 2001).

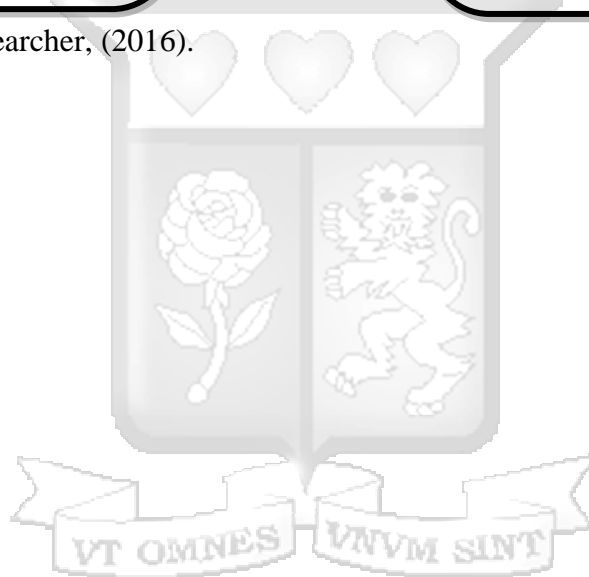
Supply chain integration has been considered as a source of competitive advantage in that companies have their internal departments strive for optimized processes inside them. According to Christopher, (1998) companies must have a culture of internal integration before being able to share information with external partners. External integration can be achieved by coordinated processes and systems (information system, supply chain link and monitoring SC performance) which is essentially SCM.

SCM strategies (collaboration, agility and integration) are used to optimize the coordinated processes through the whole supply chain and its participants resulting to competitive advantage. In isolation each strategy cannot effectively contribute to a company realizing competitive advantage however, it is implementation of the three SCM strategies is attributed to companies attaining competitive advantage Handfield and Nicholas, (2004) as illustrated by figure 2.3.

**Figure 2.3: Conceptual Framework model**



Source: Researcher, (2016).

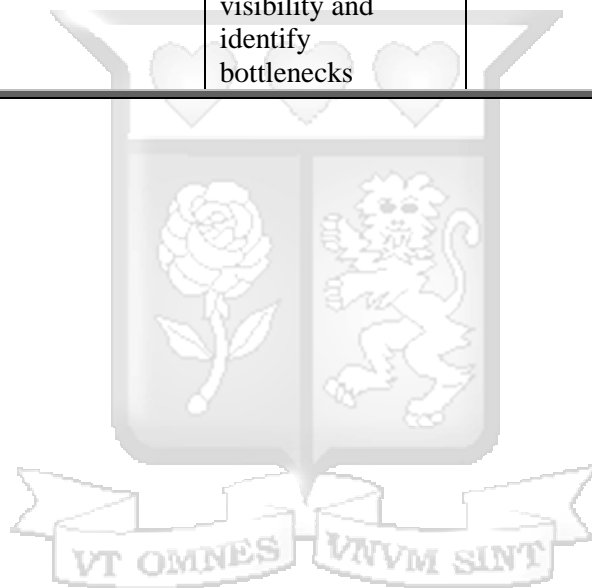


## 2.5 Operationalization of Variables

**Table 2.1: Operationalization of variables**

	<b>Variables</b>	<b>Operation Definition</b>	<b>Measurement Indicator</b>	<b>Source</b>
<b>Dependent Variable</b>	<b>Competitive Advantage</b>	Competitive advantage is the ability of firms responds to conditions in their marketplaces by modifying their competencies (internal capabilities and linkages with suppliers and associates) and the ways in which they position themselves in relation to their competitors.	Likert scale will be used to measure the following constructs. 1. Competitive positioning 2. Brand Equity 3. Customer Relationships	Porter, (1990)
<b>Independent Variables</b>	<b>Supply Chain Collaboration</b>	Co-operations within the supply chain are often referred as supply chain collaboration.	A Likert scale will be used to measure the degree of the following constructs: 1. Strategic supplier partnerships 2. Customer relationships 3. Cooperation with Competitors	Walker et al., (2000)
	<b>Supply Chain Agility</b>	Agility means using market knowledge and a virtual corporation to exploit profitable opportunities in a volatile marketplace.	Likert scale will be used to measure the degree of the following constructs: 1. Customer sensitivity 2. Virtual integration 3. Network integration 4. Process integration	Naylor, Naim, and Berry, (1999)

	<b>Variable</b>	<b>Operation Definition</b>	<b>Measurement Indicator</b>	<b>Source</b>
	<b>Supply Chain Integration</b>	Integration is the effort to elevate the linkages within each SC component, in order to realize better decision making, get all the pieces of the chain to interact in a more efficient way hence creating supply chain visibility and identify bottlenecks	Likert scale will be used to measure the intensity of the following concepts: 1 IT infrastructure integration 2. Supply chain link 3. Performance measuring	Power, (2005)



## **CHAPTER THREE**

### **METHODOLOGY**

#### **3.1 Introduction**

Chapter three presented the methodology used in this study. Particularly this included research design, the target population, sample and sampling techniques, data collection as well as data analysis to be employed in the study.

#### **3.2 Research Design**

The study is an exploratory survey that analyzed effects supply chain management (SCM) strategies on competitive advantage in the Kenya with the purpose of reaching a deeper understanding of SCM practices as included in the study through collecting information. A survey is most flexible way of obtaining information on underlying SCM motives (Cooper and Schindler, (2011). It was used for review and evaluating effectiveness of SCM in the industry.

#### **3.3 Target Population**

Target population is a list of elements from which the sample is actually drawn (Kothari, (1990). Population comprised all food and beverage processing companies in Nairobi who are members of Kenya Association of Manufacturers (KAM) and are listed in KAM Directory 2015. The rest are located in other major towns and regions, including Coast, Nyanza/Western provinces, Nakuru, Eldoret, Athi River, Nyeri and Thika. The main reason for this choice was that these companies are likely to exhibit elaborate SCM philosophy and make use of best practices in SCM (Bolo, 2011).

#### **3.4. Sampling Frame**

In this study, the sampling frame comprised 187 food and beverage companies in Nairobi County listed in KAM directory (KAM, website November, 2015). All public sector firms (where the government holds majority shares) and small companies were eliminated. This is because majority of small companies do not have supply chain

networks and public sector firms are characterized with protocols and procedures that make it difficult to obtain information from these institutions (Bolo, 2011). This left 102 companies in total, 46 large and 56 medium companies respectively (KAM, website November, 2015).

### **3.4.1 Sampling Technique**

The sample was determined using stratified sampling it was not homogeneous. In this technique, elements were divided into strata namely large and medium companies to ensure that elements from each sub-population are represented. Since each stratum is more homogeneous than the total population, this technique provided more accurate information of each component parts (Cooper and Schindler, 2011).

Target population was divided into 46 large and 56 medium companies (Kamenya, 2012). To achieve desired sample of 100 companies, the researcher selected all companies from large company's stratum and to obtain 54 companies from medium company's stratum the researcher applied simple random sampling.

Each of the 56 medium companies was assigned a number on a slip of paper. Each element had an equal probability of being selected. The researcher drew 54 slips without replacing resulting with selected companies forming subjects of the study (Cooper and Schindler, 2011).

### **3.4.2 Sample Size**

A sample of 100 food and beverage processing companies (Large and Medium, 46 and 54 companies respectively) was drawn. This number was considered adequate to accurately represent the target population since it provided a large enough sample size. These companies were accessible and their physical and telephone contacts were listed in the KAM Directory (KAM, website 2015).

### **3.5 Data Collection Method**

The study incorporated primary data collected during the survey. Target respondents were managers in charge of supply chains in their respective companies. Their titles

varied such as Logistician, Operations Manager, Production Manager, Supply Chain Manager, Sales Manager among others. The researcher secured appointments and visited food and beverage processing companies to administer the questionnaire. The sessions were estimated to take thirty minutes to complete filling. The questionnaire comprised mainly both structured and semi-structured questions that facilitated collection of uniform data. The duration of data collection took more than a month. The questionnaires were accompanied with an introduction letter with a note to request the respondent to participate in the research. The letter explained the purpose of the research and assured respondents confidentiality and commitment to share the findings of the research with the respondents.

### **3.5 Data Analysis and Presentation**

This study used quantitative method of data analysis. For ease of analysis, the questionnaire was be coded according to each variable of the study to ensure the margin of error is minimized and assure accuracy during analysis. Data was analyzed using the Statistical Package for Social Sciences (SPSS) program and graphically presented using tables and charts. The research considered descriptive statistics of mean and standard deviation as well as inferential statistics. Linear regression and correlation statistics were used to analyse relationship between SCM Strategies and competitive advantage. The following equation was used to predict competitive advantage (CA) (dependent variable).

