International Journal of Management and Business Research

IJMBR **Volume 5, Issue 2, pg. 259-270, 2023**

ELECTRONIC PROCUREMENT PRACTICES AND SUPPLY CHAIN PERFORMANCE OF LARGE MANUFACTURING FIRMS IN NAIROBI COUNTY, KENYA

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ABSTRACT

Procurement is an enabler of commercial practices in both developed and developing countries. The effectiveness of the process however determines how beneficial and impactful it turns to the economy. It has been argued that e-procurement serves to enhance the procurement performance in both private and public institutions. However, in Kenya, despite the adoption of e-procurement in most of the manufacturing firms, their supply chain performance still remains poor. It is against this background that the study sought to investigate the influence of e-procurement practices on the supply chain performance in large manufacturing firms in Nairobi. This study sought to examine the influence e-sourcing on performance of the supply chain in large manufacturing firms in Nairobi and to establish the influence of e-payment on performance of the supply chain in large manufacturing firms in Nairobi. The study adopted descriptive research design and the target population comprised of 354 large manufacturing firms in Nairobi. Power analysis was used to identify the sample size of 187 procurement officials from the large manufacturing firms in Nairobi who were picked through simple random sampling. Structured questionnaires were utilized to collect the data which was analysed through descriptive and inferential statistics. The findings were presented in the form of tables, pie-charts and bar-graphs. The study concludes that e-sourcing has a positive and significant effect on performance of the supply chain in large manufacturing firms in Nairobi, Kenya. The study also concludes that e-payment has a positive and significant effect on performance of the supply chain in large manufacturing firms in Nairobi, Kenya. Based on the findings, this study recommends that the management of manufacturing firms in Nairobi, Kenya should continue embracing e-selection, e-mailing and e-awarding. In addition, the management of manufacturing firms in Nairobi, Kenya should continue embracing e-Bidding, e-tracking and e-contracting.

Key Words: Electronic Procurement Practices, E-Sourcing, E-Payment and Performance of Large Manufacturing Firms

Background of the Study

E-procurement has varying definitions, but its general one is that it is the application of Information Technology in the undertaking of, majorly purchasing of goods and services. According to an updated study by Wu *et al*., (2018), Electronic procurement practices involve application of information and technology (IT) which comes at the completion of the supply transaction. Mphele & Robert (2020) describes Electronic Procurement Practices as a form of trading that utilizes the internet platform such ERP and electronic data interchange, a process that has brought advantages that have earned its popularity due to its association with reduction transaction processes and cost cutting. Since procurement is an international practice that is cross border, e-procurement immensely assists in breaking trade impediments, does away with costs such as agency fee and ultimately increases profits in supply chains (Talluri, 2016).

E-procurement can be categorized into two models: activity based models and organizational based models (Talluri, 2016). The activity based models are, the direct procurement system (DPS) which used in procurement of the core raw materials for manufacturing companies and indirect procurement system (IPS) to procure the supports services that manufacturing companies need to produce their products. The second model of e-procurement is the organizational model which sub divides into centralized model that is managed from the manufacturing company's headquarters and decentralized model that allows different business units and different locations to make independent purchases according to their needs. According to Tornatzky and Fleischer (2016) the structure and process of e-procurement is made of the following segments; demand analysis, which is carried out by demand estimation tools like e-sourcing. The second segment in the e-sourcing structure is the budget definition that determines how much a company is willing to spend on purchases from a specific supplier. The third process needs notification which notifies the procurement team on what raw materials are required and what is in stock. The next process is sourcing which is divided into four parts; supplier scouting that is done with the help of online scouting tools, supplier qualification, request for proposal and tendering. After tendering the next process is contracting and ordering and finally supply monitoring. E-procurement has a positive influence on the companies' ability to follow up on services and goods, their bids and ensure sufficient information is acquired for better pricing procedures. E-procurement also influences product development turn-around time and this is because it tremendously improved information sharing.

