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EFFECT OF THE SUPPLIER SELECTION ON SUPPLY CHAIN EFFICIENCY IN COUNTY GOVERNMENT OF NANDI

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Abstract

Purpose: The main purpose of this study was to evaluate the effect of supplier selection on the supply chain efficiencies in the county Government of Nandi. The study was guided by the following theories: transaction cost theory and the contingency theory. The study employed an explanatory survey which was cross-sectional in time dimension.

Methodology: A proportionate stratified random sampling based on departmental section was utilized. The primary data collection procedure involved a survey where a self-administered questionnaire was used. With reference to content validity, the questionnaire was reviewed by a panel of experts before pilot testing was done. Once the data was cleaned, sorted and entered, it was analysed through the use of descriptive analysis (frequency distribution, means, standard deviation) with the data being presented in tabular and pictorial format. The inferential statistics (multiple regression), will be conducted at 95 per cent confidence level with significance levels of 0.05. The results were displayed using tables.

Findings: The findings of the study indicated that supplier selection practices had positive and significant influence on supply chain efficiency, Kenya ($\beta = 0.114$; $p < 0.05$). The study concluded that supplier selection is the predictor of supply chain efficiency of county government of Nandi. The study recommended that the county government of Nandi other organizations at large should show more commitment in SRM by having systems to monitor and appraise and evaluate performance at a strategic level.

Unique contribution to theory, practice and policy: The study could be replicated in other industry sectors of the economy to build on the body of knowledge of supplier selection on performance of organizations.

Key words; *supplier, supplier selection, efficiency and supply chain.*

1.0 INTRODUCTION OF THE STUDY

Supplier relationship management plays an important role in enabling the firm to respond to dynamic and unpredictable changes occurring in the business environment. Supplier relationship management (SRM) is an important perspective for firms to ensure the supply of reliable and frequent deliveries in today's dynamic environment. For such a relationship to be effective and long-term, it has to be beneficial for all parties, the buying and the supplier firms (Al-Abdallah, Abdallah & Hamdan, 2014). Increasingly, SRM has become vital in the buyer-supplier coupling because of the dynamics inherent in the global supply chain environment (Zhang & Cao, 2018). The use of multiple suppliers provides more considerable flexibility due to the diversification of the organization's total requirements.

Supplier relationship management occurs through four main practices: supplier selection, trust-based relationship with suppliers, supplier collaboration and supplier partnership and development (Al-Abdallah, Abdallah & Hamdan, 2014). These dynamics, such as changes in demand patterns, inflationary pressures, currency fluctuations, governmental policies, among others, create conditions of supply uncertainty. Supplier selection is one of the most important decision-making issues in supply chain management field. The selecting process is critical for enhancing the company's efficiency, and requires the assessment of different alternative suppliers based on different criteria (Taherdoost & Brard, 2019). In general, the supplier selection problem in supply chain is a group decision making multiple criteria.

Supply chains are the backbone of economic activities and support production, commerce, and international trade (Rastogi & Arvis, 2014). Extant literature affirmed that efficiency in supply chain should be assessed from the perspective of the user. Lichocik and Sadowski (2013) suggest that SC efficiency should be approached as a function of efficiency within operational processes. The functions of efficiency addressed by reducing processes, lean, minimizing the number of links in SCM, and integrating internal processes with partners to share common objectives (Lichocik & Sadowski, 2013). The integration and coordination of the performances of those members. As such, managing the supply chain efficiency is indeed a very difficult and challenging task (Mishra, 2012).

Statement of the Problem

Improving supply chain efficiencies has become increasingly important to public sector organizations as they strive to improve operational efficiency and reducing cost (Chen, Preston & Xia, 2013). Inefficiencies in the supply chain results in about 24% to 58% of the consumer price leading to wastages and cost of procurement. (Negi & Anand, 2014). Significant benefits are possible from better managing relationships with key suppliers (Lambert & Schwieterman, 2012). The business environment is characterized by globalization, rapid technological advancement and short product cycles. Extant literature has recognized the importance of key supplier relationship management (SRM) activities in buyer-seller exchanges. But little is known about the mechanisms and situations under which supplier relationship affects the supply chain efficiencies of the public sector organizations. Many organizations are struggling to stay afloat and are faced with a myriad

of challenges, key among them being increased competition in the market as well as operating in difficult economic conditions characterized by high inflation rates, high interest rates, and volatility in currency fluctuations (Porter & Teisberg, 2006). Due to gaps, there is the need to investigate the antecedents and consequences of supplier relationship management. Due to the dearth of studies, the study sought to evaluate the effect of supplier relationship management on the efficiencies of the supply chain in the county government of Nandi.

