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Effects of Supply Chain Management Practices on Organizational Performance: A Case of Food Complex Industries in Asella Town

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Abstracts: *This study pursued to investigate the effects of supply chain management practices on organizational performance in the food complex industries in Asella town. A cross-sectional survey research design was employed in this study. The population of interest comprised of all suppliers, employees, customers, retailers were involved and multistage sampling was employed and 158 sample size was used. A semi-structured questionnaire was used to collect primary data. Data was collected and analyzed using SPSS package, Descriptive statics, inferential statics and correlation to describe and analyze the extent of supply chain management practice and its effects on organizational performance. The study revealed supply chain management practice (supply chain responsiveness, strategic partnership, supply chain information, customer relationships) positively affects the organizational performance. The study also indicates that the company's strategic partnership with the suppliers was poor in improving company's organizational performance. The study recommends that the management of the food complex industries in the study area should foster and customize of managing their supply chains as this has a direct influence on organizational performance.*
Key words: *Supply chain management, organizational performance, food complex industries.*

I. Introduction

Supply chain management has become an important focus of competitive advantage and best strategies to enhance performance for business organization. The understanding and practicing of supply chain management (SCM) has become an indispensable prerequisite for staying competitive in the global rivalry and for enhancing organizational performance. The management of supply chain study emphasizes how to maximize the overall value of the firm by better using and deployment of resources across the whole of the firm. A supply chain is the set of values adding activities connecting the enterprise's suppliers and its customers. The principle of supply chain activity is receiving input from firm's suppliers – add value – deliver to customers (Levi at al (2004). Effective supply chain management is important to build and sustain organizational performance in product and services of the firms. Gunasekaran and Ngai, (2004); Sufian (2010) stated that the performance of supply chain was influenced by managing and integrating key element of information into their supply chain. According to Sufian (2010) to achieve a competitive advantage and better performance, supply chain management strategy need support the business strategy.

Sahay and Mohan (2003) proposed that Supply chain management practices be measured in four dimensions, and they are; alignment between supply chain strategies with business strategies, supply chain integration, partnerships, and information technologies. Supply chain management practices as a greed vision and goals, information sharing, risks and awards sharing, cooperation, integration of process, long term relationship, and agreed supply chain leadership. Burgess *et al* (2006) stated that supply chain management practices should include leadership, intra-organizational relationships, inter-organizational relationship, logistics, process improvement orientation, business result s and outcome and IT. Chong *et al* (2009) studied IT collaboration tools and supplier relationships in their study on supply chain practices.

As Hoover et al (2001) stated having competitive products and the right supply chain for the average customer is not enough in the current business environment. The supply chain has to be right for the customer as well. Customer relationships combining with a firm's operation and customers' operation, makes up a demand –

supply chain. Supply chain relationships play an important role in achieving the firm's goals. The coordination and integration of activities with suppliers and understanding of customer's needs results in greater benefits for companies.

According to Fraza (2000), supply chain management is directly related to relationship management, which includes suppliers and customers. Strategic supplier partnerships and customer relationships are main components in the supply chain management practices.

One of the primary challenges to successful to integration of the SC is securing a reliable internal operation capability. An organization's internal operation is the critical cornerstone in creating superior supply chain performance before embarking on external coordination. To gain competitive advantage over rapid change, internal processes must be flexible in responding to market changes. With SCM a product is pulled through the plant based on customer needs. This requires the flexibility of frequent changes to accommodate mass customization and thus improve customer responsiveness (Lambert and Cooper, 2002). So, this research conceptualizes and develops three dimensions of SCM practice (strategic supplier partnership, customer relationship, level of information sharing, and organizational performance of food complex industries.