Acknowledgment of e-procurement frameworks by representatives working in the state companies is imperative to guarantee improved hierarchical viability (Subramaniam and Shaw, 2018). Despite the fact that a rich group of writing exists with respect to the hierarchical appropriation choices of e-procurement frameworks and their effect on authoritative execution, little is anyway thought about the variables that influence the acknowledgment of these frameworks by representatives working in associations. Accordingly, the accompanying components have been recognized: seen convenience, saw usability, representative association, dependability, modified preparation, seller backing and the board support (Rahim, 2018).

Open obtainment of goods and services is viewed as extremely instrumental in the advancement of the Kenyan economy. Its significance has been on the expansion since the years 2004 and 2014, where it represented 9% and 11% of the GDP, separately (Kamotho, 2018: Malela, 2016; PPOA, 2018). Since its implementation E-procurement in Kenya is characterized by the following practices; the online advertisement of tenders which has helped improve transparency in state tenders and opens up opportunities to all suppliers to know what they should supply and where and when. The second practice is the establishment of websites to manage the procurement process effectively tracking all the bids and the suppliers. Lastly, another common E-procurement practice

locally is online specification of the goods and services to be supplied which helps the suppliers establish what they can supply. According to Korir *et al* (2015) an emerging local trend locally is the uptake of e-procurement software. Companies like Kenya Power have adopted Precoro, a software that manages the procurement process and eradicates many repetitive and manual actions.

Statement of the Problem

Procurement stands to be one of the major practices that largely contribute to business growth and development in the manufacturing sector and its improvement is needed in order to further facilitate the growth. Kenya, both public and private companies count on procurement processes as the major source of their efficiency and effectiveness in operations which translate to performance (Kamotho, 2018). The manufacturing sector for instance heavily relies on the procurement process to meet the customer needs and gain competitive advantage. However, according to (Malela, 2016; Miheso, 2013; Makau, 2018) there are persistent complaints among stakeholders over poor procurement performance, which increased by 23%. These complaints are characterized by long procurement lead-time; poor service delivery; noncompliance with procurement policy; as well inflated cost of acquiring goods and services. Malela (2016) argues these are the challenges in procurement in large manufacturing firms that implementation of e-procurement is supposed to solve.

E-procurement through e-ordering solves the challenge of responding to customers' demands faster for large manufacturing companies by need notification in the procurement website or through procurement applications which allow the company to plan on either increasing or decreasing production, transporting and delivery of product. According to Malela (2016) manufacturing companies that make use of e-ordering tools on e-procurement websites or applications reported 30% increase their on-time delivery of products to their customers. E-procurement solves the second major challenge of reducing inventory by demand shaping manufacturing companies educate and dictate terms with customers through website publications, and email communications on when they can expect their orders to be delivered, Yusuf (2017). Lastly, e-procurement through detailed and recorded communication solves the problem of reducing inventory by 25% through enhancing supplier collaboration and development by enabling large manufacturing companies to choose supply chain partners who also use quality manufacturing business practices which promotes higher trust levels between the two parties and greatly reduces overhead costs Heaney (2018). According to a study by Heaney (2018) 10 out 47 manufacturing companies that did not use e-procurement websites or applications to vet suppliers launched complaints against their suppliers for late delivery and poor quality materials. This study therefore sought to explain how the implementation of e-procurement such as practices e-tendering and e-ordering have influenced the supply chain performance in large manufacturing companies in Nairobi: the study also explores the challenges the e-procurement practices will solve for big manufacturing companies and how they have enhanced procurement processes in large manufacturing companies.

General Objective

The main aim of this study was to establish the influence of electronic procurement on supply chain performance of the large manufacturing firms in Nairobi, Kenya.

Specific Objectives

i. To analyze the influence of e-sourcing on the performance of the supply chain in large manufacturing firms in Nairobi, Kenya.

ii. To establish the influence of e-payment on the performance of the supply chain in large manufacturing firms in Nairobi, Kenya.

