

## **INFORMATION SHARING AND SUPPLIER PERFORMANCE IN SUGAR PROCESSING FIRMS IN KENYA**

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### **Abstract**

*This study seeks to examine the effect of information sharing on supplier performance in the Sugar processing Company limited. Descriptive research design was used in the research where both quantitative and qualitative data was collected using questionnaires. Target population was 152 employees of procurement department of Nzoia Sugar Company. A sample size of 122 was arrived at using a formula by Orute (2016). Random sampling technique was adopted to give an equal chance to the population under study of being picked. Reliability of the instrument was ensured through performing cronbach test to establish the internal consistency of the questions and validity was done through careful examination of the content of the test and removing from it all those elements that may prejudice participant's responses. Data was collected using both primary and secondary techniques. Data was analyzed using Pearson correlation, descriptive statistics, and multiple regression analysis. The key finding was that information sharing significantly affected supplier performance. I recommend that a proper database should be established and centrally located so to enhance information sharing. Further study should be done using the variable under study and moderated by procurement manager's tenure in office.*

**Keywords:** *Supplier performance, Supplier Information Sharing Theory, Supplier information sharing*

### **1.0 Introduction**

The Supplier performance is perceived as how a supplier is able to provide the required products to the buyer as evidenced through operational outcomes such as quality, delivery, responsiveness, cost and technical support (Wu, 2016). Ho (2012) lauded that other factors associated with supplier performance include supplier trust, synergy and information sharing. Decisions to buy instead of making products to improve quality, lower inventories, integrate supplier and buyer systems, and create co-operative relations underline need for good supplier performance Nzambu (2015).

Companies across industries have become highly dependent on their suppliers. As a result, their business performance is now closely intertwined with the performance of their suppliers. According to Forrester (2016) a failure to manage and monitor supplier performance can lead to major supply chain disruptions, delivery problems, poor quality, and other issues that damage a company's credibility, as well as their bottom line. On the other hand, Tracy (2016) asserts that an effective supplier management program can help a company spot supplier issues early on, and ensure that they are remediated in a timely manner, thereby reducing business risks and revenue losses. Euster (2016) in the study on factors affecting the performance of supply chain financing in Kenya asserts that the act of information sharing in the supply chain enables accurate and faster

business decision making that translates to enhanced performance of the supply chain in terms of financing. Information sharing is essentially regarded as the bullwhip effect terminator (Fiala, 2012). This sharing of supply information essentially enhances stakeholders total cost reduction hence improving on overall chances of optimal performance of supply chain financing (Gavirneni, 2012). In other words, a successful sharing of useful information between the supply chain partners can result in a reduction in inventory and manufacturing cost, better understanding of customer needs, and faster response to market changes. Good performance of suppliers is vital to the efficiency and success of the public procurement sector and contributes to the best value of money spent by any organization.

Supplier performance is one of the supply chain performance measures that involve cost, quality, time and customer satisfaction (Wu, 2016). In order to assess supplier performance there should be a systematic way of measuring performance which establishes what to measure, methods and systems to collect information and use of measurement data. Unfortunately many organizations in the public sector have not instituted formal procedures for measuring supplier performance as result no records to support their views on supplier performance. Once a supplier is selected the focus shifts from evaluation to the continuous measurement of supplier performance. To improve performance and manage costs, quality and delivery time an organization must be able not only to select the right supplier, but also to monitor and manage performance of supplier over time. Measuring supplier performance is among the ways of measuring supply chain performance. Some measures assess supply base, others assess the purchasing department, while still others may be used to monitor the interfaces between purchasing and other internal functions. Nyongera (2011), measuring supplier performance is an important tool that is very useful to improve supplier performance, improve supplier communication, and recognize exceptional performance and identify suppliers with developmental needs. Based on this background the study therefore focuses on the effect of supplier information sharing on supplier performance in sugar processing firms specifically Nzoia Sugar Company.

### **1.1 Research Objective of the Study**

To establish the effect of information sharing on Supplier performance in sugar processing firms in Kenya

### **2.0 Information theory**

There exists an information asymmetry in processing firms between a privileged borrower and lenders of finances (Akerlof, 1970). Borrowers may choose to misuse their privileged opportunity to borrow finances from financial institutions for investment by not disclosing their eligibility.