1.2 Literature review

1.2.1 Supply Chain Management Practices of agro-processing industries

SCM practices are viewed from a variety of different perspectives and multi-dimensional concept. Li *et al* (2005) defined SCM practices as the set of activities undertaken in an organization to promote effective management of its supply chain. Kotzab and Schnedlit (1999) defined SCM practices as a special form of strategic partnership between retailers and suppliers .Tan (2002) also recommended that SCM practices include the flow of materials and information and postponement strategy and mass customization. Another concept which has gained attention and extended the supply chain management practices mentioned above is demand chain management (DCM). DCM is defined by Selen and Soliman (2002) as a " set of practices aimed at managing and coordinating the whole demand chain, starting from the end customer needs and links customer and suppliers together into a tightly integrated networks (Frohlick and westbrook,2002). In reviewing and consolidating the literature mentioned, six dimension of supply chain practices emerge, namely strategic supplier partnership, customer relationship, information sharing, Information technology, training and internal operations (Petrovic-Lazarevic, 2007, Koh *et al* 2007,Li *et al* 2005, Perry and Sohal, 2002) . Although the dimensions included in this capture the major aspects of SCM practices, they cannot be considered as complete. Other factors identified in the literature (supply chain leadership, geographical proximity and supply chain benchmarking) are not included in this research due to the length of survey, and concerns regarding the parsimony of measurement instrument (Li *et al*, 2006). A strategic supplier partnership is defined as a long – term relationship between the organization and its supplier (Li *et al*, 2005). Through strategic supplier partnerships, organizations can work closely with suppliers who can share responsibility for the success of the products (Li *et al*, 2005). Such strategic supplier partnerships should enable successful SCM. Customer relationship management (CRM) is an important component of SCM (Tan et al, 1999) and involves building and maintaining long term relationships with customers (Li *et al*, 2005). Stalk and Hout (1990) stated that maintaining a good customer relationship will enable organizations to be more responsive to customer's needs, thus creating greater customer loyalty, repeat purchase, and willingness to pay premium prices for higher quality products. Customer loyalty and customer satisfaction are the main goal of SCM. A successful sharing of useful information between the supply chain partners can result in a reduction of inventory and manufacturing cost, better understanding of customer needs and faster response to market changes (Petrovic-Lazarevic.., 2007) .The primary goal of Information Technology in the supply chain is to link the point of production seamlessly with the point of delivery or purchase. Clear communications and quick responses to those communications, are key elements of successful SCM. Organizational performance refers to how well an organization achieves its market-oriented goals as well as its financial goals. The short-term objectives of SCM are primarily to increase productivity and reduce inventory and cycle time, while long-term objectives are to increase market share and profits for all members of the supply chain. Financial metrics have served as a tool for comparing organizations and evaluating an organization's behavior over time (Lalonde 1998).

1.3 Conceptual Frameworks

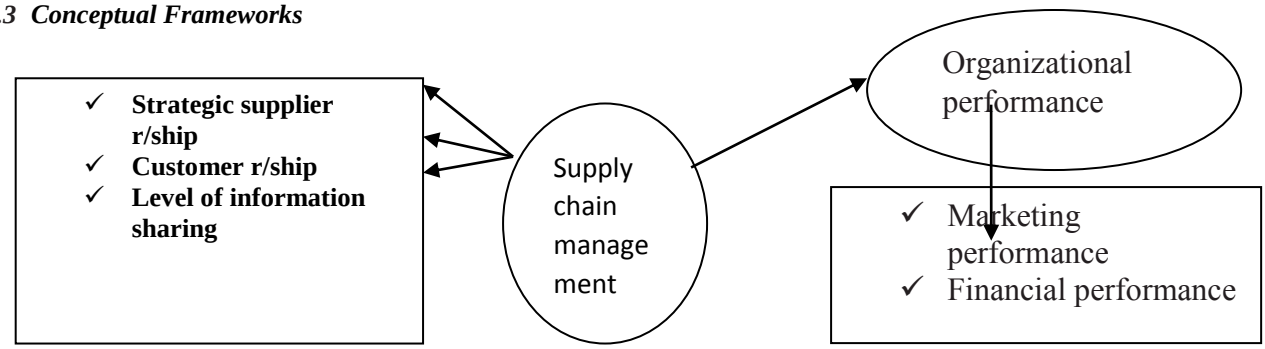

Fig1: conceptual framework from literature review

II. Objectives Of The Study

The general objective of this study was to investigate the effects of supply chain management practice on organizational performance of food complex industries.

1.4.1 Specific objectives

- To see the practices of Supply Chain Management practice of food complex industries
- To test the effects of supply chain management practice on organizational performance of the food complex industries

III. Research Design And Methods

In this research cross-sectional research method was used as the researchers wants to identify and explore the correlation among the identified variables with the firms' organizational performance. In this methodology, the researcher's poses questions to willing participants, summarized and analyzed them and finally inference is made for the population form the drawn samples (Leedy and Ormarod, 2010). In order to generate relevant data for the study, the researcher used both primary and secondary data sources. These data were collected through written questionnaire and semi-structure interview from the targeted respondents of this study.

It is not feasible to collect data for the entire statistical population, a sample, which is a representative of the population, was drawn from the registered suppliers, customers, wholesalers, retailers, and permanent employees of food complex industries. These participants was proportionally selected, ranging from related department employees to senior management. Accordingly, from the target population, this study was target to registered suppliers (54), customers (77) factory employees (92), registered distributors (15) and registered retailers (24). The researchers were used multistage sapling techniques. 1st purposive sampling to select premium suppliers and customers, 2nd strata (supplier, customer, employee and distributors/retailers) and 3rd simple random sampling techniques to undertake this study and to participate all actors equally.