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

Where:  $X_1$  = Supply Chain Collaboration  
 $X_2$  = Supply Chain Agility  
 $X_3$  = Supply Chain Integration  
 $\varepsilon$  = Error term  
 $Y$  = Competitive Advantage (CA)

### **3.6 Research Quality**

#### **3.6.1 Validity**

Validity is defined by Anderson, et al., (2004) as a judgment about whether the data really provides evidence on what the research instrument is intended to measure. Validity

determines whether the research truly measures that which it was intended to measure or how truthful the research results are. In other words, does the research instrument allow you to hit "the bull's eye" of your research object? Researchers generally determine validity by asking a series of questions, and will often look for the answers in the research of others.

Anderson, et al., (2004) describes the validity in quantitative research as "construct validity". The construct is the initial concept, notion, question or hypothesis that determines which data is to be gathered and how it is to be gathered. They also assert that quantitative researchers actively cause or affect the interplay between construct and data in order to validate their investigation, usually by the application of a test or other process. In this sense, the involvement of the researchers in the research process would greatly reduce the validity of a test.

### **3.6.2 Reliability**

Reliability is defined as the degree to which a test consistently measures whatever is intended to be measured (Kirk and Miller, 1986). Joppe, (2000) defines reliability as the extent to which results are consistent over time and an accurate representation of the total population under study is referred to as reliability and if the results of a study can be reproduced under a similar methodology, then the research instrument is considered to be reliable. Kirk and Miller, (1986) identify three types of reliability referred to in quantitative research, which relate to: (1) the degree to which a measurement, given repeatedly, remains the same (2) the stability of a measurement over time; and (3) the similarity of measurements within a given time period.

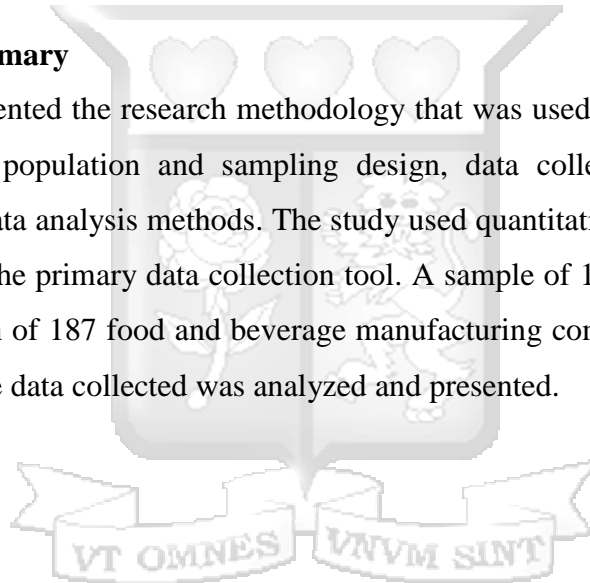
These definitions of reliability and validity in quantitative research reveal two strands: Firstly, with regards to reliability, whether the result is replicable. Secondly, with regards to validity, whether the means of measurement are accurate and whether they are actually measuring what they are intended to measure.

### **3.7 Ethical Considerations**

Ethical Considerations were adhered to by the researcher. The researcher obtained full consent from respondents and relied on their voluntary participation. The questionnaire was accompanied with an introduction letter with a note to request the respondent to participate in the research. The letter explained the purpose of the research and assured respondents anonymity, confidentiality and commitment to share the findings of the research with the respondents. To ensure quality and integrity of the study, the researcher maintained highest level of objectivity in analysis and discussions throughout the research. Acknowledgement of works of other authors used in any part of the study was done using APA referencing system.

### **3.8 Chapter summary**

This chapter presented the research methodology that was used in the study covering the research design, population and sampling design, data collection methods, research procedures and data analysis methods. The study used quantitative research design with a questionnaire as the primary data collection tool. A sample of 100 companies was drawn from a population of 187 food and beverage manufacturing companies. The chapter also discussed how the data collected was analyzed and presented.



## CHAPTER FOUR

### DATA ANALYSIS AND PRESENTATION OF RESEARCH FINDINGS

#### 4.1 Introduction

This chapter presents the findings of the study, interpretations and discussions according to the objectives and gives the results of the data analysis. This study sought to investigate the effects of supply chain management strategies on competitive advantage in food and beverage processing companies in Nairobi County.

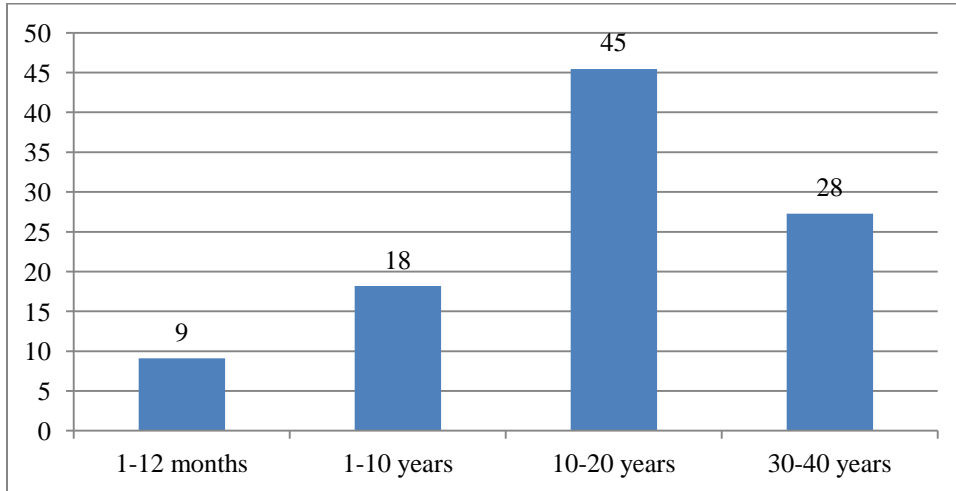
Out of the hundred questionnaires that were sent out, thirty-three questionnaires were complete filled and returned giving a response rate thirty-three percent. This was as a result of the nature of information which was believed to be confidential. There were many instances whereby approval from the company's chief executive office was required in order for the researcher to administer a questionnaire. It took long to acquire written approval hence delays in data collection and low response rate. Respondents were managers in charge of supply chains who were difficult to find settled in their offices. Majority were out of their offices visiting with their supply chain participants. This made it difficult to secure appointments.

Though this is not a favorable response rate, all respondents represented the two important classifications of the sample namely large and medium food and beverage processing companies. In a study on the impact of supply-chain management capabilities on business performance conducted in the Europe, 3,333 respondents were mailed questionnaires. A follow-up letter and questionnaire were sent to those who did not return the initial questionnaire after a five-week waiting period. Fourteen packets were returned as undeliverable. Of the responses received, 58 were appraised as being unsuitable for the large-scale analysis. Most of the rejected questionnaires were due to a lack of company's physical location address or to an insufficiently completed survey. A total of 474 responses were appraised as suitable for the large-scale analysis, giving an effective response rate of 14.5 percent (Tracey, Lim and Vonderembse, 2005).

## 4.2 Background Information

### 4.2.1 Age of the Companies

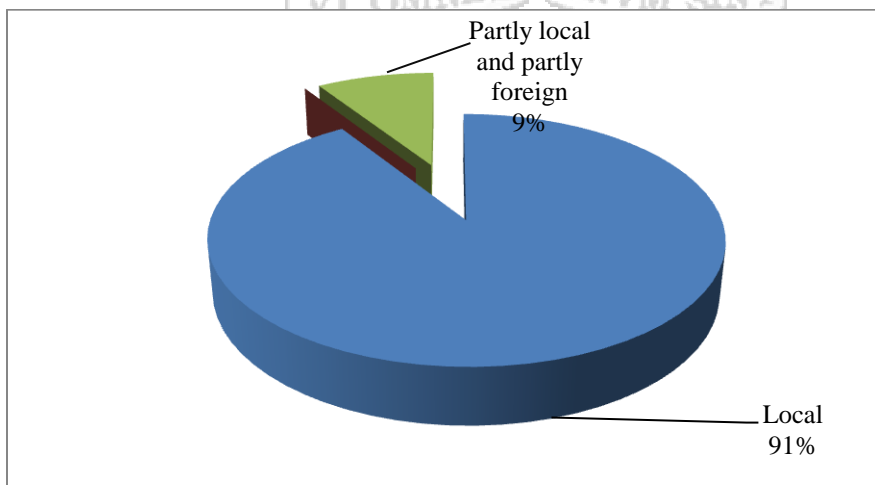
**Figure 4.1: Age of Companies**



Respondents were required to indicate the number of years their companies were in existence. The study established age of companies and the findings, 45% of the companies had been in existence for 10-20 years, 27% for 30-40 years, 18% for 1-10 years and only 9% for less than a year.