Theoretical Review

Coordination theory

Coordination theory states that dependencies exist among activities and need to be managed properly. This theory has been used to analyse dependencies among organizations, coordination of product information in the supply chain and bundling of digitized logistics activities (Haozhe, Daugherty & Landry, 2019). Organizational practices such as supply chain management and collaboration are coordinated through the networks of communications and relationships that exist among organizational actors, and the strength of those networks predicts superior performance (Ossowski & Omicini, 2020). Large manufacturing companies need to have good linkages with their suppliers and clients to ensure continued financial wellbeing and efficiency in meeting and surpassing their customers' needs.

Coordination theory provides that aligning the traditional activities in procurement departments with the new technology in E-procurement will lead to improved results of reducing wastage and improving companies' financial well-being. According to Govindan, Popiuc and Diabat (2019), adequate investigation of internal and external coordinating mechanisms in procurement departments can be increased to establish suitable linkages that will improve performance. E-procurement enables detailed communication and feedback among the members of the procurement department which increase the efficiency of the supply chain. Additionally, E-procurement enhances external cooperation amongst organizations like suppliers and customers or contracted delivery companies through e-ordering and e-tendering. Enhanced cooperation leads to betterment of production and inventory efficiency.

Internal cooperation between departments involved in procurement and production leads to improved performance of the supply chain as information will be shared and systems will work together to increase efficiency. It has been found that large manufacturing companies with well-developed internal and external linkages perform better than their counterparts that do not have good internal and external linkages. Therefore, showing coordination theory applies when ensuring that linkages within the manufacturing industry help increase efficiency in their supply chain processes (Hunt & Davis, 2017).

Value Chain Theory

The theory of value chain was founded by Michael Porter in 1985 in his book Competitive advantage; Creating & Sustaining superior performance. Porter's value chain theory suggests that a company's business activities are divided into categories; the primary activities and support activities (Christopher, 2017). The primary activities are important for value addition and creating a competitive advantage over other competitors in the market. Porter lists the following as a company's primary activities; inbound logistics, operations, outbound logistics, marketing and sales and services. The value chain theory describes the support activities as activities that help the primary activities be more efficient and suggests improving the efficiency of one of the support activities increases it benefits at least one of the five primary activities.

Porter list procurement amongst the support activities alongside technological development, human resource management and infrastructure that allow the business to operate efficiently and therefore improve their financial wellbeing. E-procurement is a product of improvements in both procurement and technological development which means its uptake and integration into the value chain of manufacturing companies will increase efficiency of the primary activities. Increase in

the efficiency of primary activities leads to proper reduction of inventory and ease in delivering products to customers and tracking and monitoring of the goods.

Porter's value chain theory links with the study as it establishes a company needs both its primary and support activities to be able to obtain raw materials, produce good quality products and deliver them to their customers on time. Large manufacturing companies especially need to ensure that their support activities are working as they should to facilitate their core functions and procurement is a one of the major support activities inn manufacturing companies. When a large manufacturing company applies good procurement practices it improves the overall operations of the company by ensuring that raw materials are on time and in the right quantity and quality for processing. By adopting E-procurement large manufacturing companies are able to benefit from e-tendering and e-ordering which can be verified and analysed to reduce chances of working with unreliable suppliers which ensures that the companies have the right raw material for production and monitoring the delivery to customers.

Conceptual Framework

A conceptual framework is a concise description of the phenomenon under study accompanied by a graphical or visual depiction of the major variables of the study (Kinsly, 2020). According to Young (2017) conceptual framework is a diagrammatic representation that shows the relationship between dependent variable and independent variables. This study can be conceptualized as shown in Figure 1.

