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ABSTRACT

This study sought to establish the influence integrated supply chain on the performance of food and beverage manufacturing companies in Kenya with a view to address the supply chain inefficiencies. This study used a descriptive research design as it allows the researcher to describe record, analyze and report conditions that exist. The study targeted a population of 187 food and beverage companies in Kenya where 125 were sampled. Primary data was obtained by the use of questionnaires that were administered to the respondents. Quantitative data was analyzed through descriptive statistics and facilitated by use of SPSS version 22. Inferential statistical analysis done using multiple regressions and correlation analysis indicated that purchasing practices, distribution practices, supplier partnerships and operations management have a positive and significant influence on performance of food and beverage manufacturing firms in Kenya. The study recommended that there is a need for the manufacturing firms to increase adoption of purchasing practices such as spends consolidation, joint total cost reduction and joint value engineering. The study also recommended that there is a need for the manufacturing firms to increase adoption of distribution practices such as transport consolidation, joint information systems and joint storage systems. The study also recommended that there is a need for the manufacturing firms to increase adoption of supplier partnerships through supplier improvement programs and joint planning and goal setting activities. Another recommendation by the study was that there is a need for manufacturing firms to increase adoption of operations management practices like quality management, inventory management and risk management.

Key Words: *Purchasing Practices, Distribution Practices, Supplier Partnerships, Operations Management*

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INTRODUCTION

Supply chain integration is the extent to which all activities within an organization and the activities of its suppliers, customers, and other supply chain members are incorporated together (Vachon, & Klassen, 2006). External integration involves customer and supplier integration which is the degree to which a manufacturer partners with its external partners to structure inter-organizational strategies, practices and processes into collaborative, synchronized processes (Zhao, Huo, Selen, & Yeung, 2011). Customer integration involves core competencies derived from coordination with critical customers, whereas supplier integration involves core competencies related to coordination with critical suppliers.

In contrast, internal integration focuses on activities within a manufacturing firm. It is the degree to which a manufacturer structures its own organizational strategies, practices and processes into collaborative, synchronized processes to fulfill its customers' requirements and efficiently interact with its suppliers (Zhao *et al*. 2011).

Maintaining a close relationship between customers and the firm provides opportunities for improving the accuracy of demand information, which reduces the manufacturer's product design and production planning time and inventory obsolescence, allowing it to be more responsive to customer needs(He, Lai, Sun, & Chen, 2014). Due to the fact that customer integration creates opportunities for leveraging the intelligence embedded in collaborative processes, costs are significantly reduced, greater value enhanced and demand changes detected early enough. Customer integration has been found to be related to customer satisfaction both directly and indirectly through its relationship with product development and innovation. Supply chain integration therefore augments performance only if supply complexity is high (He *et al.* 2014).

In Japan intensive integration is not necessarily the best solution in all cases; rather limited integration might be beneficial in some areas depending on different national and industry contexts (Bask & Juga, 2001). In Thailand, Wong, Boon-Itt and Wong (2011) argue that under environmental uncertainty the relationships between supplier/customer integration and delivery and flexibility performance and those between internal integration and product quality and production costs are high.

The supply chain of Chinese companies transcends different countries in different continents making this country one of the increasingly focal point of manufacturing. As a result of this development in the supply chain processes, manufacturing firms in the country are heavily reliant on access to timely and accurate market information (Zhu&Sarkis, 2006).The opposite side of this however is that China lacks adequate formal entities that sustain free markets. This is due to the fact that majority of the manufacturing firms in the country face challenges that range from vague and erratic rules for market competition. On the same note, there is high application of informal ties by China to synchronize transactions.

In Ghana, Otchere, Annan and Anin (2013) argued that supply chain integration creates a competitive advantage among the cocoa manufacturing firms. They argued that since suppliers and retailers have knowledge in different domains, the combination can create unique knowledge that can be applied to improve business knowledge. Better relationships between retailers and their suppliers also improve prospects of new product acceptance. They argued that effective use of relevant and timely information by all functional elements within the supply chain is key to any organization and also provides a distinguishing factor for that particular organization.

Among South African firms, Laursen and Salter (2006) argued that strategic partnering has become key in

the current global market. Organizations have been forced to collaborate with other firms through joint supply chains that focus on joint planning, coordination, and process integration between the organization, its suppliers, its customers, and other partners such as the logistic providers. In addition to cost reduction, collaboration offers the South African firms advantages of business expansion to other areas, increased return on assets, improved customer service, reduced lead times, increased reliability and responsiveness to market trends, and a shorter time to market.

