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INFLUENCE OF STRATEGIC SUPPLIER RELATIONSHIP ON SUPPLY CHAIN PERFOMANCE IN MANUFACTURING FIRMS IN NAIROBI COUNTY

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ABSTRACT

With the increased supply chain performance concerns and awareness among several stakeholders in the supply chain as well as interest groups such as consumer groups, manufacturing sector organizations may find it appropriate to adopt strategic supplier relationship management. This study is guided by Empowerment theory and Resource based view theory. The study was guided by the following objectives, supplier development programs and supplier segmentation-The research objectives and research questions set out and the scope of study limited to manufacturing firms in Nairobi County, Kenya. The research used descriptive research design. Data was analyzed using both descriptive and inferential statistics where regression analysis was used to establish the effect of independent variables on the dependent variable. The population census was 405 respondents drawn from manufacturing firms Nairobi county with a sample size population of 201. The data was analyzed with SPSS version 23. Non probability sampling technique was used. As such, since the purposive non probability sampling technique would be appropriate. Questionnaires would be used to collect both primary and secondary data. Data collected was validated, edited, coded and then analyzed qualitatively. Descriptive statistics such as percentages and frequencies were used to summarize the data. Data presentation methods include tables, charts and figures. The study concludes that supplier development has a significant effect on performance of manufacturing firms in Nairobi County, Kenya. The study also concludes that supplier segmentation has a significant effect on performance of manufacturing firms in Nairobi County, Kenya. From the findings, this study recommends that manufacturing firms should establish structured supplier development programs aimed at enhancing the capabilities and capacity of key suppliers. Provide training, resources, and technical assistance to support their growth and improvement initiatives. In addition, the manufacturing firms should allocate dedicated resources and attention to strategic vendors who play a critical role in the manufacturing firm's supply chain. Establish long-term partnerships, align goals, and collaborate closely on strategic initiatives to drive mutual growth and success.

Key Words: Strategic Supplier Relationship Management Practices, Performance Of Manufacturing Firms, Supplier Development Programs And Supplier Segmentation

Background of the study

The study sets out to explore the influence of strategic supplier relationship management on the supply chain performance of manufacturing firms in Nairobi County. Although labor costs constitute the major share of the total costs of production, there is still a high economic potential in improving expenditure on products and services (European Commission,2018).Supplier Relationship Management(SRM),understood as approach to systematically managing an organization's interactions with the companies that supply products and services to it, can help to reduce cost and enhance quality of service delivery (Mettler &Rohner,2016).However, since the manufacturing firm buying agents were only expected to attain the best price for the needed goods in the recent past, the trust between the buyer and the supplier is weak and the relationship is antagonistic. Therefore, and in contrast to industries with intense competition like for example the automotive or the consumer electronics industry, SRM is not paid much attention to in manufacturing academia and practice yet. Although the adoption of electronic services saves the cost of the preparation and transmission of paper requests and invoices and eliminates costly, time-consuming errors from manual data entry by connecting ordering systems with production systems(Giannnakis,2010),only 38 percent of the German manufacturing firms implemented an electronic purchasing order and 35 percent an electronic invoice(*Forker et al*.,2012).

In Sitzerland, manufacturing supplier's research and practice and the concept of SRM are not paid much attention yet. The positioning of the purchasing department in the value chain of manufacturing service delivery and the resulting low attention on the part of the manufacturing board of directors makes it difficult to promote purchasing function from a pure cost driver to a respectable facilitator of manufacturing service delivery that contributes to revenue increases, knowledge acquisition and added value to the organization.

In South Africa, Strategic supplier relationship management is widely recognized as the most important responsibility of the purchasing function because the organization's suppliers can affect the price, quality, delivery reliability and availability of its products(Pearson & Ellram,2018).Manufacturing firms aim that proper strategic supplier relationship management would help to reduce product and material costs while maintaining a high level of quality and after-sales services(Sonmez,2018).Therefore, an efficient strategic supplier relationship management needs to be in place for successful supply chain management. Many manufacturing firms in the world have realized that they can sustain the cost reductions and improve their quality of production by concentrating on their purchasing and supplier management (Kumar *et al.*, 2017).Minahan (2017) added that a 5% improvement in supply saving can help the manufacturing firms boost up their operating profits by 1-3%.These profits can be reinvested in hiring the best manufacturing staff to drive up the quality of production. Besides, strategic supplier relationship management is a crucial purchasing activity for many firms as it could improve on the firm's resources and core competencies (Hsu et al., 2018).

In Kenya, studies on strategic supplier relationship management and development, concludes that Supplier Development Strategy, Supplier Motivation Strategy and Supplier Relationship Strategy affect procurement performance positively though the effect is not on a very significant scale. Supplier dispute resolution and Rating Strategy and Communication Strategy affect procurement performance negatively. Between these two, only communication strategy has a significant impact on procurement performance. On how manufacturing firms use Supplier Motivation Strategy, Supplier Relationship Strategy, Supplier dispute resolution and Rating Strategy and Communication Strategy to develop suppliers, the study concludes that Nairobi manufacturing firms have a good approach to supplier development.(Chepkwony,*et al*.,2014)

Statement of the Problem.