Okelo, Namusonge and Iravo (2015) echoed that borrowers have an informational advantage over lenders because borrowers have more information about the investment projects they want to undertake. Kamau, Namusonge and Bichanga (2016) stated that borrowers exploit lenders by managing financial reporting disclosures to their advantage and it is individual for lenders to detect the manipulation practices by borrowers due to lack of inter personal skills. Kerage (2013) explained that information asymmetry deals with the study of decisions in transactions where one party has more or better information than the other. Okelo et al (2015) indicated that information asymmetry result in credit rationing where borrowers are arbitrarily denied loans as lenders decrease the amount of loans that are offered. Makokha, Namusonge and Sakwa (2017) indicated due to lack of information, borrowers had an advantage of multi borrowing which lead to increase in nonperforming loans. This theory will apply in this study to caution suppliers and customers to ensure proper and relevant flow of information to enable them service one another effectively and efficiently. In that case the parties should be aware of each party's expectations before engaging in a deal.

### **3.0 Supplier Information Sharing**

Information is vital for the effective functioning of any business. It has been described as the lifeblood of operations. Information sharing refers to the extent to which a firm openly communicates important and sensitive information to its partners (Shou, 2012). The notion of information sharing has attracted significant attention from a number of scholars who have stressed its role and influence in the supply chain environment such as (Kembro & Naslund 2014). Information sharing has also been regarded as effective predictor factor of a supply chain's effective (Zhang & Chen 2013).

In that regard, a study by Hsu (2008) found that information sharing contributes largely to improved relationships between suppliers by facilitating efficient coordination and responsiveness as well as integration of partner's information system. Chinomona & Pooe (2013) found that timely and accurate sharing of strategic information can foster the reduction of unwanted wastages and costs in supply chain, thus leading to increased profitability. Since information is considered so important for effective supply chains, it is a factor worthy investigation in the case of supplier performance, especially in the context of suppliers.

Information sharing has always been highly regarded as an effective facilitator and a key enabler of collaboration between supply chain members (Cheng & Wu 2005), which suggests the vital role that information sharing has in contributing to the development and improvement of activities performed by firms' supplier partners. Concise sharing of information has been described as a prerequisite of strengthening buyer-supplier trust in that it enables them to collectively share the same objectives and develop mutual problem resolutions (Sub & Kwon 2005). This view was further stretched by Gosh (2008) who posit that a sound and accurate exchange of sensitive and strategic information amongst supplier is important for the establishment of strong and long lasting relationship between the supply chain partners.

According to Barrat (2004), information sharing plays a pivotal role in assisting supply chain partners to collaboratively engage in mutual strategic activities and decision making. This allows them to effectively and efficiently work together and foster the value creation of each supply chain unit in a more synergistic manner. The importance and impact of information sharing has been significantly investigated in a number of studies for example, Zhang & Chen 2013; Cheng 2011 stressing its role in buyer – supplier relationships. Olhager and Praijogo (2012) posit that where there is an adequate and uninterrupted flow of information between each unit of activity, supply chain networks can increase the suppliers' capabilities to perform effectively. Sharing real demand information across the supply chain members reduces the bullwhip effect. Four different levels of information sharing were identified: ordering information, operational information, strategic information, and strategic and competitive information (Lee, Padmanabhan and Whang 1997). They investigated how competition and contracting affect the nature of value sharing at each of these levels.

Chen (1999) quantified the bullwhip effect for multiple-stage supply chains with and without centralized demand information and demonstrated that centralizing demand information can significantly reduce but not completely eliminate the bullwhip effect. Gavirneni, Kapuscinski, and Taylur (1999), analyzed information flow between a supplier and a retailer in and tested the impact of information sharing on supply chain performance. She studied how various information sharing policies, i.e., no information sharing, sharing of complete demand information, sharing of downstream customer's shipment data, and sharing of downstream customer's inventory information, behave under different supply chain structures and demand patterns. One of the interesting findings is that a hybrid information sharing policy improves supply chain performance under volatile demand.

