

Effect of Integrated Supply Chain Practices on the Performance of Fast-Moving Consumer Goods Firms in Kenya: A Case Study of Unga Limited

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ABSTRACT

The most successful manufacturers have strategically linked their internal processes to external suppliers and customers in unique supply chains. Manufacturers now recognize the potential of supply chain integration to improve their performance but the lack of deep understanding of supply chain integration to achieve strategic importance is a major challenge to supply chain managers making it hard to be implemented with most confusing supply chain integration with partnerships and collaborations of business partners. Studies on integrated supply chain and its impact on an organization's overall performance are still unsettled and the area has not been extensively examined. To bridge this research gap, this study examined the effect of integrated supply chain practices on the performance of Fast-Moving Consumer Goods firms in Kenya. The study was guided by the following objectives: to establish the effect of customer integration on the performance of fast-moving consumer goods firms in Kenya, to determine the effect of internal integration on the performance of fast-moving consumer goods firms in Kenya and to examine the effect of supplier integration on the performance of fast-moving consumer goods firms in Kenya. The study was anchored on the following theories: transaction cost economies theory, contingency theory, and the resource-based view theory. The study adopted a descriptive research design, and the target population was 261 employees from 8 departments. The sample size was 158 respondents who were selected through stratified and simple random sampling technique. The study used questionnaires to collect primary data. Data analysis was done using the SPSS software v.25. A multivariate regression model was used to determine the relative importance of each variable of the study and correlation analysis was carried out to find the relationships between the variables under the study. The study concluded that integrated supply chain practices had a positive and significant effect on the performance of fast-moving consumer goods firms in Kenya at Unga limited. The study recommended that FMCG firms enhance the utilization of supplier integration practices to improve organizational performance. Further, the study recommends that internal integration and customer integration be strategically used as policy tools for coordination, production planning and scheduling, customer order management, and demand planning as this will enhance the overall organizational performance.

Key Words: Customer Integration, Internal Integration, Supplier Integration and Performance.

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1.0 Introduction

1.1 Background of the study

As today's markets and global networks become increasingly volatile and chaotic, Fast-Moving Consumer Goods companies are under pressure to come up with strategies to improve their supply chain performance (Wilding, 2018). According to Mentzer (2014), competition is no longer between independent firms but between supply chains where the organization with superior supply chain capabilities is the one to thrive and make profits. Therefore, in this era of supply chain competition developing close and strategic relationships between all the partners in the chain is important through working together, solving challenges jointly and planning the future together (Mentzer, 2014). Koçoğlu et al. (2019) defines supply chain integration as strategic collaboration and coordination with stakeholders in the intra and interorganizational operations to achieve timely flow of products, services, information, money, and decisions to deliver value to the final customer with low costs and high speed. From a Sub-Saharan Africa perspective, there is limited research into supply chain integration with much research conducted at South Africa. A recent study by Echendu & Kruger (2016) examined the supply chain integration processes in a South Africa conveyancing industry and concluded that integrated information technology across supply chain partners optimizes process efficiency in the conveyancing Supply chain. Very little has been done on the perspective of developing economies, Kenya included. Information sharing is at the center of supply chain integration. However most managers consider it risky because of the likelihood of information leakage to competitors, among other concerns (Myers & Cheung, 2020). This was reaffirmed by Kembro & Naslund (2014) who noted that such a scenario makes many managers to remain reluctant to share strategic information with collaborating partners.

According to Kimitei *et al.* (2015), sharing information with the supply chain partners affects performance of the firm by shifting power to competitors. A study by Kemunto (2014) states that in Kenya there are about 226 Multinational Corporations according to Kenya Bureau of Statistics and 90% of them have integrated their supply chain. Stock, Greis & Kasarda (2021) reiterates that a Fast-Moving Consumer Goods company's supply chain comprises geographically dispersed facilities where raw materials, intermediate products, or finished products are acquired, transformed, stored, or sold, and transportation links connecting facilities along which products flow. The facilities may be operated by the company, or they may be operated by vendors, customers, third-party providers, or other firms with which the company has business arrangements (Stock, Greis & Kasarda, 2021). Further, Stock, Greis & Kasarda (2021) notes that this dispersion when not handled well could cause a major breakdown in the whole chain. Supplier integration is something that organizations cannot ignore to ensure customer satisfaction effectively and efficiently (Stevens, 2019). According to Gunasekaran, Patel & McGaughey (2014), an Integrated Supply Chain is seamless and collaborates relationships with unified data and business processes and its aim is to coordinate and harmonize all elements of a supply chain from raw material to finished product while achieving higher levels of overall performance as well as cutting costs. Organizations could drastically improve their performance through the integration of their supply chains however despite this most organizations have a challenge in integrating all its stakeholders (Gunasekaran, Patel & McGaughey, 2014). In order to achieve an integrated supply chain, the organization must pull each of their partners from their independent silos and develop a cohesive team with shared set of goals and objectives (Power, 2015). Further, Power (2015) states that all the stakeholders within the supply chain must agree to work as a team and have team goals, strive to continuously improve, and stay away ahead of competitors understanding failure of one is failure to all.