A strategic supplier partnership is a critical component of any organization's performance. This necessitates a company's collaboration with its strategic suppliers in order to gain a competitive advantage by sharing knowledge, making joint decisions, and sharing advantages, resulting in greater profitability in meeting consumer needs than if the company acted alone (Simatupang & sridharan, 2012).

Despite the extensive law provisions that guide the procedures of procurement among manufacturing firms in Kenya, there has been myriad of issues arising based on the delayed payments, illegal outsourcing and unethical procurement which affect supplier relations management. The question that arises in this context constitutes whether the methods the public manufacturing sector adopt in their procurement processes has implications on the selection of appropriate supplier relations. More than 50% of the corruption cases alleged in the manufacturing firms sector are related to supplier relations adopted (Owalla, 2012).

In Kenya, the central government and county government spends about Kshs.234 billion per year on procurement. However, on annual basis, the national government loses close to Kshs.71 billion about 17 per cent of the national budget due to poor supplier relations used such as inflated procurement quotations (KISM 2014).According to Public Procurement Oversight Authority (PPOA 2014), most of the tendered products/services in many manufacturing firms have a mark-up of 60 percent on the market prices. The inefficiency and ineptness of overall selection and implementation of strategic supplier relationship management contributes to loss of over Kshs.50 million annually (Tom 2014).According to Victor (2012), procurement expenditure could be minimized through proper supplier relations management.

From the empirical Researchers have standpoint, Apiyo and Mburu (2014) identified that there has been limited research carried out with the aim of determining the actual reasons why the manufacturing firms have not been able to achieve their streamlined supply chain objectives. concentrated on procurement aspects such as procurement planning and delivery in manufacturing procurement(Owalla,2012).Additionally, while striving to achieve their performance problem ,Apiyo and Mburu(2014) addressed the general factors affecting the procurement planning showing a relatively underdeveloped information system structure and therefore poor relations management(Parente,2016).Managing key relations management in order to comply with the requirement of both internal and external stakeholders(Porter and Olmsted,2011;A vision and Young,2012).firms (Wogube,2011), allocation of budgets for Manufacturing firms(Nyumu,2016) and management of devolved funds for

Herzlinger (2012) and Porter and Olmsted(2011) however concede that production is considered to be different from most other industries due to high level of regulation, the high proportion of governmental investment, the associated low pressure in respect of effectiveness and efficiency of state-subsidized manufacturing firms and the lack of orientation towards customer benefit. Chepkwony *et al*.(2014) found that there have been numerous complaints from the general public regarding erratic supplies of the essential raw materials and other production supplies in most manufacturing firms in the country. This coupled with the scanty literature on the state of supply relations management and the influence thereof on supply chain performance of manufacturing firms forms the basis for the present day study. Hence; this study sought to explore more the knowledge gap by assessing the strategic supplier relationship management on supply chain performance of manufacturing firms in Nairobi County.

General Objective

The general objective of the study was to assess the influence of strategic supplier relationship management practices on performance of manufacturing firms in Nairobi County, Kenya.

Specific Objectives

i. To establish how supplier development programs affect performance of manufacturing firms in Nairobi County, Kenya.
ii. To establish how supplier segmentation influence performance of manufacturing firms in Nairobi County, Kenya

Theoretical Review

Empowerment theory

According to Tones & Tilford (2001), Empowerment theory has been identified as a principal theory across various disciplines. Adapted from Zimmerman's (1984) work, Rappaport (1987) adapted it to community psychology studies. Ever since, the theory has found its way into social studies as a key concept in remedying inequalities and towards achieving better and fairer distribution of resources for organization through engagement and participation, (Rose 2011).

According to theory, empowerment refers to the ability of people to gain understanding and control over personal, social, economic and political forces in order to take action to improve their life situations. It is the process by which individuals and organization are enabled to take power and act effectively in gaining greater control, efficacy and social justice in changing their lives and their environment. It is a process that fosters power in suppliers, form use in their own duties, their activities and in their companies by acting on issues that they define as important. (Zimmerman 2020).

This view is shared by Lee(2019) who more recently define empowerment as a notion of suppliers having the ability to understand and control themselves and their environments(including social, economic and political factors),expanding their capabilities and horizons and elevating themselves to greater levels of achievement and satisfaction. This can be deduced to mean that empowerment is a process that has a number of qualities such as: having decision making power, having access to information and resources, having a range of options from which to make choices. Infact, Zimmerman (2020), then originator of this theory, argues that empowered individuals have the characteristics of high self-esteem, self-efficacy, control over their life and increased socio-political and civic participation.

In this case, empowerment is in line with the definition of the theory as given by Lee (2015) that empowerment is concerned with the transformation of individuals' lives in achieving goals and reaching targets, which they had thought impossible (that is to gain authority, skills, status, self-belief and image, progressing to greater things and increasing rewards).In the present study, supplier development will be underpinned by empowerment theory. To this end, the supplier is expected to present its contract terms officially, well document deliveries and institute quality improvement measures on a continuous basis, among others.