### 4.2.2 Company Ownership

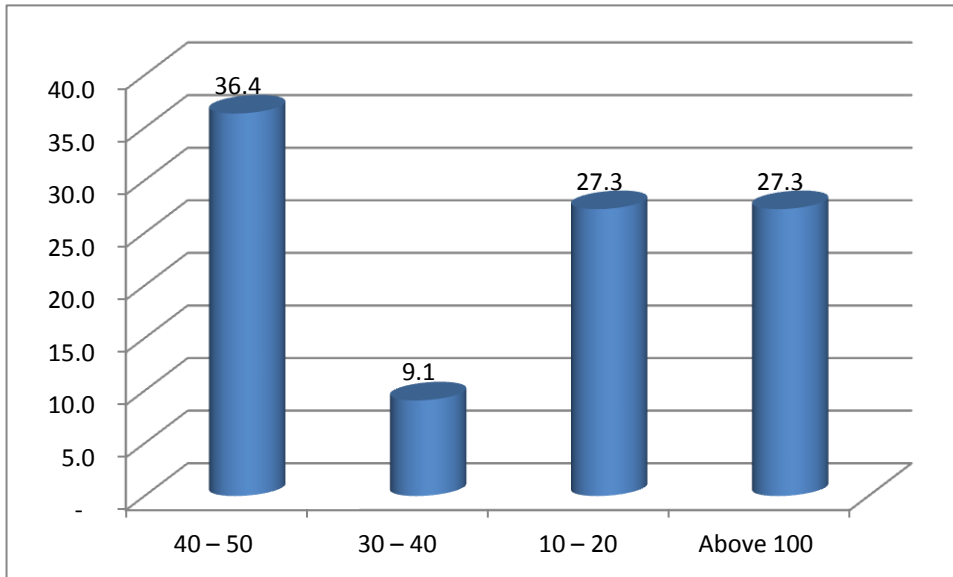
**Figure 4.2: Company Ownership**



Respondents were required to indicate their company ownership either local, foreign or partly local and partly foreign. Study findings showed that 91% of the companies were local, while only 9% were partly local and partly foreign.

#### 4.2.3 Number of employees in Respondents' Companies

**Figure 4.3: Number of employees in respondents' company**



Respondents were required to indicate the number of employees in their companies. The study established the number of employees in the respondents companies. Findings revealed that 36.4% of the companies had 40-50 employees, 27.3% had 10-20 employees, and 27.3% had above 100 employees while only 9.1% had 30-40 employees.

### 4.3 Correlation

**Table 4.1: Spearman's Correlation**

Variable		Competitive Advantage	Supply chain collaboration	Supply chain agility	Supply chain integration	
Spearman's Rho	Competitive Advantage	Correlation coefficient	1.000	0.779	0.611	0.813
		Sig. (2-tailed)	0.000*	0.000*	0.000*	0.000*
		N	32	32	32	32
	Supply Chain Collaboration	Correlation coefficient	0.779	1.000		
		Sig. (2-tailed)	0.000*	0.000*		
		N	32	32		
	Supply Chain Agility	Correlation coefficient	0.611		1.000	
		Sig. (2-tailed)	0.000*		0.000*	
		N	32		32	
	Supply Chain Integration	Correlation coefficient	0.813			1.000
		Sig. (2-tailed)	0.040*			0.000*
		N	32			32

Spearman's correlation coefficients were determined for the three independent variables to establish the extent to which they correlated with competitive advantage. All the three independent variables showed strong positive correlation with competitive advantage as shown by spearman's correlation coefficients of 0.813, 0.779 and 0.611 for supply chain integration, supply chain collaboration and supply chain agility, respectively.

This implies that supply chain integration contributes more to the competitive advantage in food and beverage processing companies in Nairobi County followed by supply chain collaboration and supply chain agility respectively.

#### 4.4 Regression Results

Linear regression analysis was used to test the relationship between competitive advantage and SCM strategies (i.e. supply chain agility, supply chain collaboration and supply chain integration) in food and beverage processing companies in Nairobi County.

**Table 4.2: Summary Output**

<b>Model Summary</b>				
<b>Model</b>	<b>R</b>	<b>R Square</b>	<b>Adjusted R Square</b>	<b>Std. Error of the Estimate</b>
1	0.839 <sup>a</sup>	0.703	0.648	0.7936
a. Predictors: (Constant), Competitive Positioning b. SCM strategies (supply chain agility, supply chain collaboration and supply chain integration)				

The coefficient of determination (R-squared) was 70.3%. This means that the independent variables studied explains up to 70.3% of changes in competitive advantage in the companies surveyed.

Other factors not studied in this research contribute 29.7% of the competitive advantage in food and beverage processing companies in Nairobi County. Therefore, further research should be conducted to investigate the other factors (29.7%) that affect competitive advantage in food and beverage processing companies in Nairobi County.

**Table 4.3: ANOVA**

	<b>Df</b>	<b>SS</b>	<b>MS</b>	<b>F</b>	<b>Significance F</b>
Regression	4	35.67642	8.919105	16.85206	0.000
Residual	28	14.81925	0.529259		
Total	32	50.49568			

The significance value is .000 which is less than 0.05 thus the model is statistically significant in predicting competitive advantage. Since F calculated is greater than the F critical, this shows that the overall model was significant.

**Table 4:4: Coefficients**

	<b>Coefficients</b>	<b>Standard Error</b>	<b>t Stat</b>	<b>P-value</b>
Intercept	6.284	3.18	(4.36)	0.00
Supply chain collaboration	0.703	0.27	2.45	0.00
Supply chain agility	0.375	0.55	2.44	0.00
Supply chain integration	1.664	0.32	1.99	0.04

- a. Predictors: (Constant), Supply chain collaboration, Supply chain agility, Supply chain integration
- b. Competitive advantage

The regression model was;

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

Where:  $X_1$  = Supply Chain Collaboration  
 $X_2$  = Supply Chain Agility  
 $X_3$  = Supply Chain Integration  
 $\varepsilon$  = Error term  
Y = Competitive Advantage (CA)

Therefore:  $Y = 6.284 + 0.703X_1 + 0.375X_2 + 1.664X_3$

The results reveal that supply chain integration had the greatest beta coefficient of (1.664), followed by supply chain collaboration (0.703) and supply chain agility (0.375) respectively. Supply chain integration therefore had the greatest effect on competitive advantage followed by supply chain collaboration as revealed by the magnitude of their beta coefficients. Supply chain agility had the least effect on competitive advantage. All the beta coefficients were positive. This implies that the independent variables were positively related to competitive advantage.

Significance was tested at 5% level of significance and 95% level of confidence. Supply chain collaboration had a p-value of 0.00; supply chain agility had a p-value of 0.00 and supply chain integration had a p-value of 0.04. All the p-values were therefore significant at 95% level of confidence.

## 4.5 Effects of Supply Chain Strategies on Competitive Advantage

### 4.5.1 Effect of Supply Chain Collaboration on Competitive Advantage

Respondents' were given five statements on supplier collaboration in their companies. Likert scale was used to measurement of characteristics and aspects of collaboration, and perceived benefits of collaboration among members in a supply chain. Respondents were asked to agree or disagree with each statement and the degree would vary between strongly agree, agree, somewhat agree, disagree and strongly disagree numbering 5, 4, 3, 2, and 1 respectively.

#### 4.5.1.1 Supply chain collaboration with suppliers

**Table 4.5: Companies' collaboration with suppliers**

	Strongly agree		Agree		Somewhat Agree		Disagree		Strongly disagree		Mean	Stddev
	F	%	F	%	F	%	F	%	F	%		
Companies encourage co-operation in design and develop of products.	11	33	9	27	9	27	3	9	1	3	3.8	0.04
Companies have specialized channels whereby, participants depend on each other.	5	15	15	45	11	33	1	3	1	3	3.7	0.03
Companies have built long-term relationships with its suppliers.	5	18	19	58	3	9	0	0	5	15	3.6	0.45
Companies have common planning and synchronization of activities and business processes.	5	15	13	39	7	21	5	15	3	9	3.4	0.02
Companies actively exchange information with suppliers.	1	3	21	64	4	12	2	6	5	15	3.3	0.04
<b>Overall score</b>	-	-	-	-	-	-	-	-	-	-	<b>3.6</b>	<b>0.12</b>

The results showed that companies encourage co-operation in design and development of products returned a mean score of 3.8 and a standard deviation of 0.04; followed by companies have specialized channels whereby, participants depend on each other with a mean score of 3.7 and a standard deviation of 0.03. Companies have built long-term relationships with its suppliers as indicated by a mean of 3.6 and a standard deviation of

0.45. The overall score of the mean was 3.6 while the standard deviation was 0.12, meaning that on average the respondents agreed with the statements on supplier partnerships in their companies. This implies that companies strive to build collaboration with participants in their supply chain.

#### 4.6.1.2 Supply chain collaboration with customers

Respondents' were given seven statements on supply chain collaboration with customers in their companies. Likert scale was used to measurement of characteristics and aspects of collaboration, and perceived benefits of collaboration among members in a supply chain. Respondents were asked to agree or disagree with each statement and the degree would vary between strongly agree, agree, somewhat agree, disagree and strongly disagree numbering 5, 4, 3, 2, and 1 respectively.

