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EFFECT OF INFORMATION SHARING PRACTICES ON PERFORMANCE OF FOOD PROCESSING FIRMS IN NAIROBI COUNTY, KENYA

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ABSTRACT
The information sharing practices account to about fifty percent of the profitability and better performance of any firm. The food processing subsector performance has been declining thus its contribution to the Gross Domestic Product has reduced to 10% thus leading to operation inefficiency. The objective of the study was to probe the effect of information sharing practices on performance of food processing firms in Nairobi County. The study was premised on the Complexity theory in logistics. Descriptive research design was employed. A population of 172 food processing firms and a sample size of 120 firms was determined. Stratified and simple random sampling were used to select specific firms while data were collected using structured questionnaires. Descriptive statistics aided in describing the primary characteristics of the data. Regression analysis aided to ascertain the effect of information sharing practices on performance of food processing firms with the aid of SPSS version 28. T-statistics were used to gauge the significance of individual objectives at 5% confidence level while F-statistic was used to establish the overall significance of the model. The study established information sharing practices was found to be positively correlated to performance, (regression coefficient regression coefficient 0.247, p-value 0.029). The study concluded that information sharing practices had substantial impact on performance on Food processing firms and recommends that food processing firms should firms should invest more in information sharing platform such as the EDI to enhance free flow of information.
Keywords: Information Sharing Practices, Performance and Food Processing Firms.

INTRODUCTION
Information sharing practices entails the informal and formally agreed methods of disseminating relevant information within the supply chain by the actors to improve collaboration within logistics management. Wardaya (2013). The fruitful incorporation of information in an enterprise is a robust driver for reducing expenses, enhancing productivity and improving client service Information. Indeed, Kazi (2012) notes that one of the five cornerstones of a robust supply chain relationship is sharing information. Further, the author maintains that knowing the data needs of the organization and having a strong information sharing policy in within the organization increases the competitive advantage of the firm. High level of information sharing within the SCM improves the success of supply chain and contributed to better performance of organizations. Marinagi *et al*., (2015) established that information sharing among entities or parties across the supply chain and having a proper integrated information system facilitates higher overall performance. Khalil *et al*., (2019) found that information sharing quality had a negative influence on organizational productivity. However, the above studies did not reflect on information exchange policy, integrated information and data needs.

Manufacturing firms are the backbone of economic progress for countries by promoting industrial expansion. They contribute significantly to economies by fostering job prospects and anchoring large industries (Anuar & Yusuf, 2011). To sustain these contributions, manufacturing firms ought to embrace top-notch SCMPs in addition to advancing their technology and manufacturing processes. Sandhu, Helo and Kristiano, (2013) opine that SCM practices in a company are seen as operational activities and central business operations, that affect how efficient and effective the supply chain is. The major intention of SCM is to improve supply chains and firm performance competitiveness in the long-run through integration with partners, of activities, operations and processes both internally and externally. The partners are clients, industrialists, manufacturers, distributors and suppliers (Kim, 2006). SCM includes a variety of activities for instance all logistic management functions with partners, outsourcing, coordination, planning and procurement (Soosay *et al.*, 2008). Existing studies underscore that the definitive aim of SCM is to boost the productivity of firms (Li *et al.*, 2005, 2006; Chen & Paulraj, 2004; Min and Mentzer, 2004).

Kenya is an emerging economy that is averagely industrialized with a robust manufacturing sector in the African Continent (KAM, 2014). The Kenyan economy benefits greatly from the food processing industry. Companies that process food and drinks in Kenya are categorized under the manufacturing industry. The industry contributes for close to 10 percent of GDP, with the majority of goods, approximately, 95% being food and beverages, building materials and basic chemicals (KIPPRA, 2018).

The Kenya Association of Manufacturers (2018) establishes that agricultural produce processing enterprises are the biggest contributor in regard to volume of production and employment in industrial and allied sector in the country. Agricultural firms therefore have the ability to boost economic growth by supplying raw materials and market for produce in bulk as well as acting as catalysts for expanded farm produce production. The segment is a key prolific sector of the economy projected to back the achievement of Vision 2030 due to its immense potential in poverty eradication, job creation and wealth establishment. In Kenya, food and beverage processing segment is a relatively well-developed sector with products ranging from dairy products, canned vegetables, bakery products, sugar and confectionary, fish, oil and fats among many other products (Kariuki, 2016).