According to Katua (2014) the manufacturing firms in Kenya have sought to adopt better supply chain practices to significantly enhance supply chain coordination. It is on this background that these firms have considered application of supply chain integration as a means of attaining superior performance with regard to supply chain process. Application of SCI by the manufacturing companies in Kenya has spurred accomplishment of the organizations' strategic goals, decrease in risks as well as enhancement of internal and external synchronization of management process. According to Chirchir (2015), supply chain integration among commercial banks in Kenya has seen adoption of practices such as information sharing so as to respond to customer requirement, enhance the product availability, and efficiently coordinate processes in order to lower the costs, offer better customer service, improve revenues, and have properly guided capacity plans.

Food processing consists of multiple value chains beginning with agricultural production and reaching into domestic, regional, and global markets. Beverage or drink processing firms are concerned with products ranging from drinking bottle alcohol, non-alcoholic drinks, bottled water, fruit or vegetable juices and soft drinks (carbonated drinks).Food and beverage industry in Kenya is a basic productive sectors singled out for development and expansion of the economy thus it has enormous possibilities for creation of employment, reducing or eradicating poverty and creation of wealth. The sector continues to positively contribute towards accomplishment of Millennium Development Goals in the intermediate and far reaching term especially the aim of goal eradicating hunger and extreme poverty and the goal of Development and Global Partnership.

Statement of the Problem

Manufacturing companies in Kenya have been experiencing problems in the performance of their production and operations management (KAM Directory, 2015). The food and beverage supply chain has particularly ceaselessly been attracting attention for inconsistencies in supply chain process exemplified by shortages, safety scares of the products and other disruptions that the sub-sector can afford to do away with (Awino, 2011). This is despite the fact that the sector is responsible for up to 2.8% of GDP (KAM, 2015). In particular, incessant SC disruptions have resulted to sales drop of 7 %, as well as a drop of ROA by 35% (Hendricks & Singhal, 2005).

Additionally, short shelf life and perish ability of F & B goods coupled with problems of lack of sufficient infrastructure have made the food and beverages firms susceptible to SC challenges. Consequently, a good number of F& B manufacturing firms have collapsed or are contemplating closing down their operations resulting to huge loss of jobs and sluggish economic growth (Mutunga, Magutu, & Chirchir, 2015). This study therefore aimed to establish the effect of SCI on the performance of F & B firms in Kenya and make recommendations to enhance adoption of the system.

This study was also motivated by research gaps in the existing literature on the influence of SCI system and firms performance. For example, the study by Kamau (2013) failed to establish how purchasing practices, distribution practices, supplier partnerships and

operations management enhance the performance of food and beverages firms in Kenya. Zailani and Rajagopal (2005) examine SCI in US verses East Asian companies. The study was however conducted in a different context that does not necessary reflect the Kenyan situation. Yunus and Tadisina. (2016) studied SCI in Indonesia with the results suggesting existence of a positive connection with firm performance. The study however failed to take into consideration the influence of the four practices on firm performance. This study therefore addressed these research gaps by establishing the influence of SCI on performance of food and beverage manufacturing firms in Kenya.

Research Objectives

The aim of the study was to establish the influence of integrated supply chain system on performance of food and beverage manufacturing firms in Kenya. The specific objectives were:-

- To establish the influence of purchasing practices on performance of food and beverage manufacturing firms in Kenya
- To determine the effect of distribution practices on performance of food and beverage manufacturing firms in Kenya
- To examine the influence of supplier partnerships on performance of food and beverage manufacturing firms in Kenya
- To assess the influence of operations management on performance of food and beverage manufacturing firms in Kenya

LITERATURE REVIEW

Theoretical Review

Resource Based Theory

The resource-based view theory regards the firm as a cognitive system, which is characterized by idiosyncratic and context-dependent competences that are core to strategic purposes. These are conditioned by hierarchical capabilities, or sets of routines, involved in the management of the firm's core business processes that help to create value. Competences typically involve the development of specialist expertise, and firms may become locked into a trajectory that is difficult to change effectively in the short to medium-term (Sum Chau, & Witcher, 2008). The premises of the resource-based view is that successful firms develop distinctive capabilities on which their future competitiveness will be based; which capabilities are often idiosyncratic or unique to each firm, and may also be implied and intangible in nature.

RBV suggests that firm performance is mainly determined by internal rather than external variables (Barney, 2001). Firms' follow heterogeneous historical paths and as a result, create different qualifications that affect their capabilities in different ways (Wernerfelt, 1984). Successful firms in an industry are successful because they can access a range of resources and thus gain competitive advantages. In this context, "resources" refers to all tangible and intangible assets, such as cash, loans, capabilities and qualifications, organizational processes, firm attributes, information, and knowledge (Wernerfelt, 1984).