**Table 4.6: Companies' collaboration with customers**

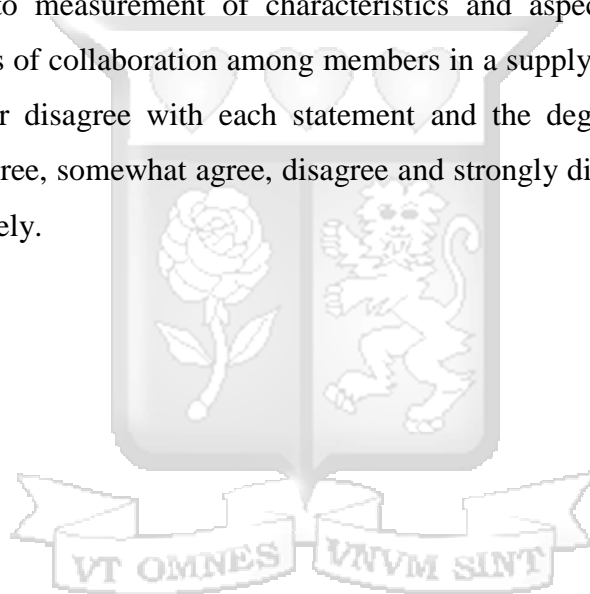
	Strongly agree		Agree		Somewhat Agree		Disagree		Strongly disagree		Mean	Stdev
	F	%	F	%	F	%	F	%	F	%		
Companies have interactive websites.	5	15	18	55	9	27	1	3	0	0	3.8	0.0
Companies involve customers in issues related to product design and quality.	3	9	20	61	6	18	3	9	1	3	3.6	0.1
Companies keep a database of all their customers.	3	9	19	58	7	21	2	6	2	6	3.6	0.1
Companies are keen to build trust amongst its Customers.	3	9	19	58	8	24	1	3	2	6	3.6	0.1
Companies manage customer complaints promptly.	4	12	15	45	8	24	4	12	2	6	3.5	0.0
Companies seek profitable relations (mutually beneficial) with its customers.	6	18	16	48	4	12	2	6	5	15	3.5	0.1
Companies strive to build permanent long-term relationships with customers.	1	3	18	55	12	36	1	3	1	3	3.5	0.1
<b>Overall score</b>	-	-	-	-	-	-	-	-	-	-	<b>3.6</b>	<b>0.1</b>

Study findings revealed that companies have interactive websites as indicated by a mean of 3.8 and a standard deviation of 0.0; that companies involve customers in issues related

to product design and quality as indicated by a mean of 3.6 and a standard deviation of 0.1; that companies keep a database of all their customers as indicated by a mean of 3.6 and a standard deviation of 0.1; that companies strive to build permanent long-term relationships with customers as indicated by a mean of 3.5 and a standard deviation of 0.1. The overall mean was 3.6 while the standard deviation was 0.1. This means that on average respondents not only agreed with the statements on customer relationships but also that companies are put more effort to build these relationships.

#### **4.6.2 Effects of Supply Chain Agility on Competitive Advantage**

Respondents' were given six statements on supply chain agility in their companies. Likert scale was used to measurement of characteristics and aspects of collaboration, and perceived benefits of collaboration among members in a supply chain. Respondents were asked to agree or disagree with each statement and the degree would vary between strongly agree, agree, somewhat agree, disagree and strongly disagree numbering 5, 4, 3, 2, and 1 respectively.



**Table 4.7: Companies' supply chain agility characteristics**

	Strongly agree		Agree		Somewhat Agree		Disagree		Strongly disagree		Mean	Stdev
	F	%	F	%	F	%	F	%	F	%		
Companies are of the view that an agile network is holistic and strategic and extends beyond the traditional boundaries to encompass all operations of the supply chain within which it operates.	7	21	17	52	8	24	1	3	0	0	3.9	0.04
Companies are sensitive to quick response to customers' involvement and demand for customized products.	5	15	20	61	6	18	2	6	0	0	3.8	0.02
Management team makes more responsive changes while considering the market place.	5	15	21	64	1	3	4	12	2	6	3.7	0.04
Companies are market sensitive with capacity to flexibly adapt to the fast-changing environment.	5	15	16	48	7	21	4	12	1	3	3.6	0.06
Companies have invested in product research and development.	2	6	22	67	2	6	5	15	2	6	3.5	0.09
Companies have an information system that incorporates customers and suppliers and also increases levels of knowledge and competency allowing participants to broadly implement information technology.	1	3	17	52	8	24	2	6	5	15	3.2	0.07
<b>Overall score</b>	-	-	-	-	-	-	-	-	-	-	<b>3.6</b>	<b>0.1</b>

The study also found out that companies are of the view that an agile network is holistic and strategic and extends beyond the traditional boundaries to encompass all operations of the supply chain within which it operates as shown by a mean of 3.9 and a standard deviation of 0.04; that companies are sensitive to quick response to customers' involvement and demand for customized products as shown by a mean of 3.8 and a standard deviation of 0.02; that management team makes more responsive changes while considering the market place as shown by a mean of 3.7 and a standard deviation of 0.04;

that companies are market sensitive with capacity to flexibly adapt to the fast-changing environment as shown by a mean of 3.6 and a standard deviation of 0.06; and that companies have invested in product research and development as shown by a mean of 3.5 and a standard deviation of 0.09. The overall mean measure was 3.6 while that of the standard deviation was 0.1 indicating that respondents agreed with statements on the effect of supply chain agility on companies' competitive advantage. In addition, companies are able to respond to and make quick decisions to fulfill customers' demand for convenience.

#### 4.6.3 Effects of Supply Chain Integration on Competitive Advantage

Respondents' were given four statements on supply chain integration in their companies. Likert scale was used to measurement of characteristics and aspects of collaboration, and perceived benefits of collaboration among members in a supply chain. Respondents were asked to agree or disagree with each statement and the degree would vary between strongly agree, agree, somewhat agree, disagree and strongly disagree numbering 5, 4, 3, 2, and 1 respectively.

##### 4.6.3.1 IT infrastructure integration

**Table 4.8: Companies' IT infrastructure integration**

	Strongly agree		Agree		Somewhat Agree		Disagree		Strongly disagree		Mean	Stdev
	F	%	F	%	F	%	F	%	F	%		
Companies have IT system that facilitates sharing information (real time connectivity).	9	27	16	48	4	12	3	9	1	3	3.9	0.02
Companies share information with all participants in the supply chain.	4	12	20	61	6	18	2	6	1	3	3.7	0.04
Companies strive to share technology with supply chain participants.	9	27	14	42	2	6	7	21	1	3	3.7	0.06
Companies have streamlined financial operations.	4	12	18	55	1	3	8	24	2	6	3.4	0.04
<b>Overall score</b>	-	-	-	-	-	-	-	-	-	-	<b>3.68</b>	<b>0.03</b>

Study findings revealed that companies have IT systems that facilitates sharing information (real time connectivity) as shown by a mean of 3.9 and a standard deviation of 0.02; that companies share information with all participants in the supply chain as shown by a mean of 3.7 and a standard deviation of 0.04; and that companies strive to share technology with supply chain participants as shown by a mean of 3.7 and a standard deviation of 0.06. The overall mean score was 3.68 while the standard deviation was 0.03. This means that the respondents agreed with the statements on IT infrastructure integration. This implies that companies are making strides in acquiring technology and sharing information with supply chain participants.

#### 4.6.3.2 Supply chain link integration

Respondents' were given five statements on supply chain link in their companies. Likert scale was used to measurement of characteristics and aspects of collaboration, and perceived benefits of collaboration among members in a supply chain. Respondents were asked to agree or disagree with each statement and the degree would vary between strongly agree, agree, somewhat agree, disagree and strongly disagree numbering 5, 4, 3, 2, and 1 respectively.