Objective of the Study

- i. To determine the effect of the supplier selection on supply chain efficiency in County Government of Nandi.

Research Hypothesis

H₀₁: Supplier selection has no effect on supply chain efficiency in County Government of Nandi.

2.0 LITERATURE REVIEW

Transaction Cost Economic Theory

The transaction cost theory postulated by Coase in 1937. The indicates that the decreasing costs of search, evaluation and monitoring of competing suppliers should lead to a shift toward markets as a form of organizing economic activity. The theory stipulates the transaction costs are encountered whenever a firm seeks to procure a service or good from a provider (Williamson, 2008). It further argues that a firm can make the efficient allocation of resources than a market due to imperfections in the markets and three types of transaction cost exist; search and information cost, bargaining cost and enforcement costs. The transaction costs include the administrative resources needed to manage the solicitation and bidding and award processes, implement the contract, and perform adequate oversight (Girth, Hefetz, Johnston & Warner, 2012).

Transaction cost economics explains that inter-firm cooperation can overcome the limitations of restricted rationality, secure economic efficiency with reduced transaction costs, and realize transaction stability from opportunistic threats. That is, a hybrid form of inter-organizational governance, such as a mixture of complete market transactions and hierarchy transactions, leads to efficient transaction costs or resolves uncertainty. In buyer-supplier relationships, TCE asserts that uncertainty can arise from the environment and/or from the trading partner (Bensaou, 1997). Uncertainty concerning the environment results from factors that are outside the inter-firm relationship.

Contingency Theory

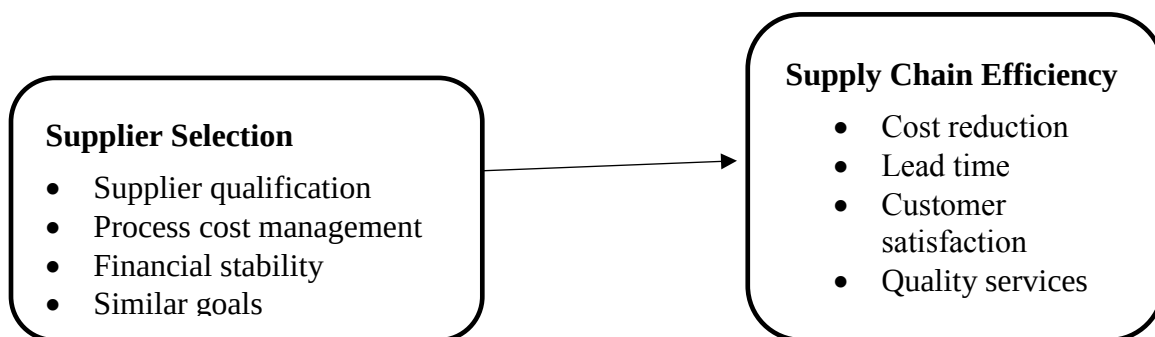
The theory was proposed by Lawrence and Lorsch in 1967. The theory suggest that optimality of the organizational form or structure is dependent upon the demands of the environment (Negandhi & Reimann 1972). The contingency approach identifies and

develops the functional relationships between the organization management and performance and environment variables (Ohemeng, 2010). The basic proposition of the contingency theory is that organizational performance is a consequence of fit between two or more factors – such as the fit between organization, environment, strategy, structure, systems, style, culture, among others (Yin & Zajac, 2004). Organizations that rooted in sound, stable and guaranteed markets will have mechanistic forms while those organizations embedded in uncertain and unstable markets will develop organic forms (Dooley, 1997). How an organization is structured and functions correspond to the nature of the environment.

The theory asserts that organizations hold of the optimal organizational structure is primarily dependent on the existing environmental conditions such that in stable environments, the organization would use centralized structures while in dynamic environments the same organization would display a decentralized structure (Negandhi & Reimann, 1972). Therefore, the design that the organization assumes must try matching its structural complexity with the environmental and technological, therefore the more complex organizations are less understood and more ambiguous is its operations (Anderson, 1999). The effectiveness of an organizational structure is linked to a certain degree of certainty and stability of its technological and market environments (Negandhi & Reimann 1972).