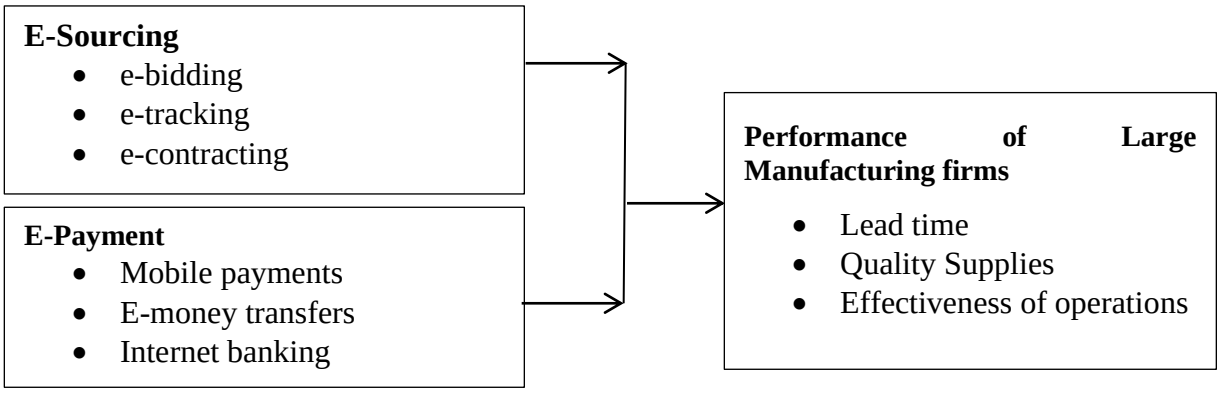

Figure 1 Conceptual Frame work

Electronic Sourcing

E-Sourcing has turned into a key acquisition device, enabling organizations to interface, screen and waitlist providers, independent of whether they are available at a similar area or in the meantime frequently enabling classification chiefs to verify preferred results over from conventional exchanges. According to Farrington and Lysons (2016), e-sourcing alludes to web empowered applications and choice help apparatuses that encourage associations among purchasers and providers using on the web arrangements, online sales, invert barters and comparative instruments. E-Sourcing is particularly connected with online closeouts, which empower costs to decrease by presenting the component of rivalry. They are noticeable, unmistakably organized and make the acquisition procedure straightforward (Engelbrecht-Wiggans and Katok, 2017).

E-Sourcing can get enormous upgrades straightforwardness and transparency among purchasers and providers. The frameworks give an entrance through which providers can see every delicate open door from a provider, with due dates, their current statuses and the ultimate results all

obviously exhibited. This is improved through quick correspondence and viable input by the framework which keeps the providers refreshed (Canan, Minkyun and Nallan, 2015). The decrease in geographic limits e-sourcing encourages, alongside the reasonable distribution of tenders, enables providers to proficiently participate in more chances. This brings the potential for purchasers to create associations with organizations whose size or closeness may have recently been a hindrance (Hearnshaw and Wilson, 2020).

Electronic Payment

With the present payment techniques, focus has moved to effectiveness, lean or without a moment to spare inventories, redistributing, supply base decrease, bringing together conveyance, more items with quicker dispatches, minimal effort nation sourcing and production network globalization in exceptionally unpredictable markets. Organizations need e-payment now like never before and the rate of progress expected of the obtainment capacity to keep pace with business requests keeps on quickening. Barbara and Maxfield (2018) saw that, to keep pace with rivalry and convey against vital goals, acquirement must utilize best in class advances including e-payment. As per Herzberg (2017), e-payment is the way toward making every single money related activity utilizing electronic gadgets, for example, PCs, cell phones or tablets through the web. E-payment is done using various strategies like credit or debit card payments or bank exchanges. The most prevalent and normal strategy is charge cards (Murthy, 2018).

The National Automated Clearing Houses of American (NACHA) is a group in the United States which creates working standards and practices for the Automated Clearing House (ACH) Network (NACHA 2015a). It likewise bolsters the appropriation of a wide scope of electronic payment frameworks, including money related EDI, electronic checks and electronic advantages exchange (EBT). The ACH Network joins United States store monetary organizations to the across the nation payment/accumulation framework (NACHA 2015b). An ACH organize is an electronic group preparing framework, as opposed to exchanges being settled on a for every exchange premise. As indicated by the US Federal Reserve, the computerized clearinghouse electronic instalment conveyance framework it utilizes is principally utilized for pre-approved repeating payments, for example, finance, payments to providers, government managed savings, protection and utilities (US Federal Reserve 2017a).