Sample size was statistically drawn:

$$n = \frac{N}{1 + N(e)^2}$$

Where;

N= Size of total population ----262, n= is the desired Sample size =?

e= is the estimated standard error which is 5% for 95% confidence level (the limit of tolerable error 5%), n= $262/1+262(0.05)^2 = 158$, proportionally this was:

Table 2.1: strata

Sn.	Strata	Total size	Proportion
1	Suppliers	54	35
2	Customers	77	45
3	Employee	92	55

4	Distributor and retailers	39	23
	Total	262	158

IV. Analysis, Findings And Discussions

4.1 Descriptive Analysis

Table 4.1 Response of Respondents

	Description	Respondents
1	Sample	**158**
2	Questionnaire Distributed	**158**
3	Questionnaire Returned	**144**
4	Response rate	**91.1%**
5	Usable response	**144**

Source: Field Survey, 2019/20

Response rate is the total number of respondents who participated in the study and out of the total questionnaires distributed i.e.158, out of which 144 were participated in the survey. The percentage of response rate was 91.1%. According to Saunders et al., (2009) a response rate above 60% is good, and above 70% is very good.

Table 4.2: supply chain management practice and organizational performance

	Mean	Std. Deviation
Strategic Partnership Average	3.97	.421
Customer Relationship Average	3.69	.365
Level Of Information Sharing Average	3.77	.405
Organizational Performance	3.02	.279
Organizational Performance		
Growth Of Market Share	3.51	.418
Growth of return on investment	4.51	.502
Growth of sales volume	3.50	.502
Growth of profit margin	4.50	.502
Improved competitive advantage	3.72	.502

Source: own survey 2019/20

The results of the table 4.2 indicates that to what extent the average values of strategic partnership, customer relationship and level of information sharing affects organizational performance. From this strategic partnership highly affects organizational performance as it was shown by statically results of 3.97. Level of information sharing and customer relationship also affects organizational performance as it were shown by statically results of 3.77 and 3.69 respectively. This indicates that strategic partnership, Customer relationship and level of information sharing have affects the organizational performance of the food complex industries.

The table 4.2 reveals that organizational performance measured by marketing performance and financial performance as it was shown above the organization has high growth of return on investment as it was shown by 4.51, respondents also respond that growth of market share, growth of sales volume, growth of profit margin and improved competitive advantage as it was shown by a mean score of 3.51, 3.5, 4.5, and 3.72 respectively.
This indicates that level of supply chain management practice affects organizational performance of the organizations in terms of return on investment, sales volume, profit margin, and competitive advantage. As today's competition is moving from "among organizations" to "between supply chains", more and more organizations are increasingly adopting Supply Chain Management practice in the hope of reducing supply chain costs and securing organizational performance. The findings of this research support the view that Supply Chain Management practices can have discernible impact on organizational performance.

4.2 Correlation Analysis

Table 4.4 shows the correlation between independent variables (supplier strategic partnership, customer relationship, and level of information sharing) and dependent variables (organizational performance of the firm)

were positive. Strategic supplier partnership had a correlation of .871**, p<0.01 with organizational performance, customer relationship had a correlation of .676**, p<0.01 with organizational performance, level of information sharing average had a correlation of .540*, p<0.01 with an organizational performance. Which mean that the respondents are more likely to evaluate strategic supplier partnership, Customer relationship and level of information sharing were positively affects the organizational performance of the firm.
From this strategic partnership factors has strongest correlation with organizational performance as shown by statics results of 0.871. customer relationship factors has medium correlation with organizational performance as it was shown by statically result of 0.676 and level of information sharing has a weak correlation with organizational performance as it was shown by statics result of 0.540.

Table 4.3: The correlation between independent and dependent variables

		Organizational performance	Strategic Partnership average	customer relationship average	level of information sharing average
organizational performance	Pearson Correlation	1	.871**	.676**	.540**
	Sig. (2-tailed)		.000	.000	.000
	N	144	144	144	144
Strategic Partnership average	Pearson Correlation	.871**	1	.822**	.660**
	Sig. (2-tailed)	.000		.000	.000
	N	144	144	144	144
customer relationship average	Pearson Correlation	.676**	.822**	1	.653**
	Sig. (2-tailed)	.000	.000		.000
	N	144	144	144	144
level of information sharing average	Pearson Correlation	.540**	.660**	.653**	1
	Sig. (2-tailed)	.000	.000	.000	
	N	144	144	144	144

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

4.3 Inferential Statistics

In this study a multiple linear regression model was implemented to identify the relationship between the three independent variables (level of information sharing average, customer relationship average, Strategic supplier Partnership average) and the dependent variable which is the organizational performance of the firm. The researchers applied the statistical package for social sciences (SPSS) to code, enter and compute the measurements of the multiple regressions for the study.