1.1.2 Fast Moving Consumer Goods in Kenya

The fast-moving consumer goods (FMCG) industry includes products that are directly consumable, packed, branded, in great demand among low- to middle-class consumers, and above all, highly price sensitive (Ullah & Prince, 2012). Fast Moving Consumer Goods (FMCG) are products that sell quickly without incurring a substantial cost, according to Wasamba (2018). FMCG was further described by Mandrinos (2014) as commonly bought necessary or non-essential commodities. However, Elen, Erdogan & Taymaz (2015) describe FMCG as small-scale consumer goods purchased in supermarkets, producer stalls, or grocery stores. According to Mont (2020), the fact that FMCG products sell in big volumes even though the revenues from their sales are small leads to high profits being created over the course of those products' lifetimes. There is a wide range of products that are classified as FMCG, which include soaps, shaving products, toiletries, detergents, soft drinks, processed foods, consumables, glassware, batteries, cosmetics, and plastic goods among others (Wasonga, 2012).

Nyaga (2014) states that FMCG goods have an extremely short shelf life. The strong consumer demand for FMCG products and the fact that most of these goods are perishable and spoil quickly are both factors contributing to their short shelf lives. He further notes that FMCG also has an extensive distribution network. According to Lummus, Krumwiede & Vokurka (2021), the distribution chain for FMCG is the interdependent collection of processes and related resources. They include manufacturers, warehouses, suppliers, logistics service providers, wholesalers and distributors, and all the other parties within the supply chain network. Wasonga (2012) reiterates that many FMCG companies including Unga limited are facing numerous challenges as a result of increased technological advancements, stiff competition, and above all, complex logistics management brought about by the vast distribution network. All these challenges have impacted negatively the performance of the FMCG firms. For instance, Unga Group Plc issued a profit warning for the year ending June 2022, following a dip in revenues in the first six months ending December 31, 2021 (Editor, 2022).

1.1.2 Unga Group Plc

Unga Limited was established in the year 1908 with the core objective of meeting the expanding milling demands of the wheat industry in the Rift Valley. It is a Kenyan based holding company involved with a range of human nutrition, animal nutrition and animal health products manufacturing (Walusaga, 2017). In the year 2000, Unga Group Plc entered a strategic partnership with Seaboard Corporation, a US based company to form Unga Holdings Limited where Unga Group Plc has a share of 65% while Seaboard Corporation 35% (Unga Group Plc, 2022). Over time, the company has established major production facilities in Nairobi, Nakuru, Eldoret, and Kampala. With established mills in Nairobi and Eldoret, Unga Limited deals in products such as the milling of wheat and maize, production of commercial porridge and animal feeds. According to Styles & Cochran (2017), the company runs five mills in Kenya and 1 mill in Uganda currently. According to Gichohi (2018), 90% of the firm's revenues emanates from the Kenyan market alone. Milling companies in Kenya, inclusive of Unga limited have faced numerous challenges including the inability of the companies to modernize their supply chain so that technology can be harnessed together with other organizational capabilities to ensure improved performance (Thandi, 2015). Unga limited has been plagued with aggressive competition resulting to further challenges like inflated cost of operation which has led to reduction in its interim revenue from Ksh 9.7 billion (US\$85m) registered the previous corresponding period to Ksh 8.8 billion (US\$77.3m) in 2021. According to Unga Group Plc (2022), this can further be attributed to surge in cost of key raw

materials attributable to global shortages and other supply chain related problems. To solve these challenges, strategic solutions in the area of supply chain integration are needed. Therefore, this study seeks to establish the integrated supply chain practices that Unga limited can employ and how they can affect its performance.