Empirical Review

Electronic Sourcing

Hsiao and Teo (2019) explored the delivery of e-sourcing promises with an aim of examining how to implement e-sourcing effectively in Asia. Findings revealed the following e-sourcing promises: procurement cost reduction, enhanced customer service level, procurement policy compliance and procurement reduced lead-time. Further, they identified a three-stage model for implementing e-procurement. These include: assessing e-sourcing matches with a firm's purchasing practices; determining operational and strategic objectives of the firm; and finally overcoming key barriers most likely to discourage buyers and suppliers.

Makau (2018) did a study to explore the problems encountered on the adoption of electronic sourcing in the public sector in Kenya. The study findings revealed that most agencies did not have the IT infrastructure to carry out e-sourcing; government policies on technology does not fully support e-sourcing adoption; most employees perceive e-sourcing as a threat to their jobs; and lack of e-sourcing knowledge.

Electronic Payment

The study by Vaidya *et al.* (2016) aimed at investigating the critical success factors (CSFs) that influence e-payment implementation success in Australia. Findings revealed that CSFs are divided into three areas 'perspectives', namely: procurement organization and management area, CSFs identified in this area include: top management support, user uptake and training, change management, project management and supplier adoption; systems and technology area, CSFs identified in this area include: security and authentication, technological standards and system integration; procurement practices and processes, CSFs identified in this area include: change management, re-engineering of the process, performance measurement and e-payment implementation strategy. This study was anchored on diffusion-based models of innovation adoption in relation to e-commerce/e-Business.

Orina (2017) examined the e-payment availability factors in Kenya's open part organizations with a point of deciding the degree of e-payment levels in open establishments in Kenya. The investigation established that e-payment in the open area has been implemented, though not fully. The study also found that procurement performance of firms that have adopted e-payment has been significantly enhanced. Further, it was showed that Integrated Financial Management Information System (IFMIS) and SAP software are majorly the only ERPs used by public institutions to procure online

RESEARCH METHODOLOGY

This study used quantitative descriptive research that collected quantifiable information from the sample and conduct a statistical analysis. A graphic research configuration was received to legitimize the connection between the autonomous and ward factors. This plan alludes to a lot of strategies and methodology that depict factors. This design was used because it facilitates the smooth sailing of the various research operations, thereby making research as efficient as possible hence yielding maximum information in regards to the topic area. The target population for this study was the manufacturing companies in Nairobi, Kenya. As of December (2020), there were 1012 large manufacturing companies in Nairobi (KAM, 2020). Specifically, the study targeted procurement officials in these companies.

This study employed simple random sampling techniques to select the large manufacturing companies that are part of the target population. To get a representative sample for those who have enrolled for table Coopper and Schidler's formula was adopted (Coopper and Schidlers, 2016). A 95% confidence level and P = 0.05 was chosen in view of social science nature of the study. Therefore, 187 procurement officers were sampled using simple random sampling. The choice of this sampling technique is preferred as it gives each item in the population an equal probability of being selected. The study relied on primary data which was collected using a structured questionnaire. A questionnaire is a document comprising a set of questions, which is sent to a large number of respondents with a view to obtaining their input and opinions on the topic of the research study (Beer, 2018). The examination targeted 10% of the total sample size which is 19 members for the pilot and the outcomes won't be incorporated into the primary investigation. A pilot is done to eliminate possible flaws in data collection procedures including instructions, help in operationalization of the independent variables and to identify unclear or ambiguous items in the questionnaire.

This section discusses the techniques that were used to analyze data and test the variables. Data was analyzed qualitatively and quantitatively. Qualitative data was analyzed using content analysis whereas quantitative data was analysed using Descriptive statistics analysis which was done by measuring central tendencies which include frequencies, implies, standard deviations and relapse.

Elucidating insights were finished utilizing the Statistical Package for Social Sciences (SPSS). Inferential insights which incorporate relationship (r) and relapse (R2) using Multiple Linear Regression model were utilized to build up the noteworthiness of the autonomous factors on the needy variable. The discoveries were introduced utilizing tables and outlines.