**Table 4.9: Companies' supply chain link characteristics**

	Strongly agree		Agree		Somewhat Agree		Disagree		Strongly disagree		Mean	Stddev
	F	%	F	%	F	%	F	%	F	%		
The companies manage an integrated chain: information requirements, physical logistics and chain participants.	15	45	13	39	2	6	2	6	1	3	4.18	0.01
The companies have excelled in delivery service.	9	27	18	55	1	3	3	9	2	6	3.88	0.06
The companies' supply chain is three or four party logistics.	5	15	21	64	2	6	2	6	3	9	3.70	0.04
The companies' supply chain is two party logistics.	4	12	17	52	5	15	3	9	4	12	3.42	0.04
The companies strive to build trust within the supply chain.	5	15	11	33	6	18	6	18	5	15	3.15	0.02
<b>Overall score</b>	-	-	-	-	-	-	-	-	-	-	<b>3.54</b>	<b>0.03</b>

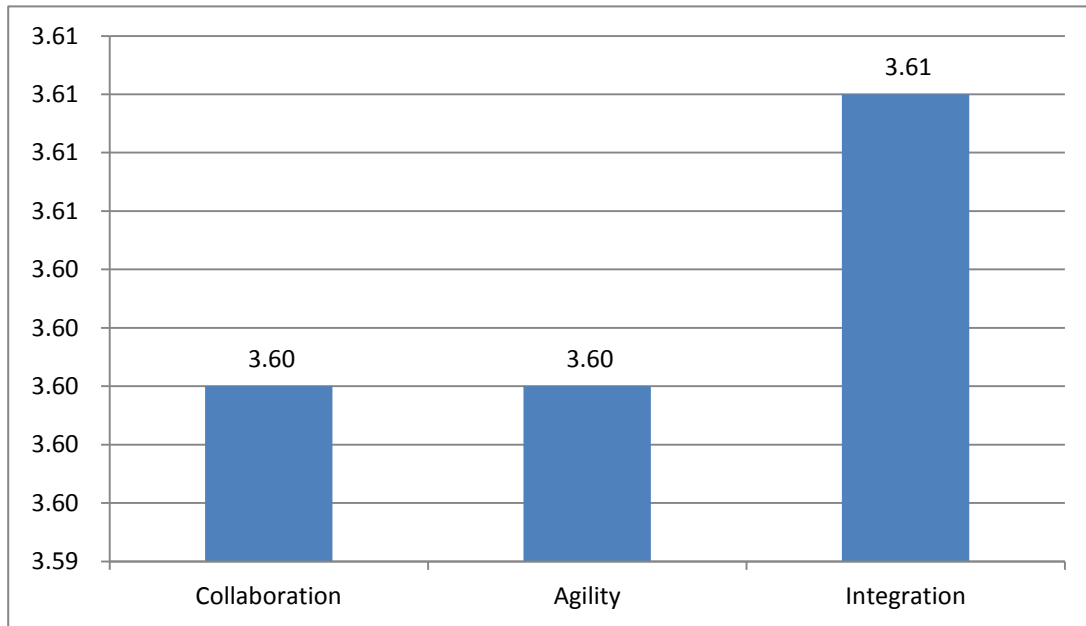
The findings revealed that the companies manage an integrated chain with information requirements, physical logistics and chain participants as shown by a mean of 4.18 and a standard deviation of 0.01; that the companies have excelled in delivery service as shown by a mean of 3.88 and a standard deviation of 0.06; that the companies' supply chain is three or four party logistics as shown by a mean of 3.70 and a standard deviation of 0.04; that the companies' supply chain is three or four party logistics as shown by a mean of 3.70 and a standard deviation of 0.04. The overall mean measure was 3.54 while the standard deviation was 0.03. The respondents therefore agreed with most of the statements on having systems to manage physical logistics, building trust and having in place two-party and three/four party supply chain logistics.

#### 4.6.4 Summary of effects supply chain management strategies mean scores

**Table 4.10: Summary of effects supply chain management strategies mean scores**

	OVERALL MEAN	OVERALL STDEV
<b>Collaboration</b>	3.60	0.11
<b>Agility</b>	3.60	0.10
<b>Integration</b>	3.61	0.03

**Figure 4.4 Summary of supply chain management strategies mean scores**



Supply chain integration had the highest mean of 3.61, followed by supply chain collaboration and supply chain agility with a mean of 3.60 each. Supply chain integration is therefore the most significant variable in explaining changes in supply chain management strategies.

**Table 4.11: Tools companies use to measure supply chain performance**

	Frequency	Percentage
Accounting Measures	33	100
Benchmarking	24	73
Process control	21	64
Continuous improvement	9	27
Customer service	6	18
Strategic performance	6	18

Findings also showed that accounting measures were the most common performance measurement tool at 100% meaning it was used in all the companies, benchmarking was used in 73% of the companies, process control in 64% of the companies, continuous improvement in 27% of the companies, strategic performance in 18% of the companies while customer service assessment was used in 18% of the companies.

#### 4.6 Extent of Competitive Advantage

Respondents' were given three statements on competitive advantage in their companies. Likert scale was used to measurement of characteristics and aspects of collaboration, and perceived benefits of collaboration among members in a supply chain. Respondents were asked to agree or disagree with each statement and the degree would vary between strongly agree, agree, somewhat agree, disagree and strongly disagree numbering 5, 4, 3, 2, and 1 respectively.

**Table 4.12: Companies' extent of competitive advantage**

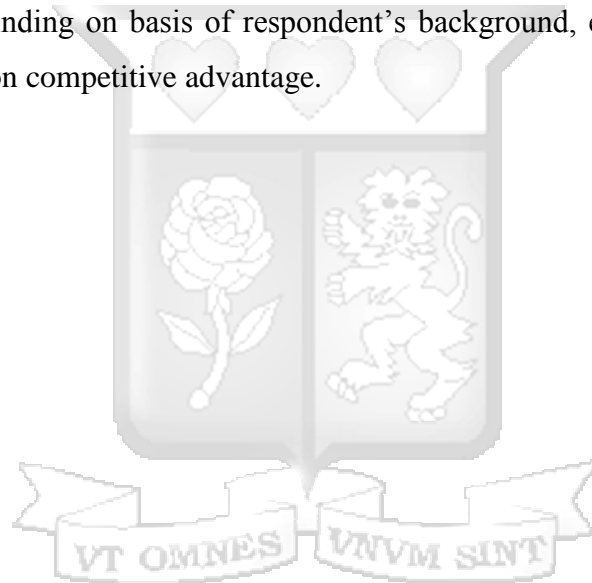
	Strongly agree		Agree		Somewhat Agree		Disagree		Strongly disagree		Mean	Stdev
	F	%	F	%	F	%	F	%	F	%		
The companies' competitive position is through cost leadership and differentiation.	9	27	18	55	1	3	3	9	2	6	3.88	0.06
The companies cultivate relationships and/or pre-commitment contracts in order to enhance their performance and retain existing customers.	5	15	21	64	2	6	2	6	3	9	3.70	0.04
The companies' brand equity is their source of competitive advantage	5	15	21	64	2	6	2	6	3	9	3.70	0.04
<b>Overall score</b>	-	-	-	-	-	-	-	-	-	-	<b>3.76</b>	<b>0.04</b>

From the findings respondents agreed companies' competitive position is through cost leadership and differentiation as shown by a mean of 3.88 and a standard deviation of 0.06; that the companies cultivate relationships and/or pre-commitment contracts in

order to enhance their performance and retain existing customers as shown by a mean of 3.70 and a standard deviation of 0.04; and that companies 'brand equity is their source of competitive advantage' as shown by a mean of 3.70 and a standard deviation of 0.04. The overall mean measure was 3.76 while the standard deviation was 0.04. The respondents therefore agreed with the statements. They viewed competitive positioning, customer relationships and brand equity as their sources of competitive advantage.

#### **4.7 Chapter Summary**

This chapter provided the study findings on effects of supply chain management on competitive advantage in food and beverage processing companies. The chapter represented the finding on basis of respondent's background, effects of SCM strategies and their effects on competitive advantage.



## CHAPTER FIVE

### DISCUSSION, CONCLUSION AND RECOMMENDATIONS

#### 5.1 Introduction

This chapter discusses the findings of the study. It is organized into five sections namely introduction, discussion, conclusions, recommendations and study limitations. The discussion section considers the major research findings in relation to the objective of the study followed by a presentation of the major conclusions arrived at from the research findings. Finally, at the close of the chapter are suggestions for improvement. Study limitations highlight challenges of the study.

#### 5.2 Discussions

##### 5.2.1 Effects of Supply Chain Collaboration on Competitive Advantage

Regression analysis reveals that supply chain collaboration has coefficient of (0.703) implying that it has a great effect on competitive advantage. In comparison with other independent variables (supply chain agility and supply chain integration), collaboration has greater contribution than supply chain agility (0.375) and has lesser effect than supply chain integration (1.664). Supply chain collaboration therefore has greater effect on competitive advantage as revealed by the magnitude of its coefficients. Supply chain collaboration coefficient has a positive sign implying that it is positively related to competitive advantage.

Significance was tested at (5%) level of significance and (95%) level of confidence. Supply chain collaboration p-value (0.00) is significant at (95%) level of confidence. Similarly, Stank, Keller and Daugherty, (2001) found out that there was a strong internal collaboration (internal logistical processes) significance (0.00) however there was lack of support for a direct link between external collaboration and company's performance suggesting that collaboration with customers and suppliers will not improve performance of a supply chain. Tummala, Phillips and Johnson, (2006) study indicated at (95%) confidence intervals, collaboration was statistically significant implying that respondents engaged in making sure there is accurate information flow, developing and maintaining

positive relationships with customers and suppliers, and maintaining a long-term commitment.