Resource based theory (supplier segmentation)

The resource based view (RBV) as a basis for the competitive advantage of a firm lies primarily in the application of a bundle of intangible or intangible resources at the firm's disposal. To transform a short-run competitive advantage into a sustained competitive advantage requires that these resources are heterogeneous in nature and not perfectly mobile. Effectively, this translates into valuable resources that are neither perfectly imitable nor substitutable without great effort. If these conditions hold, the bundle of resources can sustain the firm's above average returns (Crook et al., 2008).

Resources are the inputs or the factors available to a company which helps to perform its operations or carry out its activities (Black and Boal 2018, Grant 2018 cited by Ordaz et al.2012).Also, these authors state that resources, if considered as isolated s factors do not result in productivity; hence, coordination of resources is important. Most importantly, suppliers need to be segmented based on their abilities and their ability to marshal enough resources. The ways a firm can create a barrier to imitation are known as "isolating mechanisms", and are reflected in the aspects of corporate culture, managerial capabilities, information asymmetries and property rights (Hooley & Greenlay 2011). Further, they mention that except for legislative restrictions created through property rights, the other three aspects are direct or indirect results of managerial practices.

King (2010) mentions inter-firm causal ambiguity may result in sustainable competitive advantage for some firms. Casual ambiguity is the continuum that describes the degree to which decision makers understand the relationship between organizational inputs and outputs. Their argument is that inability of competitors to understand what causes the superior performance of another, helps to reach a sustainable competitive advantage for the one who is presently performing at a superior level. Holley & Greenly (2018) state that social context of certain resource conditions act as an element to create isolating mechanisms and quote edition does not exist. According to the characteristics of the RBV, rival firms may not perform at a level that should be identified as considerable competition for the incumbents of the market, since they do not process the required resources to perform at level that creates a threat and competition. Through barriers to imitation, incumbents ensure that rival firms do not reach a level at which they may perform in a similar manner to the former. In other words, the sustainability of the winning edge is determined by the strength of not letting other firms compete at the same level. The moment competition becomes active, competitive advantage becomes ineffective, since two or more firms begin to perform at a superior level, evading the (Ethiraj et al., 2018).

RBV underpins supplier segmentation based on strategic, tactility and potentiality of the supplier in the present study. In this case the supplier is expected to be tactical and has the ability to leverage its financial resources to enhance its efficiency in deliveries. To this, end, timely payment by the client conflict minimization on the same should be observed.

Conceptual Framework

According to Jabareen (2018) a conceptual work framework is a network interlinked concepts that together provide a comprehensive understanding of a phenomenon of phenomena. The concepts that constitute a conceptual framework support one another, articulate their respective phenomena and establish a framework specific philosophy. According to Orodho (2019) a conceptual framework describes the relationship between the research variables .Jabareen (2018) argues that a variable is a measurable characteristic that assumes different values along subjects. An independent variable is that variable which is presumed to affect or determine a dependent variable (Jabareen, 2018). The independent variables in this study are supplier development programs and supplier segmentation and how they affect the supply chain performance of manufacturing firms.

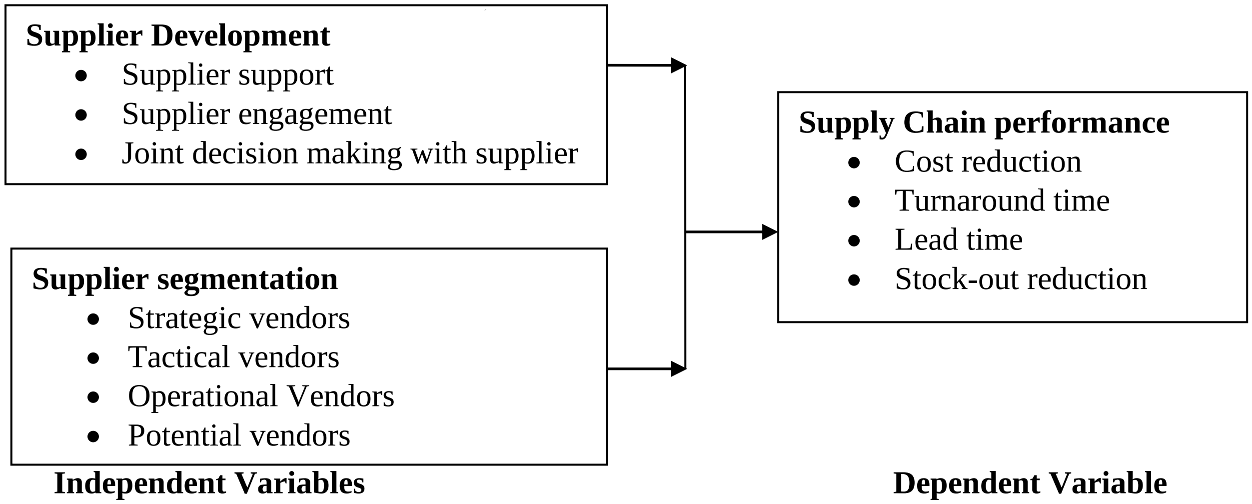

Figure 1 Conceptual Framework

Supplier Development programs

Benchmarking Public Procurement is designed to support and enhance decision-making by policymakers in order to increase private sector participation in public tender and stimulate competition, which would ultimately reflect positively on both private and public sides of public procurement. The project will help identify areas for reform and achieve more transparent, competitive and efficient public procurement systems. Benchmarking Public Procurement presents data that capture important dimensions of the quality and efficiency of public procurement systems to which business communities across the world are confronted. We discovered that the collaboration activities supported both small and medium-sized businesses and large corporations. The program increased small and medium-sized suppliers' revenue, jobs, and long-term viability; it also increased large firms' sales and increased their potential to become exporters. Furthermore, we discover that the timing of the effect differs between manufacturers and large corporations. (Chidambaranathan et al, 2019).