Relational View Theory

The relational view of the firm was advanced by Dyer and Singh (1998) who advocated how transaction exchange relationships can be developed into collaborative integrations and the critical factors for such integrations. The key premise of this theory is that, a relational rent and high firm performance can be generated through value-adding initiatives enabled by inter-firm resource and routine. According to Devinney and Richard (2005), the distinctive characteristics of such relational integrations include information exchanges between parties, complementary strategic and organizational resource combinations, relationship-specific asset investments, and effective relational governance. They further

point that the mechanisms that subsequently preserve relationally derived performance benefits include causal ambiguity, time compression diseconomies, inter organizational asset interconnectedness, partner scarcity, resource indivisibility, and institutional environments.

Drawing upon the work of Dwyer, Schurr and Oh (1987) and Morgan and Hunt (2002) on collaborative inter-organizational relationships as well as the relational view of the firm, they conceptualize how logistics integrations operate to generate rents. They suggest that flows of strategic information between partners represent the exchange of complementary strategic resources and this exchange is characterized by time compression diseconomies and is facilitated by asset interconnectedness between partners, and that these complementary strategic resources generate relational rents.

The Principal-Agent Theory

The Principal-Agent Theory or the Agency theory was developed by Jesen and Meckling (1976), and has been widely adopted. According to Jesen and Meckling (1976), this theory is premised on ownership and control over economic activities of a firm that are separated whereby the former is confined to principals and the latter to the agents who act on behalf of the principals. In this kind of arrangement, it is possible to have agency problems ranging from information asymmetry, inconsistent objectives, differing approaches to risk and outcomes.

This theory helps understand why the principal delegates an activity to an agent. According to the agency theory Principals and agents are assumed to be self-interested, rational and risk-averse; the principal is also searching for mechanisms to mitigate risks. The theory helps us understand that the reasons why a company partners with the suppliers and the critical factors considered before entering into such as relationship. The agency theory is applicable to the problems of F &B supplier relationship arising in the context of supply of products. The theory also helps understand the role of better purchasing practices which involve trust and understanding between various parties.

Network Theory

Jacob Moreno is credited with developing the first sociograms in the 1930s to study interpersonal relationships (Bellamy & Basole, 2013). The concepts were later formalized and they have become universal in the social and behavioral sciences (Borgatti *et al.,* 2009). Based on this theory, the success of a firm is not only confined to favourable outcomes of the cooperation between the firm and its partners, but extends to the nature and effective outcome of the cooperation these partners foster with competitors.

In the context of this study, the network theory will help understand how well food and beverages manufacturing firms in Kenya can develop long-term, trust based relationship with their suppliers in order to effectively enhance performance along the supply chain and their overall organizational performance.