Table 4.4: Modell summary and coefficients of variables

Model summary	**R**	**R square**	**Adjusted R square**	**Std. Error of the Estimate**		**Durban-Witson**
	.912	.826	.812	.1111		2.208
	Model	**Unstandardized Coefficients**		**Standardized Coefficients**	t	
Coefficients	**Variables**	**B**	**Std. Error**	**B(Beta)**		**Sig**
	Constant	1.011	0.54		19.401	000
	Strategic partnership factors (X_1)	0.672	0.023	0.087	1.315	000
	Customer relationship factors (X_2)	.532	0.021	0.975	14.824	0.000
	Level of information sharing (X_3)	0.614	0.017	0.214	-4.297	0.000

The R column represents the value of *R*, the multiple correlation coefficient. R is considered to be one measure of the quality of the prediction of the dependent variable; organizational performance. A value of 0.912, in this case, indicates a good level of prediction. The 'R square' column represents the R2 (also called the coefficient of determination), which is the proportion of variance in the dependent variable that can be explained by the independent variables (technically, it is the proportion of variation accounted for by the regression model above and beyond the mean model). In this case a value 0.826 means that the model independent variables explain 82.6 % % of the variability of the dependent variable, organizational performance while the remaining 17.4% of the variation of the dependent variable was explained by other factors which were not included in the model.
In Table 4.4 above values under B column indicates that the value of constant term and the estimated coefficients of independent variables in the multiple regression model that used as a measurement of organizational performance.

There were two hypothesis in this research study. The null-hypothesis was stated as the Supply chain management practice do not affect the organizational performance of food complex industries and it was tested at a 5% level of significance. Accordingly, the result revealed that Supply chain management practice do play a significant role in fostering the organizational performance as the null hypothesis was rejected and the alternative hypothesis which stated the Supply chain management practice do affect the organizational performance was accepted as illustrated in Table 4.4 . The unstandardized coefficients B column, indicated that the estimate of coefficients of the independent variables in the multiple regression equation as indicated below in the following form.

$Y= \alpha + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \mathfrak{e}$

Organizational performance (Y) = 1.011+ .0.672 (strategic partnership-$\mathbf{X_1}$) + 0.532(customer relationship -X_2) + 0.614 (level of information sharing-$\mathbf{X_3}$)
The multiple regression equation in this study could be summarized in the following equation form.

$$Y = 1.048 + 0.672X1 + 0.532X2 + 0.614X3$$

Table 4.4 above further shows that, all the explanatory variables included in the above regression equation in this study can significantly explain at 95% confidence level to the variation on the dependent variable. The standardized beta coefficient column shows the contribution that an individual variable makes to the model. In this study the first and second highest influence on the organizational performance were by strategic partnership and level of information sharing factors, with *Beta* value of 0.672, and 0.614, respectively. On the contrary, customer relationship factors with beta value of 0.532 was the lowest predictor of the organizational performance.

4.3.1 Analysis of Variance (ANOVA)

The F-ratio in the **ANOVA** table 4.5 tests whether the overall regression model is a good fit for the data. The table shows that the independent variables statistically significantly predict the dependent variable.

Table 4.3: Analysis of Variance (ANOVA)

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	7.877	3	2.666	215.736	.000[b]
	Residual	1.548	118	.012		
	Total	9.545	129			

As illustrated in Table 4.5, there regression model shows all the independent variables explains the variability in the dependent variables significantly at α= 0.01 as p-value was 0.000. The regression analysis also yields an F-statistic where if the calculated F-value is less than the critical or tabled F-value, the prediction will be accepted. In this study, the significance value is .0001 which is less that 0.5 thus the model is statistically significant in predicting supplier strategic partnership, customer relationship , supply chain collaborations and coordination mechanisms., level of information sharing and organizational performance.

V. Conclusions

The findings of this study indicates that supply chain management practice (supply chain responsiveness, strategic partnership, supply chain information, customer relationships) affects the companies' organizational performance. The standardized beta coefficient shows the contribution that an individual variable makes to the

model. In this study the first and second highest influence on the organizational performance were by strategic partnership and level of information sharing factors. There were poor technology adoption to secure organizational performance in coordination within and across organization activities, but usage of appropriate information technology would improve supply chain responsiveness, save ordering time, and enable to achieve efficiency. The results of this study also conclude that poor level of supply chain management practice affects organizational performance of the organizations in terms of market share, return on investment, sales volume and profit margin.

5.1 **Recommendations of the Study**

From the results of this study the researchers recommends that the management of the food complex industries should keep up establishing ways to manage their supply chains better as this has a direct influence on organizational performance. The study recommends that information communication technology should be fully developed and utilized by the firms. Firms should formulate policy framework and guidelines, which will facilitate the linkages of the joint SCM variables to ensure efficient and effective utilization of resources within supply chain to assure organizational performance.

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Author's contribution: *The researchers devotes all their effort to come with this result.*

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