This study established that collaboration has contributed to companies achieving competitive advantage. Companies understand the need of collaboration and have taken measures to built long-term relationships with the suppliers, customers and competitors. Collaboration with suppliers benefits can be realized when partners are: 1) willing to work together, 2) understand each other viewpoints, 3) share information and resources, and 4) achieve collective goals (Stank, Keller and Daugherty, 2001). More than half of the companies (60%) agreed, while (6%) disagreed to have specialized channels whereby, participants depend on each other. Specialization in channels creates dependence among participants. According to Allerheiligen and Gill, (1996) specialization in channels creates dependence among participants. No one channel member can perform all of the functions necessary to move a product through the channel, which places all channel members in a state of mutual dependence.

The study revealed most respondents (67%) agreed while (21%) disagreed that they actively exchange information with supply chain participants. Information must be shared and data transmitted efficiently and on a timely basis in order to plan and control physical product flow adequately (Allerheiligen and Gill, 1996). Half of respondents (54%) agreed and 24% disagreed that the companies have common planning and synchronization of activities and business processes. Respondents (60%) agreed and (12%) disagreed that companies encourage co-operation in design and develop of products. Collaboration among chain participants helps companies tailor service offerings to the specific requirements of customers of choice by identifying their long-term requirements, expectations, and preferences (Stank, Keller and Daugherty, 2001).

Study findings revealed companies strive to build permanent long-term relationships with customers. Majority of companies (67%) agreed and (12%) disagreed that they keep and maintain a database of all their customers. More than half companies (57%) agreed while

(18%) disagreed surveyed manage customer complaints promptly. Respondents indicated that the timeline to address the concerns or complaints was in some cases over delayed.

Companies (67%) agreed while (9%) disagreed that they are keen to build trust amongst their customers. Half of respondents (58%) agreed while (6%) disagreed that they all strive to build permanent long-term relationships with customers. Most companies (66%) agreed while (21%) disagreed that they seek profitable relations (mutually beneficial) with their customers. Majority of the companies (70%) agreed while (12%) disagreed that they involve customers in issues related to product design and quality. Companies (70%) agreed to have an interactive website while only (3%) do not have. Companies that seek to attain a competitive edge through customer partnerships must become more focused internally, so that they may better respond to customer expectations and accommodate customer needs (Stank, Keller and Daugherty, 2001).

### **5.2.2 Effects of Supply Chain Agility on Competitive Advantage**

Regression analysis indicates that supply chain agility has the least coefficient (0.375) after supply chain integration (1.664) and supply chain collaboration (0.703) meaning it has the least effect on competitive study in this study as revealed by the magnitude of its coefficients. Its coefficient is positive implying that supply chain agility is related to competitive advantage.

At (5%) level of significance and (95%) level of confidence supply chain agility p-value was (0.00) meaning it is significant. In other studies, regression analysis revealed that overall the “more agile” group of companies’ model was significant and had a stronger relationships between the independent and dependent variables than the “less agile” group. It was also found that the “less agile” group had a greater number of significant relationships between variables than did the “more agile” group. For the “less agile” group this was p-value was (0.070), while for the “more agile” companies’ p-value (0.142) (Damien, Amrik and Shams-Ur, 2001).

This study found that companies have excelled in some areas and not in others as they strive to achieve supply chain agility and hence achieving competitive advantage.

Majority of companies (76%) agreed to be sensitive to quick response to customers' involvement and demand for customized products. The management teams in various companies (79%) agreed while (18%) disagreed that they make more responsive changes while considering the market place. The main focus is running companies' supply chains with an adequate level of agility to respond to changes as well as proactively anticipate changes and seek new emerging opportunities (Harrison et al., 1999; Christopher, 2000). Majority companies (73%) agreed had the view that an agile network is holistic and strategic and extends beyond the traditional boundaries to encompass all operations of the supply chain within which it operates implying few companies has engrained agility as a strategy. Agility is all about customer responsiveness, people and information, cooperation within and between companies and fitting a company for change. To be truly agile, a supply chain must possess a number of distinguishing characteristics which include: market sensitivity, virtuality, process integration, and networking (Kisperska-Moron and Swiercze, 2008).

Half the companies (55%) agreed while (21%) disagreed to have an information system that incorporates customers and suppliers and also increases levels of knowledge and competency allowing participants to broadly implement information technology. Majority companies (73%) agreed while (21%) disagreed to have invested in product research and development. The "more agile" companies were also found to be using technology to promote productivity, new product development and customer satisfaction. Agility in a supply chain is the ability of the supply chain as a whole and its members to rapidly align the network and its operations to dynamic and turbulent requirements of the customers hence achieving competitive advantage (Damien, Amrik and Shams-Ur, 2001).

### **5.2.3 Effects of Supply Chain Integration on Competitive Advantage**

Regression analysis indicates that supply chain integration has the greatest coefficient (1.664). Supply chain integration therefore had the greatest effect on competitive advantage followed as revealed by the magnitude of its coefficient. Its coefficients were positive implying that supply chain integration is positively related to competitive advantage.

At 5% level of significance and 95% level of confidence supply chain supply chain integration had a p-value (0.04) meaning that it is significant. Similarly, other studies indicate that supply chain integration magnitude and significance supported the research model at p-value (0.44) (Rai, Patnayakuni and Seth, 2006). Studies on supply chain dimensions – information flow and integration of physical flow, there was a strong significance as indicated by P-value (0.023). This is consistent with an emphasis in the literature on the importance of integration, pointing to the need to blend in IT systems and information flow and supply chain link (Christopher, 2000; Handfield et al., 2000). In constrast, Cagliano, Caniato, Spina, (2006) in their study on the linkage between supply chain integration and manufacturing improvement programmes found out there was no significant influence on the use of information sharing, nor does it have a significant influence on supply chain integration. A possible explanation for this was that companies adopting enterprise resource planning (ERP) systems both in production and in supply management aim at improving internal efficiency, not at increasing the information exchange with suppliers.

Supply chain integration had effect on competitive advantage in that companies have installed IT systems that facilitate flow of information within the chain. They manage participants within chain network. Study findings revealed that most companies (67%) agreed while (30%) disagreed to have streamlined financial operations. They have a financial accounting system they use. Majority of the companies (73%) agreed while (9%) disagreed that they share information with all participants in the supply chain. Basic condition for successful supply chain management is an unrestricted cross border information flow between partners of the supply chain. Common design, planning and operation of the supply chain calls for provision of all relevant information. Often this fails due to missing integration of systems and data over the related partner enterprises. Absence of IT compatibility is known as one of the biggest problems in supply chain management (Nienhaus, et al., 2005).

Majority of the companies (75%) agreed while (12%) disagreed to have IT system that facilitates sharing information (real time connectivity). This implies that they may have

an IT system however it does not support real time connectivity. According to Lambert and Cooper, (2000) operating an integrated supply chain requires continuous information flows, which in turn help to create the best product, flows. Majority of the companies (69%) agreed while (24%) disagreed to strive to share technology with supply chain participants. The customer remains the primary focus of the process. Achieving a good customer-focused system requires processing information both accurately and in a timely manner for quick response systems that require frequent changes in response to fluctuations in customer demand.

The study reveal that majority of companies (84%) agreed while only (9%) disagreed that they manage an integrated chain which include information requirements, physical logistics and chain participants. Most of the companies (82%) agree while (15%) disagreed to have excelled in delivery service. Lambert and Cooper, (2000) argue that key supply chain integration processes include: customer relationship management, demand and delivery management, order fulfillment and product flow management, procurement, product development and commercialization, and returns. Majority of companies' (79%) agreed and (15%) disagreed that their supply chain network has three or four-party logistics while companies' (67%) agreed while (21%) disagreed to have two-party supply chain logistics. Less than half of respondents (48%) agreed while (33%) disagreed to strive to build trust within the supply chain. Product flows cannot be accomplished without implementing a process approach to the business (Nienhaus, et al., 2005).

#### **5.2.4 Extent of Competitive Advantage**

Regression analysis indicates that supply chain integration has the greatest coefficient (1.664), followed by supply chain collaboration (0.703) and supply chain agility (0.375) respectively. Supply chain integration therefore had the greatest effect on competitive advantage followed as revealed by the magnitude of its coefficient. All coefficients are positive implying they are positively related to competitive advantage.

At (5%) level of significance and (95%) confidence level, supply chain collaboration had a p-value of (0.00), supply chain agility p-value of (0.00) and supply chain integration p-value of (0.04) meaning that regression model is statistically significant.

Correlation results show that among the given independent variables supply chain integration has (0.813), supply chain collaboration has (0.779) and supply chain agility has (0.611). This implies that once a company has implemented all three supply chain strategies, its will have positive effects as it advances towards achieving competitive advantage.