1.2 Statement of the Problem

Globally, organizations are looking for opportunities to grow and gain a competitive advantage over their competitors. Competition is no longer between independent firms but between their supply chains and therefore, the organization with superior supply chain capabilities is the one to thrive and make profits. Lotfi et al. (2013) notes that the central aim of an integrated supply chain is to have the right products in the right quantities, at the right place at the right moment at minimal cost and it is translated into the interrelated issues of customer satisfaction, inventory management, flexibility, and overall corporate performance. Supply chains are very complex and dynamic and world-class organizations have realized that their success is pegged on the strategic integration of their supply chains and breaking all the barriers between all the partners in the supply chain (Abdifatah, 2012). Though supply chain integration is not a new perspective, its implementation has been a big challenge. Studies on integrated supply chains and their impact on an organization's overall performance are still unsettled and the area has not been extensively examined. According to Leuschner, Rogers & Charvet (2013), a lack of deep understanding of supply chain integration to achieve strategic importance is a major challenge to supply chain managers making it hard to be implemented.

Previous studies done on the supply chain by past researchers show gaps in the field that need to be addressed. Awino's (2017) study on performance measurement of supply chain linkages of competencies, strategy, and capabilities within organizations as abundant, clearly shows an opportunity for further research, as it focused mostly on how the attributes affect performance in large manufacturing firms in Kenya and supply chain best practices and do not talk of integration. A study by Malik (2016) on innovating for supply chain integration with construction focused majorly on innovative thinking, in procurement processes for supply chain integration as opposed to customers, internal, and supplier integration. In order to bridge this research gap, this study examined the effect of integrated supply chain practices on the performance of fast-moving consumer goods firms in Kenya, a case study of Unga Group Plc.

1.3 Objectives of the Study

The general objective of the study was to establish the effect of integrated supply chain practices on the performance of fast-moving consumer goods firms in Kenya; A case study of Unga Group Plc.

The specific objectives of this study were to;

- i. Establish the effect of customer integration on the performance of fast-moving consumer goods firms in Kenya, a case study of Unga Group Plc.
- ii. Determine the effect of internal integration on the performance of fast-moving consumer goods firms in Kenya, a case study of Unga Group Plc.
- iii. Examine the effect of supplier integration on the performance of fast-moving consumer goods firms in Kenya, a case study of Unga Group Plc.
- iv. Establish the combined effect of customer integration, internal integration and supplier integration on the performance of fast-moving consumer goods firms in Kenya, a case

study of Unga Group Plc.

2.0 Literature Review

2.1 Theoretical Framework

2.1.1 Contingency Theory

This theory was advanced by an Austrian Psychologist Fred Edward Fielder in 1964. The theory emphasizes on task motivation and relationship motivation. Task motivation refers to accomplishments and Relationship motivation refers to interpersonal relationships. The theory argues that the optimal course of action is contingent (dependent) upon the internal and external situation. This theory is ideal to this study because to achieve an integrated supply chain the organization must pull each of their partners from their independent silos and develop a cohesive team with shared set of goals and objectives. All the stakeholders within the supply chain must agree to work as a team and have team goals, strive to continuously improve, and stay away ahead of competitors understanding failure of one is the failure of all.

2.1.2 Transaction Cost Economies Theory

Transaction cost theory was developed by Williamson in 1979 and his argument was that the optimum organizational structure is one that achieves economic efficiency by minimizing the costs of exchange. The theory suggests that each type of transaction produces coordination costs of monitoring, controlling, and managing transactions. All flows of information, products and funds generate costs within the supply chain. These costs may include production cost, transportation cost, inventory carrying cost, internal material handling cost and information sharing cost. Production cost is the largest of all in most of the industries, followed by transportation and inventory costs. Supply chain management is a set of approaches utilized to efficiently integrate suppliers, manufacturers, warehouses, and stores, so that each merchandise is produced and distributed in the right quantities, to the right locations, and at the right time, to minimize system-wide cost while satisfying service level requirements. To reduce the overall cost, effective supply chain strategies must consider the interactions of different processes in the supply chain. Thus, cost is the primary determinant of such a decision.