Kelle & Akbulut (2005), the rationale for information sharing and supply chain integration is derived from the traditional nature of supplier-buyer relationships. The buyer wants to purchase a small amount at a time, but the supplier wants to deliver as much as possible at one time. Both want to minimize stocks, the supplier would like to make-to-order and prefers large orders to benefit from returns to scale, while the buyer wants to ensure its service level whilst minimizing inventory holding costs by small, frequent deliveries. It can be difficult to estimate achievable savings by sharing information universally, since supply chains and industries vary so much. In addition, supply chain integration and information sharing enable decisions based on all of the information in the supply chain.

#### **4.0 Supplier Performance**

The most important yardstick to determine the success of suppliers is their performance. Wu, (2010) defines supplier performance as how well a supplier supplies the required products to the buyer as reflected through operational outcomes such as quality, delivery, responsiveness, cost and technical support. Huang, Yen & Liu (2014) posit that a firm's effort to adequately integrate its supply chain activities has a massive impact on their supplier performance. In addition, supplier performance has been described as a major predictor of reseller satisfaction (Yilmaz, Sezen & Kabadayi 2004). Thus, well-performing suppliers represent a key factor that businesses should strive to develop and maintain in their long-term sustainability and profit's aspiration (Sanchez-Rodriguez, Hemsworth & Martinez-Lorente 2005). Krause (2005) further suggest that a supplier performing at optimal level is crucial in enabling the buying firm to reach its performance outcomes in terms of serving its customers more efficiently. A well-performing supplier is likely to remain in the supply chain and grow its relationship with the buying firms – something that all companies should aspire to.

In order to be successful in the competitive business environment of today, companies cannot operate in isolation and only rely on its own performance. They are highly dependent on the performance of other actors in the supply chain as well, not least the suppliers. This increases the need for supplier performance assessment; to evaluate and ensure that the suppliers perform according to the level of performance that is required by the buying firm (Christopher, 2015). The growing importance of the suppliers in a company's supply chain increases the need for supplier performance assessment (Van Weele, 2010). Continuous supplier monitoring helps companies assess whether the suppliers manage to fulfill the sufficient level of performance that is required by the buying firm (Simpson, 2012). Suppliers play an increasingly crucial role in contributing to the competitiveness of the buying firm Njeru (2013). Supply is one of the basic functions common to all types of business enterprises because no business can operate without them.

According to David (2012), Supplier performance helps organizations to better understand their suppliers and the suppliers 'core capabilities by gaining better insights into the suppliers' performance, build mutually beneficial relationships with suppliers and drives continuous improvement opportunities. The performance of suppliers substantially impacts on the efficiency and effectiveness of the buying firm and is of great importance (Fredriksson, 2011). Supplier performance measures, too, help improve efficiency and effectiveness of supply chain (Handfield 2010).

As Lyons (2010) points out financial and non-financial performance measures which include: quality, time/responsiveness, innovation, physical environment and safety price performance, cost-effectiveness, revenue, administration efficiency, internal customer satisfaction, supplier performance and strategic performance.

According to Lyons (2010) suppliers can be appraised on eight areas, namely: finance, production capacity, human resource, quality, performance, environmental and ethical considerations, and organizational structure.

The appraisal criteria is summarized by Carter as the ‘seven Cs’ which represent: competency, capacity, commitment, control systems, cash resources and financial stability, cost commensurate with quality and service and consistency (CIPS, 2012). According to Lawrence (2014), best performing suppliers offer products or services that match or exceed the needs of the buying organizations. Companies boost supplier performance due to magnitude of competitiveness that can be achieved by ensuring the best performance from the suppliers more effectively and efficiently. However this cannot be realized unless the organization has learnt the gaps existing in the supplier performance as well as the causative factors. In addition, Hamisi (2010) asserts many organizations have adopted the supplier performance management practice for competitiveness where they measure, analyze, and manage the performance of a supplier’s performance in an effort to cut costs, alleviate risks, and drive continuous improvement whose intent is to identify potential issues and their root causes so that they can be resolved to everyone’s benefit as early as possible.