In this study, competitive advantage was an attribute of three variables (competitive positioning, customer relationships and brand equity). To a large extent food and beverage processing companies have strive to attain competitive advantage over their competitors. Majority of the companies (79%) agreed while (15%) disagreed that brand equity is the source of competitive advantage. This is true especially because they deem their product as competitive in the market. Brand equity is the differential effect of brand awareness and meaning combined on customer response to the marketing of the brand. Positive brand equity is the degree of marketing advantage a brand would hold over an unnamed or fictitiously named competitor. The branding strategy goal is to reinforce different products/services experience with a demonstrably different brand presentation (Berry, 2000).

Most of the companies (79%) agreed, while (15%) disagreed that cultivate customer relationships and/or pre-commitment contracts firms in order to enhance their performance and retain existing customers. This implies that forging customer relationships through pre-commitment contracts is a priority to majority of the companies. However, by satisfying customers, companies can achieve competitive advantage (Lambert and Cooper, 2000). Within an organization, customer value is created through collaboration and cooperation to improve efficiency (lower cost) or market effectiveness (added benefits) in ways that are most valuable to key customers (Christopher, 1998).

Companies' (82%) agreed while (15%) disagreed that competitive positioning is through cost leadership and differentiation. Companies are managing their cost and offering differentiated products though they face competition in this area. According to Ambe, (2010) cost advantage occurs when a company delivers the same services as its competitors at a lower cost. Further he argues that to achieve differentiation advantage, a company must deliver greater services for the same price of its competitors. They are collectively known as positional advantages because they denote the firm's position in its industry as a leader in either superior services or cost.

Competitive advantage is the advantage a company has over her competitors, gained by offering consumers greater value, either by means of lower prices or by providing greater benefits and service that justifies higher prices. SCM is about competing on value, collaborating with customers and suppliers to create a position of strength in the marketplace based on value derived from end consumer. The overall objectives of SCM is to create value for customers, competitive advantage and improved profitability for supply chain firms, the dimensions of value that may be important to customers, and the mechanisms whereby competitive advantage and improved profitability can be achieved (Christopher, 1998). In the competitive context, successful companies either have a productivity advantage (or cost advantage) or value advantage, or ideally, a combination of these two (Christopher 1998). A supply chain is a part of an organization's competitive advantage.

A company's competitive advantage is built upon well-planned and executed supply chain management strategies that are sustainable. Supply chain management is never totally attained by any company or group of companies, nor can the elements of success enjoyed by one supply network be transferred to another with the expectation of identical levels of performance. Therefore, competitive advantage belong to those supply chains that can activate concurrent business processes and core competences that merge infrastructures, share risks and costs, leverage the shortness of today's product lifecycle, reduce time to market, and gain and anticipate new vistas for competitive leadership (Ross, 1998).

## **5.3 Conclusion**

### **5.3.1 Effects of Supply Chain Collaboration on Competitive Advantage**

The purpose of this study was to analyze effects of supply chain management strategies on competitive advantage in food and beverage processing companies in Nairobi County. Regression and correlation were used to analyze the relationship of effects of supply chain management strategies on competitive advantage.

The study concludes that companies in food and beverage sector strive to build long-term relationships their suppliers and customers. Ideally companies actively exchange information with suppliers, have common planning and synchronization of activities and business processes. Companies encourage co-operation in design and develop of products and that the companies have specialized channels whereby, participants depend on each other. The study further concludes that all the companies surveyed manage customer complaints however the process is characterized with delays. They are keen to build trust amongst their customers; they strive to build permanent long-term relationships with customers; that the companies seek profitable relations (mutually beneficial) with their customers and involve customers in issues related to product design and quality. Companies put more effort towards achieving competitive advantage by combining strategies hence making it difficult to duplicate a supply chain with exact participants and logistics.

### **5.3.2 Effects of Supply Chain Agility on Competitive Advantage**

The study also concludes that the companies are sensitive to quick response to customers' involvement and demand for customized products. The management team tends to makes more responsive changes while considering the market place. There are areas of improvement which include companies' view an agile network is holistic and strategic and extends beyond the traditional boundaries to encompass all operations of the supply chain within which it operates. Majority of companies have invested little in product research and development. Moreover, some respondents indicated they lacked market sensitivity (through the capturing and transmission of point of sale data), creating virtual supply chains (based on information rather than inventory), process integration

(cooperation between buyers and suppliers, joint product development etc.) and networks (confederations of partners linked together as against “stand alone” organizations. Supply chain agility strategy should be emphasized if food and beverage companies are to use market knowledge and a virtual corporation to exploit profitable opportunities and achieve competitive advantage.

### **5.3.1 Effects of Supply Chain Integration on Competitive Advantage**

Further the study concludes that the companies surveyed have streamlined financial operations, companies share information with all participants in the supply chain though majority of the companies lack IT systems that facilitates sharing information (real time connectivity). There is need for improvement as systems are prone to continuous advancement in order to enhance integration and stay competitive in the business environment. More effort is required in to build trust within the supply chain.

The study finally concludes that companies’ competitive advantage is achieved through supply chain collaboration, supply chain agility and supply chain integration. Food and beverage companies should manage integrated supply chains where customer is the focus, and information requirements, physical logistics and chain participants are managed as major sources of competitive advantage. The objectives of the study were met.

## **5.4 Recommendations**

### **5.4.1 Supply Chain Collaboration and Competitive Advantage**

The study found out the timeline to address customers’ concerns and/or complains was in some cases over delayed. There is need for the management to develop a clearly laid out policies and procedures for handling customers’ concerns and/or complaints. The study recommends companies develop interactive websites to achieve effective information sharing and concerns can be addressed in real time. There is need for management to put more emphasis on interaction with competitors especially in areas of production. Either formally or informally companies can find areas of synergy in their supply chain.

### **5.4.2 Supply chain Agility and Competitive Advantage**

The study recommends companies invest in facilities that will enable them be more market sensitive with capacity to flexible to adapt to the fast changing business environment. More and more the management team should make responsive changes while considering market present and projected conditions. It is imperative for companies develop policies and procedures guidelines in order to ensure continuous product research and development with the aim of satisfying customer ever changing demands and achieve competitive advantage over their competitors.

### **5.4.3 Supply Chain Integration and Competitive Advantage**

Companies should strive to develop IT systems that facilitate sharing information to achieve real time connectivity. In order to achieve smooth flow of information and goods, companies strive to share technology with supply chain participants. There is need for management to improvement on the existing systems to enhance integration. This can be achieved by developing policies and procedures that govern management and enhancement of supply chain integration. Trust is an integral part within the supply chain that companies should strive to build.

Companies have their strengths in collaboration and integration however it is the synergy of all three SCM strategies that facilitates a company's competitive advantage. To achieve competitive advantage, the study recommends the implementation of the three strategies in a company's supply chain. This way, it becomes difficult to imitate the same strategies and facilities within a supply chain hence it is difficult to duplicate an exact supply chain keeping the company ahead and differentiated from its competitors. Finally the study recommends that the companies cultivate relationships and/or pre-commitment contracts firms in order to enhance their performance and retain existing customers.

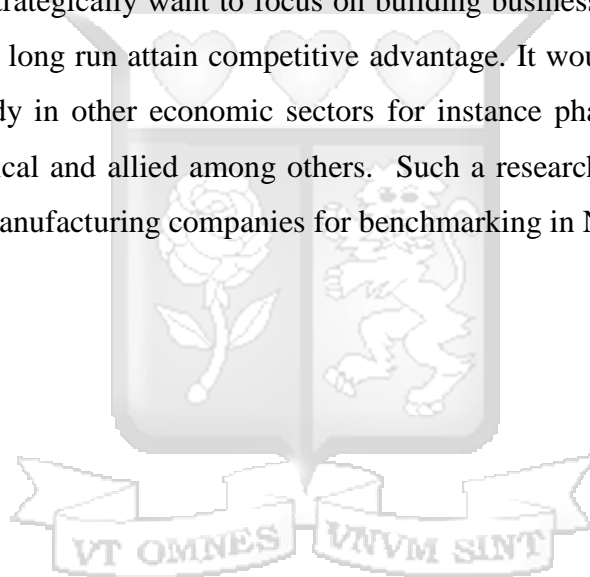
### **5.5 Study Limitations**

It was difficult for the researcher to secure some appointments because some respondents insisted on self-administering the questionnaires. Some of these did not fill and return the questionnaires. This affected the research since all the firms were expected to fill to make

the results more credible. Due to the confidential nature of information, some respondents may not have disclosed important information probably fearing to be copied by competitors.

### **5.6 Recommendations for Further Research**

This study results suggest that food and beverage processing companies implement supply chain management strategies (collaboration, agility and integration) to an extent. There is need to evaluate effect of other supply chain management strategies such as cost efficiencies, channel leadership and speed of operations information and inventory flow just to mention a few on competitive advantage. This is particularly important for companies who strategically want to focus on building business models that are difficult to imitate and the long run attain competitive advantage. It would be interesting to carry out the same study in other economic sectors for instance pharmaceutical and medical equipment, chemical and allied among others. Such a research would provide valuable information for manufacturing companies for benchmarking in Nairobi.