2.1.3 Resource Based View Theory

Resource Based view theory was developed by Barney in 1991 and he listed four attributes of resources that can give rise to a firm's competitive advantage: value, rarity, imperfect imitability and lack. This theory explains how a company uses its firm-specific resources and capabilities, which are based on the internal strengths and weaknesses of the company, to gain sustained competitive advantage. By integrating with suppliers and customers, the organization creates unique skills, and joint capabilities that are not easily replicated. This leads to improved product quality as there is faster identification and communication of challenges, joint problem solving and better understanding of capabilities of the supply chain partners. Joint idea generation and evaluation with both suppliers and customers can lead to improved product designs which also impacts on product quality (Schoenherr & Swink, 2017).

2.2 Empirical Review

Hosseini, Azizi & Sheikhi (2012) carried out a study on the effect of supply chain integration on competitive capability: an empirical analysis of Iranian food industry. The study used descriptive research design and confirmatory factor analysis used as a testing measurement model. The study's



target population was 275 heads and included chief executive officers, chairman, technical and quality managers, business administrators, and the factory managers with at least five years of experience in that position of the company. Questionnaires were used in the study to collect primary data. The study found out that supply chain integration has direct positive influence on competitive capability. However, study by Hosseini, Azizi & Sheikhi (2012) was done in another country and therefore may not be applied in Kenya. A local study is required. Hooshang et al. (2014) conducted a study on the impact of supply chain integration on the financial performance of Swedish manufacturing firms. A survey design was employed in the study. The target population of the study was all the manufacturing firms in Sweden while the respondents of the study were the top managers. According to the findings of the study, supply chain integration at any level is beneficial to the financial well-being of the firm. The study concluded that those firms with total supply chain integration reported the highest level of financial performance and therefore a positive correlation exists between supply chain integration and organizational performance. However, the study by Hooshang et al. (2014) has a different scope with the current study. The study was conducted in Sweden and therefore may not be effectively generalized in Kenya. Therefore, a country specific study is required to examine the effect of integrated supply chain practices on the performance of FMCGs firms in Kenya.

Vermeulen, Niemann & Kotzé (2016) carried out a study on Supply chain integration: a qualitative exploration of perspectives from plastic manufacturers in Gauteng in South Africa. The study had been necessitated by the fact that it was uncertain how plastic manufacturers in Gauteng perceived supply chain integration efforts between themselves and their suppliers. The target population of this study was 10 leading plastic manufacturers in Gauteng and was conducted over a period of 2 months. Semi-structured interviews were conducted in order to collect primary data. The study revealed that commitment and trust were the antecedents of supplier integration and closer collaboration, while customer price pressure and limited available resources served as motivating factors for integration efforts. The study recommended that organizations must revisit integration efforts when new markets are penetrated and top management support must be revisited using a strategic framework. The study by Vermeulen, Niemann & Kotzé (2016) was conducted in a different scope (country) and therefore may not be effectively applied in Kenya due to country specific differences. A local study is therefore needed to address the issues raised. This shall be investigated in the current study.

2.3 Performance of Manufacturing Firms.

The most successful manufacturers are those that have carefully linked their internal processes to external suppliers and customers in unique supply chains (Al-Tit, 2017). In today 's dynamic era, e-business and supply chain are integrated and play a vital role towards an organization 's competitive advantage (Al-Tit, 2017). Current studies argue that supply chain process integration enhances firm performance through the development of necessary supply chain capabilities. In today 's intense competitive environment, the ability to offer innovative services and processes becomes increasingly important. According to Kafetzopoulos, Psomas & Gotzamani (2015), the biggest challenge facing manufacturing firms is balancing demand and supply to satisfy customer 's needs. Manufacturing organizations orientation towards customer satisfaction has brought the realization of potential benefits and the importance of strategic and cooperative buyer-supplier relationships (Kafetzopoulos, Psomas & Gotzamani, 2015). Relevant literature shows that the efficiency and effectiveness of the supply chain system are crucial indicators in the measurement of an organizational performance. Kafetzopoulos, Psomas & Gotzamani (2015) notes that cost

containment and reliability of supply chain performance are two well-established indicators of performance constructs. This study will use market performance and financial performance indicators to measure the overall performance. Most argue that financial Performance should be the main concept of company performance because the primary goal of an organization is to make profits for shareholders.

3.0 Research Methodology

Descriptive research design was adopted in this study. Descriptive research design is a method where information is collected through conducting interviews and administration of questionnaires and its focus is to take the views of the respondents. The relevant information is captured by asking similar set of questions to many people through telephone, mail, or face to face to achieve the set objective. The descriptive design was applied as it collects accurate data on the phenomenon under study.

