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**ABSTRACT**

*The study sought to determine the influence of electronic business practices on the performance of supermarkets in Kenya. The study used a descriptive research design and was conducted across supermarkets in Nairobi City County, which were 144 in total. The unit of observation was the managers in charge of operations. The study conducted a census. SPSS version 21 was used to facilitate data analysis. The data showed that the high R square was 0.620. It showed that the independent variables in the study were able to explain 62.00% variation in the performance of supermarkets while the remaining 38.00% was explained by the variables or other aspects outside the model. This implied that these variables were very significant and they therefore needed to be considered in any effort to boost performance of supermarkets. The study recommended for usage of Electronic business systems to provide a supportive role for human resource activities to improve organizational (or personal) efficiency and effectiveness. The use of E-sourcing improves the strategic procurement processes, especially in terms of supplier selection and qualification. During e-sourcing, e-tendering can also be conducted. There is need for the organizations to use Electronic payment for goods, services, and bills/invoices using paperless cash through gadgets such as mobile device (such as a mobile phone, smart-phone, or Personal Digital Assistant) by taking advantage of wireless and other communication technologies (such as mobile telecommunications networks, or proximity technologies). E-marketing influences the traditional way of marketing, increasing effectiveness as well as efficiency in functions and strategies of traditional marketing. This change brings about new plans of action that increase or add value to the profitability of a company. The study recommended for usage of e-catalogue, e-promotion, e-price list and online marketing according for the buyer to choose the product and or services from .*

**Key Words:** e-Inventory Management, e-Sourcing, e-Payment, e-Marketing, Supermarkets in Kenya

## INTRODUCTION

E-business is concerned with the use of the Internet to link companies with their suppliers, customers and other trading partners, (Wagner & Sweeney, 2010). Electronic Business Practices platforms enable the practice of real-time reporting of business activities which greatly enhance speed of business transactions (Heshmati, 2006). The lasting impacts of electronic business practices adoption have been rapidly enhancing the coordination and integration of the entities within the supply chain (Walton & Maruchek, 2007).

Yoon and Hanna (2004) define electronic business practices as practices which involve progressive process of investing in ICT; applying them to transform business processes like market research, production, finance and management; and transacting business with other businesses, governments and households via online networks, (Yoon & Hanna, 2004). The retail sector firms such as supermarkets have adopted the use of electronic business practices in the recent past in an attempt to improve the operators. Kibera and Wairuingi (2007) define supermarkets as large retail shops which operate on self-service basis.

Retail outlets in the first world welcomed the use of the Electronic business systems platform as core component of their day-to-day business operations (Stevens, 2009) for example the supermarkets in the United States are adopting ICT with the main goal of achieving operational efficiency (Griffith & Harmgart, 2015). Wal-Mart is one of the first companies to apply ICT in its management practices where it used innovative ICT platforms to link the business to suppliers, hence helping it achieve operational efficiency (Breznitz & Zysman, 2013). Yu and Ramanathan (2008) argued that in the United Kingdom, out of 41 retail businesses that included supermarkets, 20 had installed high technology in ICT and had achieved significant operational

efficiency. In the US food industry, EBPs introduction made it possible to link suppliers and customers and it went on to cut 40% of costs incurred along the supply chain (Smith, 2012).

In USA and Canada retail outlets such as Walmart, Safeways, Foodex among others complained of facing 12% additional inventory management costs that resulted to over 13% decline in profit margin due to challenges associated with inventory management systems (Disney & Towill, 2008). According to Yoon and Hanna (2004), the knowledge management team of the World Bank's Latin America and Caribbean Region has spearheaded an initiative to help public and private organizations in Latin America accelerate the rate of e-business adoption. A key element of this program is to learn from those who have achieved results in this arena (Yoon & Hanna, 2004).