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## APPENDICES

### APPENDIX: I

Logistics Manager  
**KENYA NUT COMPANY LIMITED**  
P O BOX 52727, 00200  
NAIROBI

Dear Sir/Madam,

I am Sarah Waithira Kariithi a Masters student at Strathmore University carrying out research on the effects of supply chain management strategies on competitive advantage in food and beverage manufacturing companies in Nairobi. This is in partial fulfilment of the requirement of the Master in Commerce degree program at Strathmore University.

The purpose of this study is to analyze effects of supply chain management strategies on competitive advantage in food and beverage manufacturing companies in Nairobi. The results of this study will provide an understanding of how supply chain management strategies enhance competitive advantage. Your company is registered with Kenya Association of Manufacturers and as such we saw it prudent to involve you in a survey that would help industry stakeholders understand and make appropriate decisions to effectively assess supply chain management as a competitive advantage.

This is an academic research and confidentiality is strictly emphasized, your name will not appear anywhere in the report. Kindly spare some time to complete the questionnaire attached.

Thank you in advance.

Yours sincerely,

Sarah Kariithi

## APPEDIX II: QUESTIONNAIRE

### FOOD AND BEVERAGE PROCESSING COMPANIES

#### IN NAIROBI COUNTY

Company: \_\_\_\_\_

Location: \_\_\_\_\_

Date: \_\_\_\_\_

## SECTION I

### COMPANY PROFILE

*Kindly answer the questions either by ticking in the boxes  or writing in the spaces provided.*

1. Respondent's Name (Optional)

---

Position:

Department:

2. For how long has the company existed?

- 1 – 12 months       10 – 20 Years       Above 50 Year  
 1– 10 Years       30 – 40 Years

3. How would you categorize your company?

- Local  
 Foreign  
 Partly local and partly foreign

4. How would you classify number of employees in your company as between:

- 1 – 10                       30 – 40                       Above 100  
 10 – 20                       40 – 50

5. Which category would you classify your products?

- Dairy Products                       Cereals  
 Meat products                       Bakery wares  
 Fats and Oils                       Sweeteners  
 Fruit and Vegetables                       Beverages  
 Confectionery                       Salt, spices & Sauces

Any other \_\_\_\_\_

6. For how long has the logistics department been in existence?

- 1 – 12 months                       10 – 20 Years                       Above 50 Year  
 1– 10 Years                       30 – 40 Years

## SECTION 2

### SUPPLY CHAIN STRATEGIES

#### Supply chain collaboration

The following are some of the SCM strategies. To what extent do they apply to your company? *In a Likert scale of 1 – 5, where 1 is Strongly disagree, 2 is Disagree, 3 is Somewhat agree, 4 is Agree and 5 is Strongly agree, kindly tick your favorable attitude corresponding to your personal opinion for each statement.*

7. How would you characterize your collaboration (co-operations within the supply chain) with suppliers and customers in your supply chain?

		Strongly agree	Agree	Somewhat Agree	Disagree	Strongly disagree
<b>Supplier Partnerships</b>	a) My company has specialized channels whereby, participants depend on each other.					
	b) My company has common planning and synchronization of activities and business processes.					
	c) My company actively exchanges information with suppliers.					
	d) My company encourages co-operation in design and develop of products.					
	e) My company has built long-term relationships with its suppliers.					
	f) Any other characteristic list it below					
<b>Customer relationships</b>	a) My company keeps a database of all its customers.					
	b) My company has an interactive website.					
	c) My company manages customer complaints promptly.					
	d) My company involves customers in issues related to product design and quality.					
	e) My company seeks profitable relations (mutually beneficial) with its customers.					
	f) My company is keen to build trust amongst its Customers.					
	g) My company strives to build permanent long-term relationships with customers.					
	h) Any other characteristic list it below.					

8. How would you describe collaboration and/or co-operation within supply chain? *You may tick more than one option*

- 
- My company has achieved information sharing effectively.
- My company has achieved supply chain cooperation.

- My company is dealing with conflict as a result of competition, price terms ...
  - All supply chain participants benefit from shared resource e.g. technology, information.
  - Any other
- 

9. How would you rate collaboration and/or co-operation within supply chain?

- a) Very low level of co-operation
- b) Low level of co-operation
- c) Moderate level of co-operation
- d) High level of co-operation
- e) Very high level of co-operation

10. Do you formally or informally exchange information or interact with your competitors?

- a) Yes
- b) No

11. Describe your company's relationship with her competitors in the industry?

- c) Non-existent
- d) Poor
- e) Some what exists
- f) Good relation
- g) Highly involved

**Supply chain agility**

12. How would you describe agility (ability of the management to respond to fast-changes business environment) in your supply chain? *Tick the appropriate option.*

- a) Very low agility
- b) Low level agility
- c) Moderate agility
- d) High agility
- e) Very high agility

13. How would you characterize agility in your supply chain?

*In a Likert scale of 1 – 5, where 1 is Strongly disagree, 2 is Disagree, 3 is Somewhat agree, 4 is Agree and 5 is Strongly agree kindly tick your favorable attitude corresponding to your personal opinion for each statement.*

	Strongly agree	Agree	Somewhat agree	Disagree	Strongly disagree
a) My company is sensitive to quick response to customers' involvement and demand for customized products.					
b) My company is of the view that an agile network is holistic and strategic and extends beyond the traditional boundaries to encompass all operations of the supply chain within which it operates.					
c) The management team makes more responsive changes while considering the market place.					
d) My company is market sensitive with capacity to flexibly adapt to the fast-changing environment.					
e) My company has an information system that incorporates customers and suppliers and also increases levels of knowledge and competency allowing participants to broadly implement information technology.					
f) My company has invested in product research and development					
g) Any other characteristic list it below					

**Supply chain integration**

14. How would you characterize supply chain integration (the effort to elevate the linkages within each supply chain component, in order to realize better decision making, get all the pieces of the chain to interact in a more efficient way hence creating supply chain visibility and identify bottlenecks) in your network?

*In Likert scale of 1 – 5, where 1 is Strongly disagree, 2 is Disagree, 3 is Somewhat agree, 4 is Agree and 5 is Strongly agree, kindly tick your favorable attitude corresponding to your personal opinion for each statement.*

		Strongly agree	Agree	Somewhat Agree	Disagree	Strongly disagree
<b>IT infrastructure</b>	a) My company has IT system that facilitates sharing information (real time connectivity).					
	b) My company shares information with all participants in the supply chain.					
	c) My company has streamlined financial operations.					
	d) My company strives to share technology with supply chain participants.					
	e) Any other characteristic list it below.					
<b>Supply Link</b>	a) My company strives to build trust within the supply chain.					
	b) My company's supply chain is two party logistics.					
	c) My company's supply chain is three or four party logistics.					
	d) My company has excelled in delivery service.					
	e) My company manages an integrated chain: information requirements, physical logistics and chain participants.					
	f) Any other characteristic list it below					

15. How would you describe integration (Components and participants of the supply chain are linked and interact in a more efficient manner) in your supply chain? *Tick the appropriate option.*

- a) Very low integration
- b) Low level integration

- c) Moderate integration
- d) High integration
- e) Very integration

16. The extent of integration is felt in which stage of manufacturing? *Tick appropriate options*

- a) Product design
- b) Market testing
- c) Sale of product
- d) Inventory management
- e) Servicing products
- f) Recycling
- g) None of the above
- h) Any other

---

17. Does your company have formal means for analyzing supply chain performance?

- a) No formal means
- b) Limited formal means
- c) Some formal means
- d) Mainly formal means
- e) Extensive formal means

18. Which performance tool does your company use with regard to evaluating your supply chain? *Tick appropriate options.*

- a) Accounting Measures
- b) Scorecard

- c) KPI
- d) Strategic performance
- e) Continuous improvement
- f) Process control
- g) Quality control system in SCM
- h) Quality programme in SCM
- i) Customer service
- j) Customer satisfaction
- k) Benchmarking
- l) Any other

**Competitive Advantage**

19. How would you describe your company's source of competitive advantage?

*In Likert scale of 1 – 5, where 1 is Strongly disagree, 2 is Disagree, 3 is Somewhat agree, 4 is Agree and 5 is Strongly agree, kindly tick your favorable attitude corresponding to your personal opinion for each statement.*



	Strongly agree	Agree	Somewhat agree	Disagree	Strongly disagree
a) My company's competitive position through cost leadership and differentiation.					
b) My company cultivates relationships.					
c) My company's brand equity is our source of competitive advantage					

**THANK YOU FOR YOUR TIME AND THOUGHTFUL CO-OPERATION**