Food and beverage processing firms in Nairobi vary from small-family-informal firms to large formal enterprises quoted in the Nairobi Securities Exchange. Others include subsidiaries of foreign and multinational companies. Multinational food and beverage processing firms have established operations in Kenya either as foreign companies or as joint ventures (Muteshi *et al*., 2017). The performance of food processing firms in Nairobi County has been declining, according to the World Bank report due to the unstable operating climate thus declining profitability over the past five years (World Bank, 2020). The subsector performance has also been declining as compared to other sectors for example according to the (KNBS, 2015) the agriculture output increased by 15.8%, building and construction increased by 13,1%, transport and storage increased by 13.7% while the input of food processing companies to GDP reduced from 15% to 10%. Thus leading to operation inefficiency. According to hanse (2020), the current food production in the food processing firms does not meet the demand thus leading to uncertainty of the sector to meet one of the big four agendas in the county which is food security.

A study on information exchange and performance of supply chain by Fawcett *et al*.(2008) employed survey and partially-structured interviews in data pooling. They carried out the study in 124 manufacturing firms and used simple random sampling to obtain a sample size. The results exhibited that most firms typically do not benefit fully from information exchange because they frequently place much effort on connectivity and too little on willingness. Additionally, establishing connectivity right is a serious barrier that most businesses encounter in their attempt to boost performance. Integrating willingness and connectivity seem to enhance performance. When connectivity and willingness were put together, they seem to be a useful tool that improves the performance of the organization.

A study by Ristovska *et al*. (2017) in Macedonia on the effects of information exchange practices on performance of textile firms used a sample size of 36 textile firms. Data were pooled using questionnaire and analysis done with the aid of SPSS 22.t-test was used to determine the significance of each specific variable while f-test was used to determine the significance of the overall model. Multiple linear regression model was used to determine the relationship between the dependent and the independent variable. The researchers found that the relevance, timeliness and accuracy of information within and outside the company make it possible to achieve opportune and timely decision making.

Both Fawcett, (2007) and Ristovska *et al*, (2017) held that general information sharing positively affects the performance. The preciseness of data prevents making erroneous decisions and incurring pointless expenses, as well as whether the data is prioritized, then data processing time will be reduced and enable make critical decisions more rapidly. Fawcett (2007) and Ristovska *et al*. (2017) support Hübner, (2016) that electronic databases offer access to information whenever it is needed and the possibility for use over temporal and spatial distance when making crucial timely decisions and thus cause a decrease in lead time which will make the firm to meet its operation efficiency through complete management of

information, pertinent data selection and monitoring, speedy transmission and apposite use of information thus increasing its success. However, both studies were based on supply chain performance while the current study will be based on operation performance.

Sharing information across supply chain partners permits them to synchronize their operations and streamline supplier-client relations. Since patented and private information is usually shared along the supply chain, maintaining the integrity of the shared information is an important concern. Against this background, Marinagi *et al*., (2015) examined the intervening role of information exchange on information quality and supply chain performance. A structured questionnaire was used in the field study comprising of a cross-sectional sample of firms in Central Greece. The sample consisted of 200 manufacturing SMEs obtained from ICAP database with 10 to 250 employees. The outcome reaffirmed and supported the mediating function of information exchange in Greece. The findings implied to managers that information exchange in the supply chain allows improved general performance occasioned by implementation of supply chain management principles that raise the dependability and quality of information. The current study bridges the gap by using information sharing practices as an independent variable to assess its effect on performance

Previous studies on SCM advocate that information sharing appears to be a substantial source of competitive edge. Koçoğlu *et al*., (2011) investigated the effect of supply chain integration on information exchange and enhancing performance of supply chain. The hypotheses were verified using data from 158 in top 500 Turkish Manufacturing companies manufacturing companies in Turkey that are listed Istanbul Chamber of Commerce. The results suggested that supply chain integration (SCI) which strengthens connectivity, collaboration and coordination among SC members performs a crucial role in information sharing process. In addition, findings offered helpful intuitions on how firms might use information exchange to boost the efficiency of their supply chains. The current study will bridge the gap by using food processing firms in Nairobi County, Kenya.