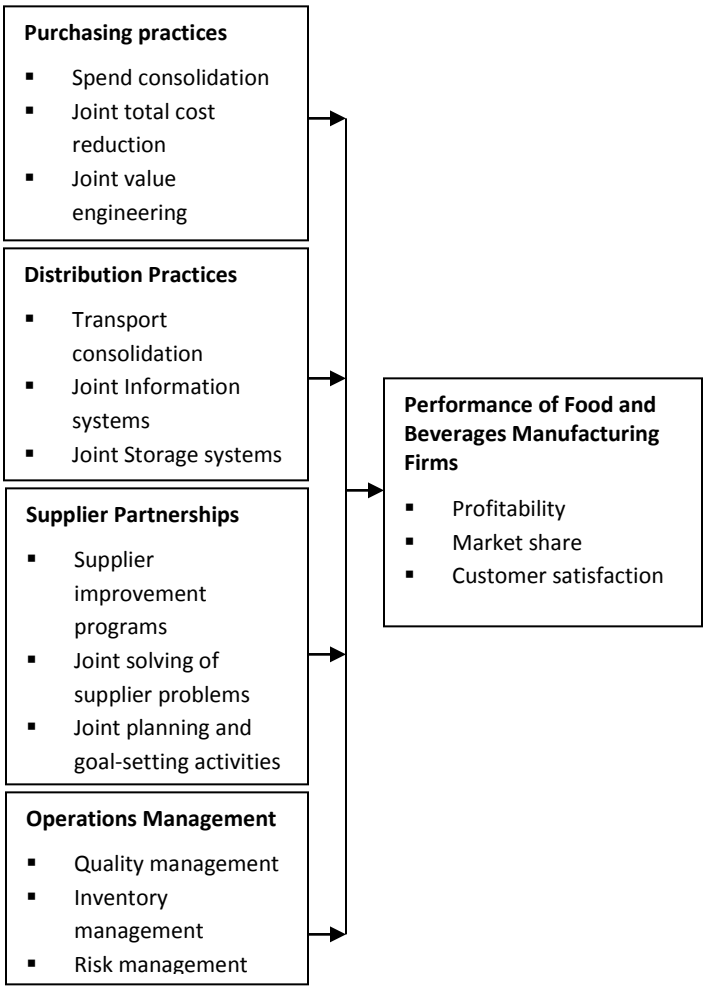
Theory of Constraints

The theory of constraints (TOC) was proposed by Goldratt, and has been used in various management disciplines (Cyplik, Hadaś & Domański, 2009). The theory postulates that there exists at least one constraint in any particular organization that hinders it from attaining its set targets and goals. The theory thus acts to not only initiate but also implement breakthrough improvement.

The theory is relevant in explaining operations of the firm thus applicable in linking operations management to performance of the organization. The theory also plays relevance in explaining logistical issues of the firm such as distribution practices. The theory's proposition is that the organizations have difficulties in transporting their products between the involved parties. Hence, product distribution in the

supply chain will ensure the partners are integrated. TOC is therefore useful in measuring the influence of distribution practices and operations management practices on the performance of food and beverages manufacturing companies in Kenya.

Conceptual Framework



Independent Variables

Independent Variable **Dependent variable**

Figure 1: Conceptual Framework

Empirical Review

Purchasing Practices

A study by Lawson *et al.* (2009) focused on strategic purchasing, supply management practices and buyer performance improvement of UK manufacturing organisations. Using empirical data collected from 111 United Kingdom purchasing executives, a structural equation model was used to test the theoretical framework. The results provided support for four of the six hypotheses developed. Strategic purchasing was found to have an indirect, significant effect on improving buyer performance, acting through supplier integration. Strategic purchasing also had a significant effect on the use of socialization mechanisms, but not on supplier responsiveness.

Danese and Romano (2011) on supply chain integration and efficiency performance was based on the interactions between customer and supplier integration. This study analyzed data from a sample of 200 manufacturing plants. The results of the study showed that supplier integration positively moderates the relationship between customer integration and efficiency, whereas the analyses failed to support the hypothesis that in general customer integration positively impacts on efficiency. They also revealed that, when supplier integration is at a low level, customer integration can even produce a reduction in efficiency.

A study conducted by Narasimhan and Das (2011) on the impact of purchasing integration and practices on manufacturing performance sought to explicate the concept of purchasing integration and examine its relationships with purchasing practices and manufacturing performance. According to the authors, purchasing integration refers to the integration of strategic purchasing practices and goals with a firm's objectives. Alternative models linking purchasing integration to purchasing practices and manufacturing performance were hypothesized and tested using empirical data. Purchasing integration was found to moderate the relationship between purchasing practices and manufacturing performance. Increased investments in purchasing integration were observed to lead to higher

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performance returns from investments in purchasing practice.

Kaufmann and Gaeckler (2015) focused on the relationship between purchasing integration and purchasing decision-making speed. The study particularly analyzed the impact of customer integration on efficiency, and the moderating role of supplier integration. The research analyzed data from a sample of 200 manufacturing plants. Two hypotheses were tested through a hierarchical regression analysis. The findings of the study pointed to the fact that supplier integration positively moderates the relationship between customer integration and efficiency, whereas the analyses do not support the hypothesis that in general customer integration positively impacts on efficiency and performance.

Distribution Practices

Yunus (2013) sought out to establish the effect of distribution integration and organizational performance in Indonesia. He established large extent of supply chain integration in the firms in Indonesia, which was characterized with ERP tools and functional coordination that lead to increase in the customer satisfaction through demand planning, reduction in lead-time, timely delivery and prompt decision-making. The study used a descriptive analysis and the use of questionnaires to carry the research, which the study showed a positive relationship between supply chain integration and organizational performance. However, the study focused on firms in Indonesia, which their mode of operation can be different here in Kenya.

Supplier Partnerships

A study by Vivek, Sen, Savitskie, Ranganathan and Ravindran (2011) on supplier partnerships and organisational performance was based in India. According toVivek, Sen, Savitskie, Ranganathan and Ravindran (2011), SC management is an important tool for strategic management in organisations because of its influence on performance. The study narrowed down to the connections between supplier partnerships SCI on organisational performance. The results of the study indicated that improvement of supplier partnerships is the first crucial step towards improvement in organisational performance. The study made use of small scale manufacturing firms in India.