According to Rizza (2010) manufacturing companies have been using supplier scorecards to measure basic supplier performance metrics for a long time. In the past decade, however, both manufacturing and service firms have become increasingly aware of the importance of supplier performance and its crucial impact on their own performance and market competitiveness. (Barret 2011) asserts that the increasing reliance on outside suppliers has transformed both perception of the need for understanding and improving supplier performance from just a vitamin to a real painkiller.

According to Tan, Kannan & Handfield (1998), measurement of supplier performance is critical in procurement management. A firm can focus on strategic suppliers who supply the highest percentage of goods and deal with those performance issues with instantaneous and highest influence on its operations (Lambert, Emmelhainz & Gardner, 1996). This constricted focus overlooks lower rank suppliers or suppliers of apparently non-essential goods and services that can affect a firms cost reduction efforts, performance and customer focus (Pi, W. N., & Low, C. (2006).

Collecting accurate and impartial information about their performance such as lead-times, quality standards, pricing compliance and whatever else are set out in the contract is equally important (Powell, 1994; Hervani, Helms, & Sarkis, 2005). Suppliers continually increase their contract performance (Hervani, Helms, & Sarkis, 2005). On the other hand, monitoring performance is laborious, so the effort and methods should be comparable to the worth and significance of the contract (Jones & Oliver 2006).

Effective approaches involve determining the suitable methods of handling the supply base and different explanations are applicable for diverse circumstances (Tan, Kannan & Handfield, 1998). Supplier performance assessment is the quantitative and qualitative assessment of suppliers to ensure a portfolio of best in class suppliers is available for use (Kemunto, 2014). To sustain effective and reliable sources of supplies, buyers should select their suppliers carefully and evaluate them regularly (Humphreys, 2003).

According to Nadir (2012) supplier evaluation provides the buying firm with a better understanding of “which suppliers are performing well and which suppliers are not performing well”. A study by Kirande & Rotich (2014) on the determinants of public procurement performance in Kenyan Universities established that the main concern of procurement function is to make sure that one buys from the best suppliers and also improve the current suppliers. The organizations therefore choose suppliers with who have the capacity to deliver. The study further observed that supplier evaluation can work as a tool to influence future behavior of both buyer and supplier organization. By connecting procurement targets to certain supplier competence, organizations achieve higher supplier performance thereby leading to improved organizational performance. On the other

hand Nzau (2014) in his study on factors affecting procurement performance of public Universities in Nairobi County found out that selection of suppliers is done based on certain set criteria and the needs of the procuring entity. He points out that among the factors which affects the procurement performance includes selection of incapable suppliers who cannot perform.

Further study indicates that, after the prequalification of suppliers' based on supplier competence, public institutions expect a lot from their suppliers because they are confident that they have filtered their suppliers on very efficient basis but still they are uncertain about the quality of the items to be delivered, on time delivery, commitment to quality, technology leverage, and overall performance of suppliers (Masceko, 2013). These findings concur with findings of CIPS (2013) in their report on monitoring the performance of suppliers pointed that strategic monitoring of competence of suppliers is critical in management of performance operations and most importantly, management of supplier-buyer relationship. The report further indicates that performance management criteria should be well communicated to all stakeholders who are directly involved in procurement operations so as to enhance their contribution towards achievement of the desired standards.

A study conducted by Kithika (2013) on supplier evaluation practices established that supplier performance measurement, supplier audits, supplier development and supplier integration are the most used supplier quality management practices. The study also established that from supplier quality management, an organization may enjoy among other benefits reduced lead times, increased responsiveness to customers', orders and enquiries, customer loyalty, increased profitability, reduced opportunity cost from lost sales and effective communication between the organization suppliers as well as customers.

According Pamela (2013) in her study on the determinants of supplier selection and evaluation in Pakistan Telecom industry, supplier financial capacity expertise is one of the key factors which determine the eventual performance of both the supplier and procurement performance, the study depicted high correlation between the financial capacity of supplier and ability of supplier to deliver which in turn enhances supplier performance indicating a need for a strategic alliances for improved performance of the parties.