In Ghana, Baah *et al*., (2021) investigated how information exchange in supply chains affected organization performance by studying the functions of supply chain agility, collaboration and visibility. A descriptive research design and quantitative approach were used by the study. Furthermore, the partial least square structural equation modeling (PLS-SEM) was adopted in data analysis and interpretation owing to its potential in predictive research models. The results show that information exchange considerably and favorably affected the visibility, performance and agility of supply chain. While visibility of the supply chain had a substantial impact of performance, collaboration and agility largely influenced performance of the supply chain. The study outcomes underscored that information exchange is chief to boosting competitive gains and robust supply chain performance. The current study will employ descriptive research design and used of multiple regression model

Studies on information sharing practices and performance of supply chain have also been carried out in Kenya, though to a limited extent. Kimitei *et al*., (2015) sought to investigate how information sharing affected the association between performance and supply chain linkages among Nairobi County's flower companies. The study used explanatory research methodology and data gathered using a census approach on target population of procurement staff members of 34 flower farms that are under the registration of Kenya Flower Council in the County of Nairobi. Structured questionnaires were used to collect data, and data analysis also included the application of descriptive and inferential statistics. Pearson correlation was utilized to gauge correlation of variables whilst multiple regression model was espoused to analyze data to test the hypotheses. The study concluded that information exchange to a large extent moderated the link between performance and client linkages, supplier linkage and performance, and performance with internal linkages. The current study will use stratifies sampling, simple random sampling and use questioners for data collection.

Nyagah *et al.,* (2015) studied e-procurement and performance of supply chain while focusing on New KCC in the dairy sector in Kenya. Descriptive design was espoused. The study established that a positive association between e-procurement measured as ERP, electronic order processing, information exchange and e-supplier evaluation and supply chain performance. Similarly, Mutangili (2019) performed a study on e-procurement practices and performance of supply chain focusing on Kenya Airways. The study utilized a desk-study review method where existing empirical studies on e-procurement were reviewed and results related to the airline industry. The study established that information sharing together with, e-order processing and e-supplier evaluation largely impacted supply chain performance. It was also determined that the correctness of data is raised by the electronic transfer of procurement information leading to better decision-making process. Furthermore, having access to correct data that improves customer relations is vital for management of enterprises that need to promptly respond to client demands. This study filled the gap by determining how data need and integrated information affects the performance of food processing firms.

Wairingu (2015), sought to establish the effects of information sharing on supply chain performance of manufacturing firms in. Nairobi County, Kenya. To evaluate the broad goal of the investigation, a descriptive research design was chosen. 463 manufacturing businesses with locations in Nairobi County made up the research's target population. A proportionate stratified random sampling procedure was used to select a sample of 100 businesses. Utilizing questionnaires that were

distributed using the drop-and-pick approach afterwards, primary data was gathered. Utilizing both descriptive and inferential statistics, the acquired data was examined. Data analysis was aided by the use of a statistical tool for the social sciences. Tables and figures were used to present the results. The study established that customer and supplier firm relationships, sharing of sales information, sharing of order information, sharing of delivery information, and sharing of delivery information all significantly impacted supply chain performance in the manufacturing firms in Nairobi County, Kenya.

Regression study revealed a favorable link between the independent variables and supply chain performance. The study found that information sharing helped manufacturing companies set up market exchanges, which facilitated advance planning for on-time delivery and quick reaction. Additional conclusions included the fact that sharing order information kept businesses informed of changes to purchase orders, allowing for the formulation of highly accurate and dependable order plans that lower supply chain costs. The study suggests that, in order to strengthen sharing, management of manufacturing enterprises should implement more sales information sharing techniques and technology level. The current study aims to bridge the above gaps by carrying out the study in different context, (food processing firms in Nairobi County), using different dimensions (information sharing policy, integrated information system and data need) to determine how they affect the performance of food processing firms.

The objective of the study was to investigate the effect of information sharing practices on performance of food processing firms in Nairobi County. The null hypotheses were that there is no statistically significant relationship between information sharing practices and performance of food processing firms in Nairobi County.

METHODOLOGY

The study adopted descriptive research design since it facilitated in choosing and grouping of the components and features of object. The study covered 120 food processing firms out of 172 firms in Nairobi County. Stratified Simple random sampling was used to come up a sample size of 120 food processing firms. Data was collected using a questionnaire. Descriptive and Inferential statistics were used to analyze data. Simple and Multiple linear regression analyses were then conducted using SPSS software version 28.0 in order to address study objective. Assumption of linear regression model of normality, multicollinearity and heteroskedasticity were tested before analyzing data.

RESULTS AND DISCUSSIONS

Diagnostic Tests

Test for Normality

Shapiro-Wilk Test was used to test for normality (Aczel & Sounderpadian, 2002). The p-value of Shapiro Wilk Test was 0.944 which is greater than 0.05 (insignificant) hence a conclusion that the residual was normally distributed.

Multicollinearity Test

Incidence and degree of multicollinearity if any was tested using Variance Inflation Factor (VIF). The VIF value was 1.166 less than 10 therefore, multicollinearity was absent. Multicollinearity may lead to wrong results due to its effect of inflating the predictor variables (Cooper & Schindler 2003).