Product development and innovation could be employed to manage problems buying firms may experience in their supply networks. Firms that include their suppliers in the early stages of innovation projects seem to substantially outperform their peers that do not. Yet a large proportion of companies, does not include suppliers in over 90% of their new product Development projects. This is strong evidence that organizations today are increasingly implementing supplier development programs to improve supplier performance and remain competitive (Wagner, 2014).

Training in procurement is a vital aspect of giving fighting forces the ability to perform effectively in the field. Purchasing is just as important in the civilian sector. For this reason, leadership training begins with giving people the basic skills that they require to assume responsibility and to discharge whatever managerial authority may be `entrusted to them in that, if not spectacular, is at least not manifestly incompetent or catastrophically bad. For purchasing departments in manufacturing firms, training would increase the performance and/0r capabilities of the buyers and meet the buying firm’s short-and/or long-term goals (Modi &Malbert, 2017).

Supplier segmentation

Duration upon which segmentation of supplies should be made is after the delivery of goods and services at reasonable time of which should be adhered to by organizations as it contributes to maintaining a sustainable competitive edge by segmenting suppliers based on strategic, tactical and operation perspective. It is considered a building blocked good supplier management practices. It has been argue that segmentation aspects should focus on developing supplier future capabilities in product and technology development rather than just on current cost and quality services (Chakraborty & Philip, 2019).

Segmentation terms and procedures is between the buying firms and suppliers is basically and arrangement under which a contracting authority establishes with a provider of goods, works or services, the terms under which contracts subsequently can be entered into are paid for (within the limits of the agreement) when particular have been met. For the organization to ensure improvement of supply chain performance and competitive advantage, they should engage with supplier and contract terms that will not burden their cash flow or of which may lead to high amount of capital held in stock (Sanche-Rodriguez, 2019).

Segmentation is one of the many factors that can be used by a firm to influence demand for its products. According to Horne and Wachowicz (2018), firms can only benefit from segmentation of suppliers based on distinct groups. This influences performance as the higher the amount of accounts receivables and their age, the higher the finance costs incurred to maintain them. If these receivables are not collectible on time and urgent cash needs arise, a firm may result to borrowing and the opportunity cost is interest expense paid (Myers & Brealey, 2013).

Empirical Review

According to a study by Lee(2008); the impact of supplier selection criteria and supplier involvement on business performance: high –technology manufacturing equipment in manufacturing firms in Malaysia: results indicate that most commonly used criteria such as competitive pricing, product quality, delivery service and supplier capability are found to be insignificant related to manufacturing firms' performance. Only buyer-supplier fit has a positive impact on supplier performance. Nevertheless, greater emphasis should be placed on supplier involvement because the intangible criteria have significant impact on manufacturing firm's business performance. Consequently, supplier performance does not have the mediating effect on the relationship between supplier selection criteria, supplier involvement and manufacturing firms' performance. Manufacturing firms should carefully select their suppliers to enhance their competitive advantage and long-term needs.

According to Ng'ang; a (2014) on Supplier Selection Criteria and Supply Chain Performance in Non-Governmental Organizations in Kenya: he states that Trade-offs among criteria has to be made to align the final sourcing decision with Competive priorities and business plans. Sourcing location Selection is he first, and thus an important, step in the supplier selection process. Critical factors such as infrastructure, market attractiveness and cost levels are typically characteristics of regions or countries rather than of specific suppliers.

Thus, suppliers within the same area share all the location specific attributes, which avoids the need to rank these suppliers on those attributes. After determining where to source, a supplier selection decision within the chosen area can be made. Supplier selection decision must include strategic and operational Factors as well as tangible and intangible factors in the analysis. That's why decision maker can analyze the supplier selection in a Systematic and scientific approach by means of utilizing the proposed model (Ng'ang'a, 2014).

According to Wathne & Heide (2014), effectively selecting the right suppliers can result in better supplier performance. We argue that both market-focused and relationship focused strategies may be beneficial, but in different ways. Further, we contend that the interaction between these two strategies would improve supplier performance. These institutions include the legal and regulatory frameworks and their enforcement. Institutional uncertainty makes firms less confident about entering new relationships with new suppliers, because the ability to enforce contracts is an institutionally uncertain environment is hard to predict.