Wafula and George (2015) conducted a study on the effects of strategic supplier partnership on firm performance in the energy sector by taking the case of KPC Ltd. Both descriptive and inferential statistics were adopted for the study. The results indicated supplier partnerships has improved communication and networking between the firm and suppliers that has improved supply chain innovations in KPC. The study concluded that supplier partnership had improved communication and networking between the firm and suppliers thereby improving the performance of the company.

Operations Management

A study by Wafula (2016) on operations management practices and performance of electric utility firms in Kenya, established the performance of electric utility firms in Kenya and determined the relationship between operations management practices and performance of electric utility firms in Kenya. The type of data collected was both primary and secondary data. The primary data collection instrument for this study was a designed questionnaire. The secondary data on performance was obtained from the electric utility firms end year financial report. It was found that there is a chance of improving the activities of the companies by employees. The operation costs in the firms were also found to have reduced due to improved activity and work in the organization proving that they were efficient.

Prajogo and Goh (2005) examined the impact of operations management activities on operational

performance in service organisations. Drawing from the responses of mostly operations managers and operations directors of a sample of 190 firms based in Australia, the results suggested that the performance of a service firm is influenced significantly by the antecedents of operations scheduling, service process, and logistics capabilities. Also, through multiple regression analysis, the results found that operations scheduling and service process have a strong bearing on the firm's efficiency.

Critique of the Existing Literature

Yunus (2013) sought out to establish the effect of distribution integration and organizational performance in Indonesia. However, the study focused on firms in Indonesia, whereby their mode of operation can be different to Kenya. On the same note, Prajogo *et al.* (2005); Battistoni; Vivek *et al.* (2011) were not conducted in Kenya. Nyamoko (2013) studied the effect of SCI on performance Cheruiyot (2013) studied the impact of SCI on SC performance. The study focused on manufacturing firms while the current one will focus on food and beverages firms.

The studies by Lawson *et al.* (2009) focused on strategic purchasing, supply management practices and buyer performance; Danese and Romano (2011) studies SCI and efficiency performance; Kaufmann *et al.* (2015) focused on the connectionof purchasing decision-making speed and performance. These studies failed to focus on supply chain integration on performance. On the same note, Wafula *et al*. (2015) examined effects of strategic supplier partnership on firm performance in the energy sector by taking the case of Kenya Pipeline Company Limited. The study only considered strategic supplier partnership and not all the four independent variables of this study.

METHODOLOGY

This study used a descriptive research design since it allows the researcher to describe record, analyze and report conditions that exist or existed. The study targeted a population of 187 food and beverage companies in Kenya (KAM, 2017). These firms formed the unit of analysis of the study. The unit of observation was procurement managers from the food and beverage manufacturing firms. This study used both primary and secondary sources of data. The study used structured questionnaires. Structured questionnaire guided or controlled the respondents as to give the answer. The following multivariate regression model was used.

$$Y= \beta_0+ \beta_1X_1+\beta_2X_2+ \beta_3X_3+ \beta_4X_4 + \varepsilon$$

Where:

Y is the dependent variable (Performance)

X_1 is Purchasing Practices

X2 is Distribution Practices

X3 is Supplier Partnerships

X4 is Operations Management

β_0 is the regression constant or intercept,

β_1, β_2, β_3,and $\beta_4$are the unknown parameters (regression coefficients) and ε is the error term

FINDINGS AND DISCUSSIONS

Descriptive Findings of Purchasing Practices

The first objective of the study was to establish the influence of purchasing practices on performance of food and beverage manufacturing firms in Kenya. The respondents were asked to rate statements on purchasing practices on a scale of 1 to 5. The responses were indicated in Table 1.

It was established that the respondents agreed that their firms conducts consolidate spend (long term agreements) to realize volume discounts in return for increased supplier turnover (Mean = 4.29), enters into agreement with suppliers to work jointly on TC reduction initiatives (Mean = 4.62), initiates VE

processes with suppliers to achieve savings from design optimizations (Mean = 3.56) and buys directly from material suppliers instead of letting contractors buy (Mean = 4.25). The findings also indicated that the respondents agreed that their firms promises contracted suppliers low costs of delivering their contract work on site (Mean = 3.86) and chooses suppliers that deliver high quality and initiates joint quality management to avoid later quality costs (Mean = 3.61).