Heteroskedasticity Test

This study used P-P plot to determine if the residuals had constant variance because they are best in the presentation of spread of residuals. The results indicated no specific pattern and the widths were neither increasing nor decreasing as the variables rise. Therefore, heteroskedasticity is absent.

Information Sharing Practices and Performance

Information Sharing Practices was measured in terms of information sharing policy, integrated information system and data needs. Performance was measured using low level of Wastages, maximum utilization of resources and cost reduction. Descriptive statistics such as mean, standard deviation, range, minimum and maximum for information sharing practices and performance were carried out. The summary of descriptive statistics is shown in Table 1.

Information sharing practices had a mean of 3.5750 which implies that food processing firms benefit from information sharing practices. As shown in Table 1 above, the mean for performance was 3.9450 for all the food processing firms which represents the average performance of the food processing firms.

Pair Wise Correlation between the Study Variables

Correlation determines the direction of a relationship between any two variables (Table 2).

The results also show that information sharing practices had a Pearson correlation of 0.244 and a p-value of 0.029<0.05 implying a positive and statistically significant relationship between performance and information sharing practices. This is because sharing of information enhances performance of food processing firms. This suggests that an increase in information sharing practices would lead to statistically significant increase in performance.

Multiple Linear Regression

This study determined the significance of information sharing practices on performance of food processing firms in Nairobi County. A multiple linear regression was used to examine the relationship between information sharing practices and performance. A multiple linear regression analysis is represented in Table 3.

Table 29: Descriptive statistics

	ISP	P
Mean	3.5750	3.9450
Standard Deviation	0.6096	0.6770

Where: ISP-Information Sharing Practices
P-Performance

Table 30: Pearson correlation between study variables

Variables	P	ISP
P	1	0.244
ISP	0.244	1

Table 31: Coefficients estimates of Information Sharing Practices and Performances

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	T	Sig.
1	(Constant)	3.058	.404		7.568	.000
	Information Sharing Practices	.247	.112	.218	2.210	.029

R^2=0.047

Table 3 above shows that the regression coefficients of information sharing practices was 0.247 with a p-value of 0.029<0.05 hence information sharing practices had a positive and statistically significant effect on performance. The R^2 of the model was 0.047 indicating a model where 4.7 % of the changes in performance could be accounted for by information sharing practices, while 95.3% of the changes would be attributed to other factors not included in the study and the error term. This means a unit increase in information sharing practices would result to 0.247 units increase in performance holding other factors constant. Therefore, the null hypothesis was rejected and this implied that there is a statistically significant relationship between information sharing practices and performance.

The study adopts the view that information sharing practices was an important consideration that need to be made when determining the performance of food processing firms in Nairobi County. These results are consistent with Ristorska (2017) who carried out a study in Macedonia on the effects of information exchange practices on performance of textile firms. The researchers found that the relevance, timeliness and accuracy of information within and outside the company makes it possible to achieve opportune and timely decision making. The findings also reflect those of Manangi *et al*. (2015) who found out in their study on intervening role of information exchange on information quality and supply chain performance that information exchange in the supply chain allows improved general performance occasioned by implementation of supply chain management principles that raise the dependability and quality of information. These results also match with those reported ealier by Kocoglu *et al*., (2011), whose findings offered helpful intuitions on how firms might use information exchange to boost the efficiency of their supply chains. The results further corroborate the findings of Baah *et al*. (2021) which showed that information exchange is chief to boosting competitive gains and robust supply chain performance.

However, the findings of the current study do not agree with the previous research of Kimitei *et al*., (2015) who found that information sharing practices affected performance negatively. Theoretically, these findings fail to concur with Julong Deng 1985 on the grey

system theory that there is no free flow of information and complete messages.

The present findings suggest that information sharing practices could significantly improve the performance of the food processing firms since most of the supply chain managers opined that their firms do generate data that could be shared across the supply chain as the needs arises. The simple regression model for effect of information sharing practices on performance is therefore presented by the equation below.

$Y=3.058+0.247\ X_1$

CONCLUSION

The study concludes that an increase in information sharing practices leads to an increase in performance. Therefore, food processing firms should develop strategies to ensure free flow of information to enhance performance of the food processing firms.

RECOMMENDATIONS

It is recommended that food processing firms should transfer information inside the organization and to maintain the organization's operations, enterprises must promote information exchange procedures. Firms should also invest more in the information sharing platforms such as the EDI to enhance free flow of information.

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