Although a market-focused strategy may be associated with higher contracting costs and monitoring costs, it may bestow at least three benefits achieving satisfactory supplier performance. First, using market-focused selection enables the buyer firm to seek and evaluate potential suppliers from a wider pool of capable suppliers. Second, competition mechanisms inherent in this selection strategy are helpful in finding suppliers with appropriate capabilities. Third, the adoption of a market-focused strategy would exert competitive pressures on suppliers, and in turn strengthen the bargaining power of the buyer firm. Institutions play an essential role in a market economy by supporting the effective functioning of, market mechanisms, so that firms and individuals can engage in market transactions without incurring undue costs or risks (Wagner, 2017).

According to study by Mirawati *et al*(2015) on Supplier-Contractor Partnering Impact on Construction Performance: A study on Malaysian Construction Industry, they state that for effective contracting, a long-term commitment between two or more organizations for the purpose of achieving specific business objectives by maximizing the effectiveness of each participant resources. This requires changing traditional relationships to a shared culture without regard to operational boundaries. The relationship is based on trust, dedication to common goals and understanding of each other's individual's expectations and values.

Weston and Gibson (2012), in their study on Partnering-Project Performance in U.S Army Corps Engineers, Journal of Management Engineering, revealed that partnering project performs better than those projects managed in an adversarial manner. Moreover, partnering enhance better risk management within both upstream and downstream relationships which in turn help to improve user satisfaction. Client-main contractor relationship is upstream while main contractor-subcontractor relationships are downstream.

According to a study conducted by Saad, Jones and James (2012), they highlight that project underperformance is caused by the main contractor tendency to focus on dyadic relationships between themselves and clients; neglecting the importance of subcontractors and suppliers. This is due to the financial funding and workload provided by the client. Furthermore, changes in client demands from just price to criteria like innovations, sustainability and speed require the main contractor to build a closer relationship with the subcontractors, thus emphasizing the importance and significance of managing suppliers.

In January 2015,the National Audit Office of the United Kingdom(NAO:UK) published a report (Paying Government Suppliers on Time);In March 2010 the UK government announced that departments would aim to pay 80% of undisputed invoices within 5 working days. This will be a revision of the original prompt payment commitment introduced in 2008 to pay 90% of invoices within 10 working days. Government also announced that departments would require their contractors on all new contracts to pay subcontractors within 30 days. Prompt payment is intended to improve cash flow of companies doing business with government departments, in particular the UK's 5 million small and medium-sized enterprises (SMEs).

The UK government believes a culture of late payment is preventing the UK businesses, especially SMEs, from investing in growth and fully contributing to economic recovery. SMEs generate half of the annual turnover of UK businesses, but they often lack access to credit and may get into financial difficulties because of late payment by customers: a survey in 2014 suggested that late payment will be a major factor in 1 in 5 UK corporate insolvencies(NAO:UK,2015).

Wilson (2014), states that cash flow is the lifeblood of any business. Businesses need cash to buy supplies, pay employees, service debt and invest in equipment and training; this cash usually comes from receipts for sales. However, when selling to other businesses, companies usually make sales on credit, receiving payment only after they have supplied goods or services and invoiced the customer. Payment is normally due within an agreed number of days after the invoice date. A recent survey of small businesses suggests that they most commonly seek payment in 28-30 days (73%). A further 7% require payment within 7 days, 15% between 15 & 21 days, and 5% agree payment term of more than a month.

A report by Experian (2012). O prompt Payment Code: Four years on UK's largest companies pay nine days faster highlights than when a business incurs the cost of providing goods and services upfront, being paid on time is very important. If payment is not received within the agreed payment period, the supplier incurs additional costs chasing payment. Reduced cash flow may mean planned investment in the business cannot go ahead and may prompt the need to borrow more. In extreme cases, late payment can result in a profitable company going bust and this can have a knock-on effect triggering the insolvency of other companies further down the supply chain.

Due to the rising cost of technology explained in the earlier chapter, one way manufacturing firms have attempted to reduce cost is through the implementation of an effective sourcing procedure and purchasing decision (Kumae et al., 2018). Suppliers play a vital part in helping firms to sustain their competitive advantage. Thus, buying firms are encouraged to be more careful considering the supplier dispute resolution and supplier development (Humphreys et al., 2018). It I interested to determine the effect of supplier selection criteria and supplier involvement on the manufacturing firms 'business performance while the acquiring high technology manufacturing firm equipment to stay competitive in the healthcare industry.

External integration is composed of integration is composed of integration of an organization with key suppliers and customers. External integration with supplier is defined by many researchers s the degree of co-ordination between manufacturer and its upstream partners. In addition, external integration with customers is defined as the degree of coordination between manufacturer and its downstream customers (Narasimhan & Kim, 2011; Frohlich, 2011).

The company must work closely with suppliers and customers in order to improve the supply chain performance(Narasimhan & Kim,2011).There is a high correlation between the integration with suppliers, customers and an organization's performance(Frohlich & Westbrook,2011;Rosenzweig *et al.*,2012).One approach is internet-based SCI, which has been praised in the literature. Frohlich (2011) found the following from his study of e-integration in the supply chain: a positive connection between the e-integration and performance; and internal barriers hindered e-integration more than either upstream supplier barriers, or downstream customer barriers.