Conceptual Framework

A conceptual framework defines the research problem and guides the subsequent discussions on the research topic. It is an approach to research that is informed by multiple research traditions and design strategies (Depoy & Gitlin, 2011).



3.0 RESEARCH METHODOLOGY

Research Design

A research design is a general plan of how the researcher went about in answering the research question(s). It contained clear objectives, specifies the data and considers the constraints as well as discussing ethical issues (Saunders, Lewis and Thornhill, 2009). The study employed an explanatory design which was cross-sectional in time dimension. It is explanatory as it seeks to establish causal relationships between the variables by going

beyond description and attempting to explain the reasons for the phenomenon being observed (Depoy & Gitlin, 2011).

Sample Size and Sampling Technique

A sample is the subset of the population (Kombo & Tromp, 2011). The study employed a stratified random sampling procedure because the target population is made up of individuals from different background. A stratified sampling enhances sample representation and lowers sampling error on some predetermined characteristics either by increasing the homogeneity or decreasing the variability in each subgroup (Depoy & Gitlin, 2011). The study used Taro Yamane formula so as to determine the desired sample size.

$$n = \frac{N}{(1 + Ne^2)} \dots\dots\dots \text{Equation 3.1}$$

n = Sample size **N** = Population **e** = Error term

Using 95% confidence level and an error limit of 5% the sample for the study was;

174

$$n = \frac{174}{1 + 174 * 0.05^2} \dots\dots\dots \text{Equation 3.2}$$

= 122 respondents

Mugenda and Mugenda (2008) noted that a sample 10% of the entire population and more is appropriate. Hence the sample for the study was significant.

Research Instruments

A structured questionnaire was a major tool for the collection of primary data during the study and will have both open-ended and the closed-ended type and administered by research enumerators to increase its efficacy. The instrument was preferred because the researcher was able to obtain responses from a large cohort within a short time (Mishra, 2012). Further, this form of the instrument allowed for statistical analysis for describing the phenomena of interest.

Validity of Research Instrument

The pilot testing was carried out on the sectional heads to confirm the face and content validity of the instrument. Validity addresses the relationship between the concept and is also concerned with the nature of the cause-and-effect relationships. Content validity was obtained through specifying the full domain of the concept with the aid of a literature

search and adequately constructing indicators from the past studies to represent the domains of the concept (Depoy & Gitlin, 2011) and then submitting the constructed items or draft for a review by a panel of experts.

Reliability of Research Instrument

Reliability is the ratio of the true score's variance to the observed variable's variance. It can estimate and evaluate the stability of measures and internal consistency of measurement instrument while rating the reliability of the instrument scores (Tabachnick & Fidell, 2013). Reliability means the ability of a measuring instrument to give accurate and consistent results. According to Wire (2015), it is necessary to have a pilot test for testing the reliability of data collection instruments. Therefore, before the launch of full-fledged data collection, a small pilot study was carried out to check required reliability of the constructs to be included in the questionnaire.

Data Processing and Analysis

Data preparation was carried out in several significant steps which included completeness check, data editing, coding and entry). Data conversion reduced raw form into reduced and classified forms that are more appropriate for analysis using a statistical package for the social sciences (SPSS). After these procedures, data then was analysed through descriptive and inferential statistics (Mishra, 2012). Once the descriptive analysis has been done, the information was presented in various ways such as tabular format, bar charts, frequency tables and frequency distribution tables. The study used a multiple regression analysis is a general statistical technique used to analyse the relationship between a single dependent variable and several independent variables. In order to reduce reliance on a single item or variable, the study used a scale or an index composed of multiple variables as the sole representative of a concept (Garson, 2013).

4.0 RESEARCH FINDINGS AND DISCUSSIONS

4.1 Pilot Test Results

Cronbach alpha was used by the study to test the reliability of the questionnaire. The study tested the four items in each variable which was covered by the study. The Cronbach alpha coefficient of 0.7 and above was the desired level for the reliability of the questionnaire. The results are shown in Table 1.