**5.0 Findings**

The descriptive Results is highlighted as follows:

**5.1 Information sharing and Supplier performance**

The first objective was to establish the effect of information sharing on supplier performance of sugar processing firms in Kenya. Table 5.1 shows that 84% of the respondents agreed that changes in purchases order information is shared on quarterly basis. Further 48% of the respondents agreed that performance evaluation information is shared on quarterly basis while the other 48% agreed that is shared on annual basis, 48% of the respondents agreed that managers rely on future demand forecasting information while 60% of the respondents agreed that production planning information is done on quarterly basis. The mean score for responses for this section was 4.322 which indicate that information sharing is a key factor in determination of supplier performance.

**Table 5.1 Descriptive results on Information Sharing**

Opinion Statement	Never	Annually	Quarterly	monthly	weekly	Mean
1 Changes in purchase order information	0%	24%	84%	0%	0%	4.22
2 Performance evaluation information	0%	48%	48%	12%	0%	4.33

3	Future demand forecast information	1%	17%	48%	12%	0%	4.30
4	Production planning information	0%	48%	60%	0%	0%	4.44
<b>Mean</b>							<b>4.322</b>

### 5.2 Supplier performance

The dependent variable was tested to determine the effect of supplier collaboration, involvement information sharing. Table 5.2 shows that 77.8% of the respondents agreed that supplier performance improves with reduction of product cost. Further 66.7% of the respondents agreed that there was improved product quality, 66.7% agreed that perfect order fulfillment rate increased, 68% agreed that deliveries were reliable and dependable. The mean score for responses for this section was 4.2125 which indicate that supplier collaboration is a critical factor in determination of supplier performance.

**Table 5.2: Descriptive results on supplier performance**

	<b>Opinion Statement</b>	<b>SD</b>	<b>D</b>	<b>U</b>	<b>A</b>	<b>SA</b>	<b>Mean</b>
1	Reduction of product cost	0.9%	0%	0.9%	77.8%	20.4%	4.17
2	Improved product quality	0.9%	0.9%	11.1%	66.7%	20.4%	4.05
3	Perfect order fulfillment rate	0.9%	0%	0%	66.7%	32.4%	4.30
4	Delivery reliability and dependability	0%	0%	0%	67%	33%	4.33
<b>Mean</b>							<b>4.2125</b>

### 6.0 Correlation Results

The results aimed at determining the degree of association between two or more variables (Jahangir & Begum, 2008). According to Triola (2008) correlation exists between two variables when one is related to the other and its calculation gives correlation coefficient statistics (r) whose values lies between -1 and +1. Interpretation of the correlation matrix followed the yard stick presented by Qui (2011) and Makokha, Namusonge and Sakwa (2017) stated that rho of 0.9 to 1 shows very high correlation, 0.7 to 0.89 shows high correlation, 0.5 to 0.69 shows moderated correlation, 0.3 to 0.49 shows low correlations and 0.0 to 0.30 shows little if any correlations. The dependent variable was supplier performance and the independent variable was information sharing. Results of Table 6.1 indicated that there was a low positive correlation of 0.415 between information sharing and supplier performance of sugar processing firms. The P value is 0.000 implying that the relationship was significant. This means that information sharing is a determinant of the supplier performance in sugar processing firms in Kenya.

**Table 6.1: Correlation Matrix**

		<b>SP</b>	<b>IS</b>
SP	Pearson Correlation	1.000	
	Sig. (2-tailed)		
IS	Pearson Correlation	0.415**	1.000
	Sig. (2-tailed)	0.000	

SP (Supplier performance), IS (information sharing)

### 7.0 Supplier information sharing and Supplier performance

Researcher sought to establish the effect of information sharing on supplier performance of Nzoia sugar company Ltd. It was established that information sharing is a key determinant for supplier performance.

Information sharing contributes largely to improved relationships between suppliers by facilitating efficient coordination and responsiveness as well as integration of partner's information system. Timely and accurate sharing of strategic information foster the reduction of unwanted wastages and costs in supply chain, thus leading to increased profitability.

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