RESEARCH METHODOLOGY

Research Design

The study adopted a descriptive research design. The descriptive research design is a type of research study design that is used to collect information on the current status of a person or on object (Mugenda, 2013). The descriptive research design was effective because it enables the study to collect data across a varied sample. Information is collected without altering anything in the in the area of study; also known as observational studies. It can be either qualitative or quantitative in nature. This design was preferable for this study because it enables the researcher to undertake a breadth of observations on phenomenon under study. Besides, it provided accurate descriptive analysis of the characteristics of the population from which the study sample is drawn to make inferences about it . This study sought to analyze the effects of supplier appraisal on supply chain performance in manufacturing firms in Kenya.

Target Population

According to Orodho, (2012) target population is a well-defined or specified set of people, group of things, households, firms, services, elements or events which are being investigated. Target population should suit a certain specification, which the research is studying and the population should be homogenous. Mugenda and Mugenda, (2013), explain that the target population should have some observable characteristics, to which the research intends to generalize the results of the study. For purpose of this study the target population was stratified through top management level, middle level managers, low level management and non-management. The study focused most on building and constructions firm which was also used to represent all the targeted populations in the study. Location within a cluster can provide superior or lower cost access to specialized inputs such as water, electricity, agglomeration and roads connectivity. Given the inherent benefits of clusters, however, forces encouraging local supplier development and upgrading are strong, and constituent firms have an incentive to encourage entry of new suppliers or local investments by distant suppliers (Porter, Michael E. Economic 2020). The study populations for this study will be 420 employees of manufacturing firms in Nairobi.

Table 3.1: Target Population

Firms	Number of firms	percentage
. Building & construction	20	5
Energy	50	12
Leather	43	11
Paper	52	13
Glass	45	11
plastic firms	37	9
Textile	52	13
Motors	15	4
Food	65	16
Pharmaceutical	26	6
Total	**405**	**100**

Sampling Frame

A sampling frame is a comprehensive list of all sampling units, which a sample can be selected (Kothari, 2012). Sampling frame was the list of 405 employees of Manufacturing Firms in

Nairobi, from where the study picked the sample size. The study majorly focused at building and construction firms.

Sampling Technique

According to Kothari (2012), sampling is a procedure through which some elements are selected from the population to be representative of the whole group. A study that is too large will waste scarce resources and could expose more participants than necessary to any related risk. Thus an appropriate determination of the sample size used in a study is a crucial step in the design of a study. Sampling size was the list of all 405 employees, from where the respondents were selected. The study used the Yamane (1967) formula to arrive at the sample size. The selection formula is as follows:

n= (N/ (1+N (e)^{2}

Where n= the required sample size

N = is the Target Population (405 employees)

e = accuracy level required. Standard error = 5%

Sample calculation

n=405/ (1+405 (0.05)2

n= 2/ 2.0125

n=201

n=201 Respondents

Therefore, using Yamane (1967) formula, the sample size was 201 out of 405 employees, which represents 50% of the target respondents. The study used stratified random sampling in selection of 201 employees, Random sampling frequently minimizes the sampling error in the population. This in turn increases the precision of any estimation methods used (Cooper & Schindler, 2013). Ngechu (2014) emphasizes the importance of selecting a representative sample by use of a sampling frame. From the sampling frame, the required number of subjects, respondents, elements or firms is selected in order to make a sample. Stratified random sampling technique was used to select the study respondents. The respondents of the study were stratified in to four strata's. The sample size of the study respondents was 201 respondents.

Data Collection Instruments

The questionnaire was the selected instrument or tool for data collection for the study. According to Chandran (2011), a questionnaire is defined as a measuring tool whose main purpose is to communicate to the researcher what is required and to elicit desired response in terms of empirical data from respondents in order to achieve the desired objectives. According to Kothari (2012) structured questionnaires are best suited for descriptive study as it is easily applied and requires less skill.

The questionnaires were administered to each member of the sample population. The questionnaires were developed with reference to the research objectives aimed at answering the research questions. The questionnaire had both open and close-ended questions. The close-ended questions provides more structured responses to facilitate tangible recommendations. The closed ended questions will be used to test the rating of various attributes and this helps in reducing the number of related responses in order to obtain more varied responses. The open-ended questions provided additional information that may not have been captured in the close-ended questions.

Pilot Test

The study carried out a pilot study to pretest and validate the questionnaire. Cronbach's alpha methodology, which is based on internal consistency, was used. Cronbach's alpha measures the average of measurable items and its correlation. This is in line with a qualitative research design methodology employed in this research project. The aim of the pilot study was to test the reliability of the questionnaires. The researcher selected a pilot group of 20 individuals from the target population to test the reliability of the research instrument, which represent 10% of the study population. The pilot data was not included in the actual study.

Data Analysis and Presentation

Quantitative data collected was analyzed by the use of descriptive statistics using SPSS (Version, 23) and presented through percentages, means, standard deviations and frequencies. The information was displayed by use of bar charts, graphs and pie charts and in prose-form. This was done by tallying up responses, computing percentages of variations in response as well as describing and interpreting the data in line with the study objectives and assumptions through use of SPSS (Version 23) to communicate research findings. Content analysis was used to test data that is qualitative in nature or aspect of the data collected from the open ended questions.