Table 1 Pilot Test Results

Variables	Tested Items	Cronbach Alpha Coefficients
Supplier selection	4	0.851

Table 1 shows that supplier selection had the highest Cronbach alpha of 0.851, which is above 0.7 threshold. Thornhill, Lewis and Saunders (2011) values over 0.7 in Cronbach's

alpha (α) scale are the accepted in decision making rule. Hence all the items in the questionnaire were reliable since all the coefficients were above 0.7.

4.2 Multiple Regression Model Results

Multiple regressions were used to determine the effect of a set of independent variables as as depicted

Table 2: Model Summary Results

Model	R	R Square	Adjusted Square	R Std. of Estimate	Error the	Durbin-Watson	F
1	.760 ^a	.578	.563	.39671	1.921 39.317		

a. Predictors: (Constant), Supplier partnership, Supplier selection, Supplier collaboration
Supplier orientation

b. Dependent Variable: Supply chain efficiency

In Table 2 where supply chain efficiency is the independent variable. The coefficient of determination (R square) of 0.578 which explains that 57.7% of the change on the supply chain performance of county government of Nandi with the remainder of 42.3 % explained by other factors. The explanatory behavior of Adjustment of the R square was 56.3% hence variation on supply chain efficiency of county government of Nandi did not substantially reduce. It can therefore be inferred that an increase of supply relationship management practices causes 56.3% increase in the supply chain efficiency of county government of Nandi.

4.2.1 Assessing the Fitness of the Multiple Regression Model

The researcher determined if the model was fit for the study. Analysis of Regression model was used to determine the relationship between supplier selection, and the supply chain efficiency in the county government of Nandi.. The analysis is presented in Table 3.

Table 3 : ANOVA Test Results

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	24.751	4	6.188	39.317	.000 ^b
	Residual	18.099	116	0.157		
	Total	42.849	120			

a. Dependent Variable: Supply chain efficiency

b. Predictors: (Constant), supplier partnership, supplier selection, supplier collaboration, supplier orientation

From Table 3 it can be inferred that there is a joint contribution of supplier selection, supplier orientation, supplier collaboration and supplier partnership was equally significant in predicting supply chain efficiency of county government of Nandi at an F-value of 39.317 significant at 5% level of confidence.

4.2.2 Regression Coefficients

The positive Beta values indicate the positive relationship supplier selection, and supply chain efficiency of county government of Nandi. The results are as displayed in Table 4.

Table 4:Regression Coefficients

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	.661	.311		2.123	.036
1. Supplier selection	.114	.058	.132	1.971	.041

The results in Table 4 depicts that the Beta value for supplier selection was 0.114. These findings indicate that all the supplier relationship studied jointly significantly affects the supply chain efficiency at county government of Nandi.

Summary for Hypotheses Test Results

Hypothesis	β and P values	Decision
H₀₁: Supplier selection has no effect on the supply chain efficiency in County Government of Nandi.	$\beta=0.114$, $P=0.041$,	Rejected null hypothesis

5.0 SUMMARY, CONCLUSION AND RECOMMENDATIONS

Summary

The study sought to determine the effect of the supplier selection on supply chain efficiency in County Government of Nandi. Supplier selection practices was found to have positive and significant effect on supply chain efficiency in County Government of Nandi. The last conclusion made was that timely delivery has a significant effect on procurement function performance. It is therefore prudent for the public entities to ensure that there is timely delivery of supplies in the system so that resources wastages are not encountered. Specifically, for supplier selection with ability to disseminate these quality values to the new systems of devolution in Kenya, procurement function performance likely to improve since there will always be a match in the goals of the buyer

Conclusion of the Study

The study concluded that supplier selection has significant effects on supply chain efficiency. The findings above provide evidence of proof that the components of supplier selection are related to procurement function performance either positively or negatively. The study concluded that, quality, price, performance factor is the most effective and efficient supplier selection factor towards improvement of supply chain performance in supermarkets. This indicates that, the supermarkets focus more on quality factor in selecting suppliers which improves their supply chain performance. There is therefore positive relationship between supplier selection factors and supply chain performance.

Recommendations of the Study

In light of the above conclusions, below are the recommendations suggested; county government of Nandi and other organizations at large should show more commitment in SRM by having systems to monitor and appraise and evaluate performance at a strategic level. It should also ensure open loop communication with regular feedback to easily diagnose pain points and address them before becoming fully blown out. Trust should also be embedded in all interactions, being guided by integrity policies and openness in dealings. The study further recommended that supply chain managers should use the results of the study to improve on organizational performance by employing strategic SRM. Policies that support SRM should also be put in place as this had been confirmed by research findings to improve organization performance.