According to <https://unga-group.com/>, there are 261 employees in the company. Therefore, in this study the target population comprised of all the 261 employees of the Unga Group Plc across the Purchasing & Supply Chain Management, Investments & Production, Sales and Marketing, IT & Technical, Finance & Accounting, Human Resource Management, Risk & Audit and Customer service departments. Unga Group Public Limited Company was chosen for a case study in this research because, as one of the leading FMCG companies in the country, the company has well-established supply chain practices that presented an opportunity for thorough analysis. With its significant market presence and wide customer base, studying Unga Group's supply chain practices such as customer integration, internal integration and supplier provided valuable insights of the study leading to comprehensive conclusions and generalization of the research findings. First, this study employed a stratified sampling technique. Since this category of sampling technique was done from a heterogeneous population, the population of the study was stratified into strata (departments). Sample items were then selected from each stratum by using a simple random sampling procedure where each employee of the organization had an equal probability of being chosen.

This study employed Slovin's formula (1960) to identify the sample size. By applying the formula, a sample size of 158 respondents was studied using 5% margin of error and 95% confidence level. This study administered primary data collected from the respondents using a questionnaire with closed ended questions. The closed ended questions aided in providing uniform responses for easier data analysis (Reja et al., 2010). This method was used because of the high number of respondents, its cost effective and time saving. Respondents take a short period of time to fill the questionnaire and its free from bias. The use of questionnaires is meant to ensure validity and reliability of the collected data. According to Kothari (2004), a pilot test is the first phase in data collection of the research process. It was conducted to ascertain those various errors that may arise from improper construction of the questionnaire and question misinterpretation by the respondents, any difficulties in answering various questions and ambiguous words are omitted. The core objective of pilot testing is to detect possible problems before they turn out to be costly mistakes. Further, it offers an insight into the possible actual time that will be required to conduct the field work. Bobbie (2007) noted that a pilot study is carried out when just a few people are issued with a questionnaire with the aim of pre-testing the questions. A pilot testing was conducted before the actual research is carried out. The intention was to test the research instrument's validity. A 1% sample obtained from the population is deemed adequate for statistical

test of research instruments (Kothari, 2004). In this study, the research instrument was pretested using 10 employees from Unga Group Plc to ascertain that the right information is found in accordance with the study objectives. The employees who participated in the pilot study were not part of the final study respondents.

In this study, university supervisors who have enormous expertise in the research field of research aided in checking the validity of the data collection instruments. To be reliable, each data collection instrument should be able to measure consistently the factors for which they were initially intended to measure (Greener, 2003). In this study, reliability was tested using the Cronbach's alpha. It measures the internal consistency by examining if a particular item measures the same construct. An Alpha of above 0.7 is deemed acceptable in measuring reliability (George & Mallery, 2003). Cronbach's Alpha for each objective of the study will be established to identify if each objective will give forth consistent results should similar research be conducted later. Primary data was used to provide information for analysis. Questionnaires were administered to Unga Group Plc employees to get firsthand data. The collected primary data was coded, cleaned, and tabulated to establish existing statistical relationships. Descriptive statistics were employed to analyze the quantitative data and presented using charts and tables. This was achieved using means, modes, frequency distributions, standard deviations, and percentages. Descriptive analysis of this research was done and presented through percentages, means, frequency tables and standard deviations. The relationship between study variables was established using inferential statistics. ANOVA, F-test, and T-test were used for these tests. The least square regression analysis was incorporated, and interpretation made to identify the effect that the independent variables have on the study's dependent variable. Quantitative data from the study was coded and then entered into SPSS version 25 and analysis made through the use of descriptive statistics. Inferential statistics was applied to determine the effect of supply chain integration practices on the performance of FMCG firms in Kenya.

Karl Pearson's correlation coefficient was used in this study as a measure of linear correlation. This measure is denoted by (r) and usually ranges between -1 and +1. A value of 0 indicates the absence of linear relationship. The correlation coefficient squared (coefficient of determination) which is denoted by R^2 was used to measure the extent of variation exhibited in the dependent variable as explained by the study's independent variables. The Null hypothesis (H_0 1- H_0 4) for 2-tailed test was tested at 0.05 level of significance using T test statistics. The decision criteria for this study were that if the value calculated in each of the research hypothesis is bigger than the critical value (table value) that implies existence of a positive significance relationship, then null hypothesis (H_0) was not accepted. In contrary, the null hypothesis (H_0) was accepted if the value calculated is less than the critical value as it implies that a non-significant (negative) relationship exists. Ultimately, report writing was done using Microsoft Word format.