The study conducted a correlation analysis to establish the strength of the relationship between the independent and the dependent variable. Correlation analysis helped to detect any chance of multicollinearity. Correlation value of 0 shows that there is no relationship between the dependent and the independent variables. On the other hand, a correlation of ±1.0 means there is a perfect positive or negative relationship (Hair et al., 2010). The values were interpreted between 0 (no relationship) and 1.0 (perfect relationship). The relationship was considered small when $r = \pm0.1$ to ±0.29, while the relationship was considered medium when $r = \pm0.3$ to ±0.49, and when $r = \pm0.5$ and above, the relationship was considered strong. Multiple regressions were done to analyses effects of supplier appraisal on supply chain performance of manufacturing firms in Kenya. Data was presented using tables, figures and pie charts. In addition, a multiple regression was used to measure the quantitative data and was analysed using SPSS too.

DATA ANALYSIS AND FINDINGS

Descriptive statistics

Supplier Development Programs and Firm Performance

The first specific objective of the study was to establish how supplier development programs affect performance of manufacturing firms in Nairobi County, Kenya. The respondents were requested to indicate their level of agreement on various statements relating to supplier development programs and performance of manufacturing firms in Nairobi County, Kenya. A 5 point Likert scale was used where 1 symbolized strongly disagree, 2 symbolized disagree, 3 symbolized neutral, 4 symbolized agree and 5 symbolized strongly agree. The results were as presented in Table 4.1.

From the results, the respondents agreed that their supplier development program adequately supports their suppliers to improve their performance. This is supported by a mean of 3.943 (std. dv = 0.986). In addition, as shown by a mean of 3.926 (std. dv = 0.840), the respondents agreed that they actively engage with their suppliers to identify areas for improvement and innovation. Further, the respondents agreed that joint decision-making processes with their suppliers are effectively utilized to enhance overall performance. This is shown by a mean of 3.846 (std. dv = 0.879). The respondents also agreed that their supplier development initiatives have significantly contributed to mutual success and growth. This is shown by a mean of 3.831 (std. dv = 0.904). As shown by a mean of 3.816 (std. dv = 0.789), the respondents agreed that collaborative efforts with their suppliers in decision-making have led to improved efficiency and quality outcomes.

Table 4. 1: Supplier Development Programs and Firm Performance

	Mean	Std. Dev.
Our supplier development program adequately supports our suppliers to improve their performance	3.943	0.986
We actively engage with our suppliers to identify areas for improvement and innovation.	3.926	0.840
Joint decision-making processes with our suppliers are effectively utilized to enhance overall performance.	3.846	0.879
Our supplier development initiatives have significantly contributed to mutual success and growth.	3.831	0.904
Collaborative efforts with our suppliers in decision-making have led to improved efficiency and quality outcomes.	3.816	0.789
Aggregate	**3.848**	**0.897**

Supplier Segmentation and Firm Performance

The fourth specific objective of the study was to establish how supplier segmentation influence performance of manufacturing firms in Nairobi County, Kenya. The respondents were requested to indicate their level of agreement on various statements relating to supplier segmentation and performance of manufacturing firms in Nairobi County, Kenya. A 5 point Likert scale was used where 1 symbolized strongly disagree, 2 symbolized disagree, 3 symbolized neutral, 4 symbolized agree and 5 symbolized strongly agree. The results were as presented in Table 4.2.

From the results, the respondents agreed that their strategic vendors consistently align with our long-term business goals and objectives. This is supported by a mean of 3.891 (std. dv = 0.865). In addition, as shown by a mean of 3.818 (std. dv = 0.945), the respondents agreed that their tactical vendors effectively support their day-to-day operational needs. Further, the respondents agreed that their operational vendors consistently meet our quality and delivery requirements. This is shown by a mean of 3.808 (std. dv = 0.611). The respondents also agreed that they believe their potential vendors have the capacity and capability to become strategic partners in the future. This is shown by a mean of 3.721 (std. dv = 0.908). As shown by a mean of 3.661 (std. dv = 0.776), the respondents agreed that the current vendor base contributes positively to their company's performance and competitiveness.

Table 4. 2: Supplier Segmentation and Firm Performance

	Mean	Std. Deviation
Our strategic vendors consistently align with our long-term business goals and objectives.	3.891	0.865
Our tactical vendors effectively support our day-to-day operational needs.	3.818	0.945
Our operational vendors consistently meet our quality and delivery requirements.	3.808	0.611
We believe our potential vendors have the capacity and capability to become strategic partners in the future.	3.721	0.908
Overall, our current vendor base contributes positively to our company's performance and competitiveness.	3.661	0.776
Aggregate	**3.765**	**0.758**

Inferential Statistics

Inferential statistics in the current study focused on correlation and regression analysis. Correlation analysis was used to determine the strength of the relationship while regression analysis was used to determine the relationship between dependent variable (performance of manufacturing firms in Nairobi County, Kenya) and independent variables (supplier development programs and supplier segmentation).