On average, it was agreed that various purchasing practices such as spend consolidation, joint total cost reduction and joint value engineering are practised by food and beverages firms licensed under Kenya Association of Manufacturers (Average Mean = 4.03). The findings are consistent with Lawson *et al.* (2009) who established the importance of purchasing practices to all manufacturing firms in order to enhance their performance.

Table 1: Descriptive Findings of Purchasing Practices

Statement	Mean	Standard Deviation
The firm conducts consolidate spend (long term agreements) to realize volume discounts in return for increased supplier turnover	4.29	1.12
The firm enters into agreement with suppliers to work jointly on TC reduction initiatives	4.62	0.95
The firm initiates VE processes with suppliers to achieve savings from design optimizations	3.56	1.17
The firm buys directly from material suppliers instead of letting contractors buy	4.25	1.09
The firm promises contracted suppliers low costs of delivering their contract work on site	3.86	1.28
The firm chooses suppliers that deliver high quality and initiates joint quality management to avoid later quality costs	3.61	1.19
Average	**4.03**	**1.13**

Descriptive Findings of Distribution Practices

The second objective of the study was to determine the effect of distribution practices on performance of food and beverage manufacturing firms in Kenya. The respondents were asked to rate statements on distribution practices on a scale of 1 to 5. The responses are indicated in Table 2. It was determined that the respondents agreed that their firms are involved in collaborative transportation of products (Mean = 3.54), have interactive information systems to keep track of the flow of products (Mean = 4.11), outsource transportation services (Mean = 3.51) and practice documentation and record-keeping (Mean = 3.60).

On average, the findings indicated that distribution practices such as transport consolidation, joint information systems and joint storage systems are practised by the food and beverages firms licensed under Kenya Association of Manufacturers (Average Mean = 3.69). The findings are consistent with that of Yunus (2013) who sought out to establish the effect of distribution integration and revealed that distribution practices such as the use of ERP tools, functional coordination, demand planning and timely delivery was essential in enhancing performance.

Table 2: Descriptive Findings of Distribution Practices

Statement	Mean	Standard Deviation
The firm is involved in collaborative transportation of products	3.54	1.23
The firm has interactive information systems to keep track of the flow of products	4.11	0.89
The firm outsources transportation services	3.51	0.50
The firm practices documentation and record-keeping	3.60	0.49
Average	**3.69**	**0.78**

Descriptive Findings of Supplier Partnerships

The third objective of the study was to examine the influence of supplier partnerships on performance of food and beverage manufacturing firms in Kenya. The respondents were asked to rate statements on supplier partnerships on a scale of 1 to 5. The responses are indicated in Table 3. The findings indicated that the respondents agreed that their firms consider quality as the main criterion in selecting suppliers (Mean = 3.81), help suppliers to improve their product quality (Mean = 3.65), include key suppliers in our planning and goal setting activities (Mean = 3.81) and that there are various continuous improvement programs that include key suppliers(Mean = 3.61).The respondents were however neutral on the statement that their firms regularly solve problems jointly with suppliers of various materials (Mean = 3.19).However, on average, there was agreement that supplier partnerships exist and practices such as supplier improvement programs and joint planning and goal setting activities exist among the food and beverages firms licensed under Kenya Association of Manufacturers (Average Mean = 3.61). The findings are consistent with the findings of a study by Vivek, Sen, Savitskie, Ranganathan and Ravindran (2011) who indicated that manufacturing firms are considering supplier partnerships as the first crucial step towards improvement in organisational performance.

Table 3: Descriptive Findings of Supplier Partnerships

Statement	Mean	Standard Deviation
The firm considers quality as the main criterion in selecting suppliers	3.81	1.34
The firm regularly solves problems jointly with suppliers of various materials	3.19	1.35
The firm has helped suppliers to improve their product quality	3.65	1.14
There are various continuous improvement programs that include key suppliers	3.61	1.35
The firm includes include key suppliers in our planning and goal setting activities	3.81	1.34
Average	**3.61**	**1.30**

Descriptive Findings of Supplier Partnerships

The fourth objective of the study was to assess the influence of operations management on performance of food and beverage manufacturing firms in Kenya. The respondents were asked to rate statements on supplier partnerships on a scale of 1 to 5. The responses are indicated in Table 4. The findings indicated that the respondents agreed that their firms

are involved in collaborative quality management (Mean = 4.62), conducts inventory management (Mean = 4.79), are involved in collaborative risk management with other firms (Mean = 4.56), are involved in supply chain management (Mean = 4.01) as well as collaborative innovations (Mean = 4.05).