4.0 Data Analysis Results

4.1 Results for Karl Pearson Correlation

Correlation analysis was conducted to gauge the relationship between the study variables. Martens *et al.* (2017) argued that Karl Pearson correlation coefficient is the mostly adopted method in measuring the relationship between study variables and it assists the researcher in determining the direction and relationship between variables. Table 4.11 shows the Pearson correlation for the relationship between customer integration, internal integration, supplier integration and performance.



Table 1 Pearson Correlation Matrix

		Performance	Customer Integration	Internal Integration	Supplier Integration
Customer Integration	Pearson Correlation	.741**	1		
	Sig. (2-tailed)	0.000			
	N	139	139		
Internal Integration	Pearson Correlation	.638**	.056**	1	
	Sig. (2-tailed)	0.000	0.000		
	N	139	139	139	139
Supplier Integration	Pearson Correlation	.369**	.016*	.042*	1
	Sig. (2-tailed)	0.000	0.047	0.015	
	N	139	139	139	139

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

Source: Research data (2022)

From the findings, a positive correlation is depicted between each of the integrated supply chain practices and performance. The strongest correlation was obtained between customer integration and performance ($r = 0.741$) while the weakest relationship was between supplier integration and performance ($r = 0.369$). Internal Integration and performance had a positive correlation of 0.638.

4.2 Multiple Regression Equation

Multiple regression analysis was used to test the hypothesis and to establish the combined effect of customer integration, internal integration, and supplier integration on performance. The linear regression enabled the testing of all the study hypotheses determining the standardized coefficients and the p-values for establishing the level of significance. The tests were conducted at the significance level of $p < 0.05$, such that when the p-value was greater than the significant level, the model was considered insignificant to the study. The regression model was as follows:

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

Where;

Y represents performance

β_0 = Constant

X_1 represents customer integration

X_2 represents internal integration

X_3 represents supplier integration

$\beta_1, \beta_2,$ and β_3 represent the regression coefficients to be estimated

ε = Error term

Table 11 shows the coefficient of determination value (R) was 0.845, which shows a strong linear correlation between the variables. The R square of 0.713 indicates that customer integration, internal integration, and supplier integration collectively explain 71.3% of the variations in the



performance of fast-moving consumer goods firms in Kenya. The remaining 28.7% could be explained by other factors not undertaken by the study.

Table 2: Overall Fit Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.845 ^a	.713	.707	.266

The study conducted an analysis of variance (ANOVA) test, at 95% level of significance, to determine the significant mean difference between the dependent and independent variable. Table 2 shows the significant value for testing reliability and the fitness of the model for the relationship between customer integration, internal integration, supplier integration and performance was F-calculated (111.987) greater than F-critical (2.672) which is significant at ($p = 0.000 < 0.05$). This showed that the regression model was statistically fit in predicting the relationship between customer integration, internal integration, supplier integration, and performance of fast-moving consumer goods firms in Kenya.

Table 3: Overall ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	23.854	3	7.951	111.987	.000 ^b
	Residual	9.585	135	.071		
	Total	33.439	138			

Table 4 indicates the coefficients of regression to establish the effect of the independent variables on the dependent variable.

Table 4: Regression Coefficients

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.353	.232		2.521	.031
	Customer Integration	.492	.046	.556	10.733	.000
	Internal Integration	.336	.052	.340	6.494	.000
	Supplier Integration	.146	.030	.229	4.865	.000

a. Dependent Variable: Performance

Source: Research data (2022)

The resultant regression model was:

$$Y = 0.353 + 0.492x_1 + 0.336x_2 + 0.146x_3$$

Where: Y is Performance



x_1 = Customer Integration

x_2 = Internal Integration

x_3 = Supplier Integration

The findings indicate that a unit change in customer integration would result in a 0.492 increment in the performance of fast-moving consumer goods firms in Kenya.