Suggestions for Further Studies

The study mainly focused on the effect of supplier relationship management practices on supply chain efficiency in the county government of Nandi. Future study can be done on the effect of supplier selection factors on supply chain performance of county governments in Kenya. Further study could be conducted in other counties in Kenya on the same subject. Further research should also be conducted to find out how quality and cost factors affects supply chain performance of organizations.

REFERENCES

- Adams, W., Einav, L., & Levin, J. (2009). Liquidity Constraints and Imperfect Information in Subprime Lending. *American Economic Review*, 99(1), 49-84.
- Amoako-Gyampah, K., Boakye, K. G., Adaku, E., & Famiyeh, S. (2019). Supplier Relationship Management and Firm Performance in Developing Economies: *International Journal of Production Economics*, 208(12) 160-170.
- Anderson, S. W., & Dekker, H. C. (2005). Management Control for Market Transactions: the Relation Between Transaction Characteristics, Incomplete Contract Design, and Subsequent Performance. *Management Science*, 51(12), 1734-1752.
- Anderson, P. (1999). Perspective: Complexity Theory Organization Science. *Organization Science*, 10(3), 216-232.

- Al-Abdallah, G. M., Abdallah, A. B., & Hamdan, K. B. (2014). The Impact of Supplier Relationship Management on the Competitive Performance of Manufacturing Firms. *International Journal of Business and Management*, 9(2), 192-203.
- Bag, S. (2018). Supplier Management and Sustainable Innovation in Supply Networks: An Empirical Study. *Global Business Review*, 19(3), 176-195.
- Emiliani, M. L. (2010). Historical Lessons in Purchasing and Supplier Relationship Management. *Journal of Management History*. 16(1), 116-136
- Barlett, J. E., Kotrlik, J. W., & Higgins, C. C. (2001). Organizational Research: Determining Appropriate Sample Size in Survey Research. *Information Technology, Learning, And Performance Journal*, 19(1), 43.
- Barney, J. (1991). Firm Resources and Sustained Competitive Advantage. *Journal of Management*, 17(1), 99-120.
- Bensaou, M. (1997). Interorganizational Cooperation: The Role of Information Technology an Empirical Comparison Of US And Japanese Supplier Relations. *Information Systems Research*, 8(2), 107-124.
- Bettinazzi, E. L., & Zollo, M. (2017). Stakeholder Orientation and Acquisition Performance. *Strategic Management Journal*, 38(12), 2465-2485.
- Black, J. A., & Boal, K. B. (1994). Strategic Resources: Traits, Configurations and Paths to Sustainable Competitive Advantage. *Strategic Management Journal*, 15(12), 131-148.
- Bogner, W. C., Thomas, H., & Mcgee, J. (1999). Competence and Competitive Advantage: Towards a Dynamic Model. *British Journal of Management*, 10(4), 275-290.
- Lichocik, G., & Sadowski, A. (2013). Efficiency of Supply Chain Management. Strategic and Operational Approach. *Log forum*, 9(2), 119-125.
- Rastogi, C., & Arvis, J. F. (2014). *The Eurasian Connection: Supply-Chain Efficiency Along the Modern Silk Route Through Central Asia*. The World Bank.
- Sanchez, R., Heene, A., & Thomas, H. (1996). *Dynamics of Competence-Based Competition: Theory and Practice in The New Strategic Management*. Pergamon.
- Saunders, M., Lewis, P., & Thornhill, A. (2009). *Research Methods for Business Students*, (5th Ed.). Prenticehall, New York
- Schoonhoven, C. B. (1981). Problems with Contingency Theory: Testing Assumptions Hidden Within the Language of Contingency" Theory". *Administrative Science Quarterly*, 17(32), 349-377.
- Sekaran, U., & Bougie, R. (2010). *Research Methods for Business: A Skill Building Approach*, (5th Ed.). John Wiley & Sons, Hoboken.
- Şener, S., Savrul, M., & Aydın, O. (2014). Structure of Small and Medium-Sized Enterprises in Turkey and Global Efficiency Strategies. *Procedia-Social and Behavioural Sciences*, 150(15), 212-221.