PRESENTATION, ANALYSIS AND INTERPRETATION OF DATA

Descriptive Statistics Analysis

E-Sourcing and the Performance of the Supply Chain in Manufacturing Firms

The fist specific objective of the study was to analyze the influence of e-sourcing on the performance of the supply chain in large manufacturing firms in Nairobi, Kenya. The respondents were requested to indicate their level of agreement on e-sourcing and the performance of the supply chain in large manufacturing firms in Nairobi, Kenya. The results were as shown in Table 1

From the results, the respondents agreed that the advertisement of bids for the contracts in their organization is done through online platforms. This is supported by a mean of 3.996 (std. dv = 0.865). In addition, as shown by a mean of 3.819 (std. dv = 0.945), the respondents agreed that their organization emphasizes on the use of electronic means when the suppliers are placing their bids. Further, the respondents agreed that orders in their organization are tracked through online and technology based platforms. This is shown by a mean of 3.798 (std. dv = 0.611).

The respondents also agreed that the award of contracts is done through internet based communication procedures. This is shown by a mean of 3.731 (std. dv = 0.908). With a mean of 3.711 (std. dv = 0.776), the respondents agreed that the management has put key measures to ensure e-sourcing is adopted in respective departments for transparency and effectiveness. The respondents agreed that through e-sourcing procurement is appropriately and effectively carried out in their organization to vet the credibility of the suppliers. This is shown by a mean of 3.675 (std. dv = 0.897).

Table 1: E-Sourcing and the Performance of the Supply Chain

	Mean	Std. Dev.
The advertisement of bids for the contracts in our organization are done through online platforms	3.996	0.865
Our organization emphasizes on the use of electronic means when the suppliers are placing their bids	3.819	0.945
Orders in our organization are tracked through online and technology based platforms	3.798	0.611
The award of contracts is done through internet based communication procedures	3.731	0.908
The management has put key measures to ensure e-sourcing is adopted in respective departments for transparency and effectiveness	3.711	0.776
Through e-sourcing procurement is appropriately and effectively carried out in our organization to vet the credibility of the suppliers	3.675	0.897
Aggregate	**3.732**	**0.841**

E-Payment and the Performance of the Supply Chain in Manufacturing Firms

The second specific objective of the study was to establish the influence of e-payment on the performance of the supply chain in large manufacturing firms in Nairobi, Kenya. The respondents were requested to indicate their level of agreement on various statements relating to e-payment

and the performance of the supply chain in large manufacturing firms in Nairobi, 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 2.

From the results, the respondents agreed that they have embraced mobile payments such as MPESA which are more convenient and effective. This is supported by a mean of 4.168 (std. dv = 0.905). In addition, as shown by a mean of 3.959 (std. dv = 0.885), the respondents agreed that the management has embraced money transfers through electronic based mechanisms. Further, the respondents agreed that internet banking methods are emphasized by the management to be adopted by the departments and the suppliers. This is shown by a mean of 3.920 (std. dv = 0.605).

The respondents agreed that through e-payments the value for money is achieved while at the same time ensuring transparency. This is shown by a mean of 3.915 (std. dv = 0.981). The respondents agreed that the suppliers are encouraged to embrace non-cash transactions for efficiency and accountability. This is supported by a mean of 3.911 (std. dv = 0.873). In addition, as shown by a mean of 3.897 (std. dv = 0.786), the respondents agreed that electronic payment facilitates transparency and accountability

Table 2: E-Payment and the Performance of the Supply Chain

	Mean	**Std. Dev.**
We have embraced mobile payments such as MPESA which are more convenient and effective	4.168	0.905
The management has embraced money transfers through electronic based mechanisms	3.959	0.885
Internet banking methods are emphasized by the management to be adopted by the departments and the suppliers	3.920	0.605
Through e-payments the value for money is achieved while at the same time ensuring transparency	3.915	0.981
The suppliers are encouraged to embrace non-cash transactions for efficiency and accountability	3.911	0.873
Electronic payment facilitates transparency and accountability	3.897	0.786
Aggregate	**3.890**	**0.867**

Correlation Analysis

The present study used Pearson correlation analysis to determine the strength of association between independent variables (e-sourcing and e-payment) and the dependent variable (the performance of the supply chain in large manufacturing firms in Nairobi, Kenya) dependent variable.