On average, the findings imply that the food and beverages firms licensed under KAM practice operations management practices like quality management, inventory management and risk management (Average Mean = 4.41). The findings agree with that of Wafula (2016) who revealed that operations management was essential for manufacturing firms and reduces operational costs due to improved activity and work in the organization.

Table 4: Descriptive Findings of Operations Management

Statement	Mean	Standard Deviation
The firm is involved in collaborative quality management	4.62	0.79
The firm conducts inventory management	4.79	0.41
The firm is involved in collaborative risk management with other firms	4.56	0.50
The firm is involved in supply chain management	4.01	0.79
The firm is involved in collaborative innovations	4.05	0.82
Average	**4.41**	**0.66**

Performance of Food and Beverages Firms

The study also established the respondent's opinion on the performance of food and beverages manufacturing firms licensed under KAM. The respondents were asked to rate statements about the performance of their firms on a scale of 1 to 5 and the responses are indicated in Table 5. The findings in Table 5 revealed that the respondents agreed that there has been an improvement in their firm's market share (Mean = 3.61), returns on investment (Mean = 3.81), sales (Mean = 4.25), reduction in debtors days (Mean = 3.91) and overall competitive position (Mean = 4.41). On average, there was an agreement on improvement of the performance of the food and beverages firms licensed under KAM (Average Mean = 3.91).

Table 5: Performance of Food and Beverages Firms

Statement	Mean	Standard Deviation
Market Share has improved	3.61	1.35
Return on Investment has improved	3.81	1.34
Growth of Sales	4.25	1.09
Profit Margin on Sales has improved	3.45	1.19
Debtor's days have reduced	3.91	0.89
Overall competitive position has improved	4.41	0.50
Average	**3.91**	**1.06**

The study also established the sales revenue from the firms operating under the food and beverages manufacturing sub sector. Based on the statistics from the Wesgro Group (2017), the exports which reflects the revenue / sales from the food and beverages manufacturing firms has been increasing from a value of 19.6 Billion in the year 2013 to 38 Billion in the year 2017 reflecting an increasing trend.

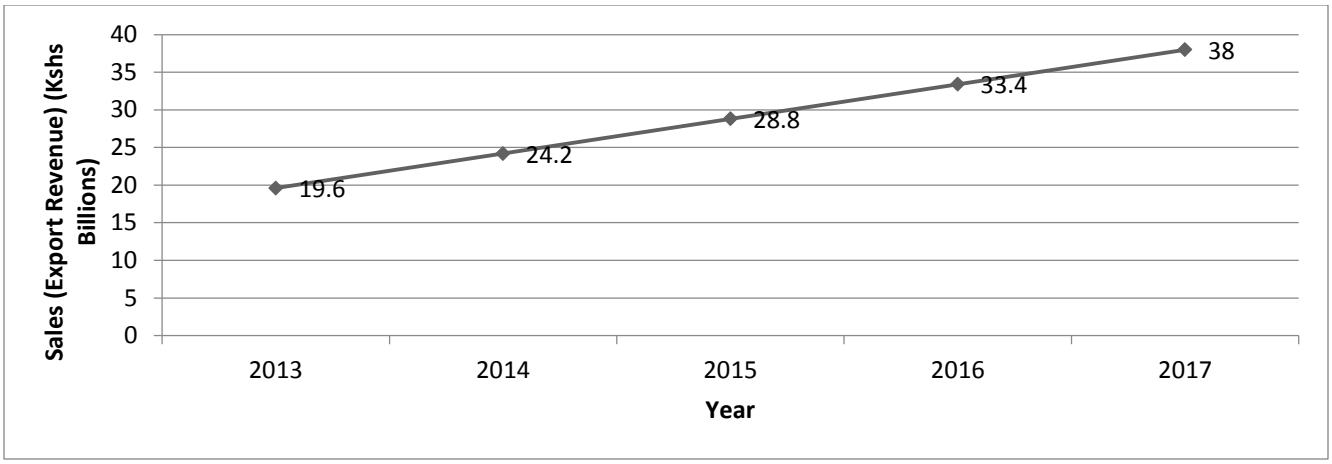

Figure 2: Sales Revenue

Table 6: Correlation Analysis

		Purchasing Practices	Distribution Practices	Supplier partnerships	Operations management	Performance
Purchasing Practices	Pearson Correlation	1				
	Sig. (2-tailed)					
Distribution Practices	Pearson Correlation	.335*	1			
	Sig. (2-tailed)	0.002				
Supplier partnerships	Pearson Correlation	.458*	.591*	1		
	Sig. (2-tailed)	0.000	0.000			
Operations management	Pearson Correlation	.214*	.262*	.486*	1	
	Sig. (2-tailed)	0.049	0.015	0.000		
Performance	Pearson Correlation	.508*	.648*	.888*	.511*	1
	Sig. (2-tailed)	0.000	0.000	0.000	0.000	
	N	85	85	85	85	85