The findings also indicated that customer integration had t-calculated (10.733) more than the t-critical (1.656) and p-value ($0.000 < 0.05$), indicating that customer integration significantly affected performance. The study, therefore, rejects the null hypothesis (H_01) that “There is no statistically significant relationship between customer integration and the performance of fast-moving consumer goods firms in Kenya” and concludes that there exists a significant relationship between customer integration and the performance of fast-moving consumer goods firms in Kenya”. These findings agree with Hooshang et al. (2014) and Wambua (2021) who established that firms with a strong supply chain integration reported the highest level of financial performance and that a positive correlation exists between customer integration and organizational performance.

It was also established that a unit change in internal integration would lead to a 0.336 increase in the performance of fast-moving consumer goods firms in Kenya. Internal integration had a t-calculated (6.494) more than the t-critical (1.656) and p-value ($0.000 < 0.05$), indicating that internal integration significantly affected performance. The study, therefore, rejects the null hypothesis (H_02) that “there is no statistically significant relationship between internal integration and the performance of fast-moving consumer goods firms in Kenya and concludes that there exists a significant relationship between internal integration and the performance of fast-moving consumer goods firms in Kenya. These findings are in agreement with Mbugua & Namada (2019) and Hosseini, Azizi & Sheikhi (2012) who reiterated that internal integration impacted the firm’s competitive capability and performance positively.

A unit change in supplier integration would lead to a 0.146 increase performance of fast-moving consumer goods firms in Kenya. Supplier integration had a t-calculated (4.865) more than the t-critical (1.656) and p-value ($0.000 < 0.05$), indicating that supplier integration significantly affected performance. The study, therefore, rejects the null hypothesis (H_03) that “there is no statistically significant relationship between supplier integration and the performance of fast-moving consumer goods firms in Kenya”, and concludes that there exists a significant relationship between supplier integration and the performance of fast-moving consumer goods firms in Kenya. The findings are in agreement with Mutwiri et al. (2018) and Vermeulen, Niemann & Kotzé (2016) who concluded that commitment and trust were the antecedents of supplier integration and that its strategic focus leads to enhanced organizational performance.

5.0 Conclusions and Recommendations

5.1 Conclusions

The study concludes that customer integration has a direct and significant effect on the performance of fast-moving consumer goods firms in Kenya. Further, the study concludes that customers for FMCG firms play a key role in providing essential information that helps the procurement and production processes. In addition, the study concludes that whenever a new product is being developed, the views of the customers are taken into consideration. Ultimately,



the anticipation of demand visibility of these firms is highly enhanced by the process of joint planning and forecasting between the firms and the customers hence leading to enhanced organizational performance. The study also concludes that internal integration has a positive and significant effect on the performance of fast-moving consumer goods firms in Kenya. The study revealed that internal integration has played a crucial role in improving the performance of FMCGs firms in Kenya. This is supported by the fact that various departments' activities within the firms have been integrated using an enterprise system hence enhancing efficiency and ultimately performance. Further, all the internal functions right from the inputs through the production process to sales have been integrated and connected in real-time.

The study further concludes that supplier integration has a positive and significant effect on the performance of fast-moving consumer goods firms in Kenya. Further, the study concludes that FMCGs firms engage suppliers to a very little extent in joint planning that is made to result in a quick response in the ordering process with the suppliers and that information technology is rarely used to provide essential information to their core suppliers. The study concluded that integrated supply chain practices had a positive and significant effect on the performance of fast-moving consumer goods firms in Kenya at Unga limited. Thus, there exists a significant relationship between supplier integration and the performance of fast-moving consumer goods firms in Kenya. The relationship is strong, meaning that integrated supply chain practices will significantly impact the performance of the firms.

5.2 Recommendations

The study recommends that more emphasis be put on strengthening links with suppliers since many delays and inefficiencies originate upstream and trickle down. Automatic ordering should be allowed to reduce the possibility of stock shortages that would cause production to halt hence affecting the overall firm's performance. The study recommends that FMCG firms enhance the utilization of supplier integration practices in order to improve organizational performance. This can not only be achieved through establishing strategic partnerships with the suppliers but also ensure a quick response in the supplier ordering process hence enhancing efficiency. Organizations communicate order and inventory information with their suppliers through integration, and cross-functional integration of crucial business processes enables suppliers to produce high-quality goods and services on schedule, eventually improving organizational performance. In order to improve organizational performance, the study also suggests that internal integration and customer integration be strategically used as policy tools for coordination, production planning and scheduling, customer order management, and demand planning.

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