Table 3: Correlation Coefficients

		Firm Performance	**E-Sourcing**	**E-Payment**
Firm Performance	Pearson Correlation	1		
	Sig. (2-tailed)			
	N	276		
E-Sourcing	Pearson Correlation	.856**	1	
	Sig. (2-tailed)	.001		
	N	176	176	
E-Payment	Pearson Correlation	.859**	.189	1
	Sig. (2-tailed)	.000	.081	
	N	176	176	176

The results revealed that there is a very strong relationship between e-sourcing and the performance of the supply chain in large manufacturing firms in Nairobi, Kenya (r = 0.856, p value =0.001). The relationship was significant since the p value 0.001 was less than 0.05 (significant level). The findings conform to the findings of Hsiao and Teo (2019) that there is a very strong relationship between e-sourcing and firm performance.

The results also revealed that there was a very strong relationship between e-payment and the performance of the supply chain in large manufacturing firms in Nairobi, Kenya (r = 0.859, 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 Vaidya *et al.* (2016) who revealed that there is a very strong relationship between e-payment and firm performance

Regression Analysis

Multivariate regression analysis was used to assess the relationship between independent variables (e-sourcing and e-payment) and the dependent variable (the performance of the supply chain in large manufacturing firms in Nairobi, Kenya)

Table 4: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.925	.848	.849	.10120

a. Predictors: (Constant), e-sourcing and e-payment

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 0.848. This implied that 84.8% of the variation in the dependent variable (the performance of the supply chain in large manufacturing firms in Nairobi, Kenya) could be explained by independent variables (e-sourcing and e-payment).

Table 4. 9: Analysis of Variance

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	12.027	2	3.018	79.42	.000[b]
	Residual	6.568	173	.038		
	Total	18.595	175			

a. Dependent Variable: Firm Performance

b. Predictors: (Constant), e-sourcing and e-payment

The ANOVA was used to determine whether the model was a good fit for the data. F calculated was 79.42 while the F critical was 2.405. 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 e-sourcing and e-payment on the performance of the supply chain in large manufacturing firms in Nairobi, Kenya.

Table 5: Regression Coefficients

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	0.341	0.089		3.831	0.000
	e-sourcing	0.387	0.095	0.386	3.949	0.000
	e-payment	0.398	0.102	0.399	3.716	0.002

a Dependent Variable: Firm Performance

The regression model was as follows:

$Y = 0.341 + 0.387X_1 + 0.398X_2 + \varepsilon$

The results also revealed that e-sourcing has significant effect on the performance of the supply chain in large manufacturing firms in Nairobi, Kenya, β1=0.387, p value= 0.000). The relationship was considered significant since the p value 0.000 was less than the significant level of 0.05. The findings conform to the findings of Hsiao and Teo (2019) that there is a very strong relationship between e-sourcing and firm performance

In addition, the results revealed that e-payment has significant effect on performance of the supply chain in large manufacturing firms in Nairobi, Kenya β1=0.398, 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 results of Vaidya *et al.* (2016) who revealed that there is a very strong relationship between e-payment and firm performance

Conclusions

In addition, the study concludes that e-sourcing has a positive and significant effect on performance of the supply chain in large manufacturing firms in Nairobi, Kenya. The study revealed that e-Bidding, e-tracking and e-contracting influence firm performance.

The study also concludes that e-payment has a positive and significant effect on performance of the supply chain in large manufacturing firms in Nairobi, Kenya. The study revealed that mobile payments, e-money transfers and internet banking influence firm performance.

Recommendations

In addition, the study found that e-sourcing has a positive and significant effect on performance of the supply chain in large manufacturing firms in Nairobi, Kenya. This study therefore recommends that the management of manufacturing firms in Nairobi, Kenya should continue embracing e-Bidding, e-tracking and e-contracting.

The study also found that e-payment has a positive and significant effect on performance of the supply chain in large manufacturing firms in Nairobi, Kenya. This study therefore recommends that the management of manufacturing firms in Nairobi, Kenya should continue embracing mobile payments, e-money transfers and internet banking

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