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

Table 7: Model Summary

R	R Square	Adjusted R Square	Std. Error of the Estimate
.912	0.831	0.823	0.2976

Predictors: (Constant), Operations Management, Purchasing Practices, Distribution Practices, Supplier Partnerships

Table 8: ANOVA

	Sum of Squares	df	Mean Square	F	Sig.
Regression	34.824	4	8.706	98.323	.000

Residual	7.084	80	0.089
Total	41.907	84	
Dependent Variable: Performance			
Predictors: (Constant), Operations Management, Purchasing Practices, Distribution Practices, Supplier Partnerships			

Table 9: Model Coefficients

	Unstandardized Coefficients		**Standardized Coefficients**		
	B	**Std. Error**	**Beta**	**t**	**Sig.**
(Constant)	0.377	0.427		0.882	0.380
Purchasing Practices	0.115	0.052	0.115	2.209	0.030
Distribution Practices	0.300	0.094	0.183	3.190	0.002
Supplier Partnerships	0.541	0.053	0.674	10.152	0.000
Operations Management	0.176	0.084	0.110	2.097	0.039
Dependent Variable: Performance					

Revised Regression Equation

Performance of Food and Beverages Firms Licensed under KAM = 0.377 + 0.541 (Supplier Partnerships) + 0.300 (Distribution Practices) + 0.115 (Purchasing Practices) + 0.176 (Operations Management)

The revised regression equation indicates that all the integrated supply chain practices have a positive and significant influence on performance of Food and Beverages Firms Licensed under KAM. However, the most significant variable was supplier partnerships (t = 10.152), then distribution practices (t = 3.190) followed by purchasing practices (t = 2.209) and lastly operations management (t = 2.097).

CONCLUSIONS

The findings led to the conclusion that an increase in purchasing practices such as spends consolidation, joint total cost reduction and joint value engineering leads to an increase in performance of food and beverages manufacturing firms licensed under Kenya Association of Manufacturers. The study also concluded that an increase in distribution practices such as transport consolidation, joint information systems and joint storage systems leads to an increase in performance of food and beverages manufacturing firms licensed under Kenya Association of Manufacturers.

The study findings also led to the conclusion that an increase in supplier partnerships through supplier improvement programs and joint planning and goal setting activities leads to an increase in performance of food and beverages manufacturing firms licensed under Kenya Association of Manufacturers. Lastly, the study concluded that an increase in operations management practices like quality management, inventory management and risk management leads to an increase in performance of food and beverages manufacturing firms licensed under Kenya Association of Manufacturers.

RECOMMENDATIONS

The study recommended that since purchasing practices have a positive and significant influence on performance of Food and Beverages manufacturing firms, there is a need for the manufacturing firms to increase adoption of purchasing practices such as spends consolidation, joint total cost reduction and joint value engineering. The study also recommends that since distribution practices have a positive and significant influence on performance of Food and

Beverages manufacturing firms, there is a need for the manufacturing firms to increase adoption of distribution practices such as transport consolidation, joint information systems and joint storage systems.

The study also recommended that since supplier partnerships have a positive and significant influence on performance of Food and Beverages manufacturing firms, there is a need for the manufacturing firms to increase adoption of supplier partnerships through supplier improvement programs and joint planning and goal setting activities. Another recommendation by the study is that since operations management have a positive and significant influence on performance of Food and Beverages manufacturing firms, there is a need for manufacturing firms to increase adoption of operations management practices like quality management, inventory management and risk management.

Areas for Further Study

The study focused on the influence of integrated supply chain system on performance of food and beverage manufacturing firms in Kenya. Even though the study filled knowledge gaps in the previous studies, a number of knowledge gaps arose which can be filled by future studies on the topic. The study focused on food and beverages manufacturing firms licensed under KAM. This creates a contextual knowledge gap since the firms licensed under KAM are under 14 sub sectors. For comparison purposes, other studies can focus on the other sub sectors. The study findings also showed that operations management, purchasing practices, distribution practices and supplier partnerships explain up to 83.1% of the variation in performance of food and beverage firms licensed under KAM indicating that the remaining 16.9% of the variation in performance of food and beverage firms licensed under KAM is explained by other factors other than integrated supply chain practices. There is hence a need for future studies to establish these other factors not investigated in this study.

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