Correlation Analysis

The present study used Pearson correlation analysis to determine the strength of association between independent variables (supplier development programs and supplier segmentation) and the dependent variable (performance of manufacturing firms in Nairobi County, Kenya). Pearson correlation coefficient range between zero and one, where by the strength of association increase with increase in the value of the correlation coefficients.

Table 4. 3: Correlation Coefficients

		Firm Performance	Supplier Development Programs	Supplier Segmentation
Firm Performance	Pearson Correlation	1		
	Sig. (2-tailed)			
	N	184		
supplier development programs	Pearson Correlation	.826**	1	
	Sig. (2-tailed)	.002		
	N	184	184	
supplier segmentation	Pearson Correlation	.871**	.278	1
	Sig. (2-tailed)	.000	.076	
	N	184	184	184

The results revealed that there is a very strong relationship between supplier development programs and performance of manufacturing firms in Nairobi County, Kenya (r = 0.826, p value =0.002). The relationship was significant since the p value 0.002 was less than 0.05 (significant level).The findings are in line with the findings of Wenbo and Qin (2020) that there is a very strong relationship between supplier development programs and firm performance.

The results also revealed that there was a very strong relationship between supplier segmentation and performance of manufacturing firms in Nairobi County, Kenya (r = 0.871, p value =0.000). The relationship was significant since the p value 0.000 was less than 0.05 (significant level). The findings are in line with the results of Otim (2017) who revealed that there is a very strong relationship between supplier segmentation and firm performance.

Regression Analysis

Multivariate regression analysis was used to assess the relationship between independent variables (buyer supply integration and supplier development programs, supplier segmentation) and the dependent variable (performance of manufacturing firms in Nairobi County, Kenya)

Table 4.3: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.897	.805	.806	.10428

a. Predictors: (Constant), supplier development programs, supplier segmentation

The model summary was used to explain the variation in the dependent variable that could be explained by the independent variables. The r-squared for the relationship between the independent variables and the dependent variable was 0.806. This implied that 80.6% of the variation in the dependent variable (performance of manufacturing firms in Nairobi County, Kenya) could be explained by independent variables (supplier development programs, supplier segmentation).

Table 4. 4: Analysis of Variance

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	141.081	4	35.270	870.86	.000[b]
	Residual	7.254	179	.0405		
	Total	148.335	183			

a. Dependent Variable: performance of manufacturing firms
b. Predictors: (Constant), supplier development programs, supplier segmentation

The ANOVA was used to determine whether the model was a good fit for the data. F calculated was 870.86 while the F critical was 2.422. The p value was 0.000. Since the F-calculated was greater than the F-critical and the p value 0.000 was less than 0.05, the model was considered as a good fit for the data. Therefore, the model can be used to predict the influence of supplier development programs, supplier segmentation on performance of manufacturing firms in Nairobi County, Kenya.

Table 4.5: Regression Coefficients

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	0.239	0.061		3.918	0.000
	supplier development programs	0.357	0.098	0.356	3.643	0.002
	supplier segmentation	0.375	0.099	0.376	3.788	0.001

a Dependent Variable: Performance of manufacturing firms

The regression model was as follows:

$Y = 0.239 + 0.357X_1 + 0.375X_2 + \varepsilon$

The results revealed that supplier development programs has significant effect on performance of manufacturing firms in Nairobi County, Kenya, β1=0.357, p value= 0.002). The relationship was considered significant since the p value 0.002 was less than the significant level of 0.05. The findings are in line with the findings of Wenbo and Qin (2020) that there is a very strong relationship between supplier development programs and firm performance.

In addition, the results revealed that supplier segmentation has significant effect on the performance of manufacturing firms in Nairobi County, Kenya, β1=0.375, p value= 0.001). The relationship was considered significant since the p value 0.001 was less than the significant level of 0.05. The findings are in line with the results of Otim (2017) who revealed that there is a very strong relationship between supplier segmentation and firm performance.

Conclusions

The study concludes that supplier development has a significant effect on performance of manufacturing firms in Nairobi County, Kenya. The study findings revealed that supplier support, supplier engagement and joint decision making with supplier influence performance of manufacturing firms in Nairobi County, Kenya.

The study also concludes that supplier segmentation has a significant effect on performance of manufacturing firms in Nairobi County, Kenya. The study findings revealed that strategic vendors, tactical vendors, operational Vendors and potential vendors influence performance of manufacturing firms in Nairobi County, Kenya.

Recommendations

The study recommends that the management should establish structured supplier development programs aimed at enhancing the capabilities and capacity of key suppliers. Provide training, resources, and technical assistance to support their growth and improvement initiatives. In addition, create channels for ongoing communication and collaboration to provide suppliers with the necessary support and resources. This may include offering guidance on process improvement, technology adoption, and access to financing or mentorship programs.

Allocate dedicated resources and attention to strategic vendors who play a critical role in the manufacturing firm's supply chain. Establish long-term partnerships, align goals, and collaborate closely on strategic initiatives to drive mutual growth and success. In addition, implement strategies to optimize relationships with tactical vendors, who provide essential goods and services to support day-to-day operations. Streamline processes, negotiate favorable terms, and ensure reliability and responsiveness to meet short-term needs effectively.

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