Nigeria has the largest retail market in the African continent by the virtue that it has the largest population and also the largest GDP (Economist, 2015). The Nigerian retail sector greatly welcomed the incorporation of EBP systems as part of their strategic initiatives (Economist, 2015). The integration of electronic business has enabled Nigerian supermarkets' operations to be lean resulting in efficiency in terms of service delivery. According to Johnson (2012) over 100 firms both local and foreign have shown greater interest in the sector alleged to worth over \$50 billion annually. Electronic business practices have increased the percentage of local consumption in products and services as well as increased utilization of local capacity (Johnson, 2012). Tunde (2014) also noted that online retail market in Nigeria has significantly impacted nation's economy.

In Kenya, the retail industry contributes to the economy of Kenya to the tune of up to 10% of the total gross domestic product (Cytonns, 2016). The Consumer Insight (2016) further reported that

supermarket chains operate with considerable amount of information flow in all fronts from financial transactions to the supply chain processes. Kithinji (2015) posited that in the recent past, there has been an increase in adoption of the electronic business practices in the sector.

The first retail stores in Kenya were introduced in 1960s (Reardon & Swinnen, 2004). Among the first major retailers to operate in Kenya were Uchumi Supermarkets which was founded in the mid-70s followed by Nakumatt Supermarkets in 1987 (Reardon & Swinnen, 2004). However these retail chain stores did not see much growth until the mid-90s when supermarkets grew from 5 to the current over 300 stores in Kenya (Kibera & Wairuingi, 2007).

Retail stores in Kenya range from well-established retail chains to independent one store supermarkets. The rise of supermarkets in Nairobi has received considerable attention in the development literature over the past few years (Reardon & Robinson, 2013).

### **Statement of the Problem**

The supermarkets in Kenya have recorded inconsistent performance over time and in the recent past experienced fluctuations in performance (Cytonns, 2016). A report by Cytonns (2016) indicated that despite the potential in the industry, regional retail malls are able to yield up to only 11.7% returns. Similar statistics are reported by African Consumer Insights report (2016) that the market share / penetration rate of retail chains is still low at a figure between 25% - 30%. For example Uchumi supermarket has experienced frequent stock outs and performance challenges (PWC, 2015). Tuskys Supermarket has often experienced operational inconsistencies (PWC, 2015).

Further, a number of supermarkets in Nairobi have closed down ranging from Jack n Jill and Nakumatt just to mention a few (African Consumer Insights report, 2017). This therefore calls for a new

approach of management with the potential of improving performance of the industry to be in line with the vision 2030 (GOK, 2013). In view of this, a number of methods of enhancing industry performance have been tried with little success. For example, expansion, diversification and backward integration have resulted in increased operational cost (Irungu & Wanjau, 2011). Consequently, a number of firms in the retail sector in Kenya have embraced EBPs in an attempt to address the performance issue (Otiso, Chelangat & Bonuke, 2012). EBPs according to Otiso, Chelangat and Bonuke (2012) have the potential of improving firm performance. PWC (2015) further argued that of the companies in service industry that implemented EBPs platforms in Kenya, 70% claimed to save money and 25% had improved customer service hence the application of e-business practices cannot be ignored.

However, there was minimal research linking EBPs and performance in the Kenyan context and more so in the retail industry in Kenya. Indeed, existing research has not provided a clear link despite heavy investment hence the study on the influence of electronic business practices on the performance of supermarkets in Kenya.

### **Objectives of the Study**

The main objective of this study was to determine the influence of electronic business practices on the performance of supermarkets in Kenya. The specific objectives were:-

- To establish the influence of e- inventory management system on the performance of supermarkets in Kenya.
- To evaluate the influence of e-sourcing on the performance of supermarkets in Kenya.
- To assess the influence of e-payment on the performance of supermarkets in Kenya.
- To determine the influence of e-marketing on performance of supermarkets in Kenya.

## LITERATURE REVIEW

### Theoretical Review

#### Diffusion of Innovation Theory

The research of innovation diffusion can be traced back to Schumpeter who created innovative theory in the early 20th century, and he studied the “imitation” behavior between individuals (Ying-Li & Sui, 2011). The Diffusion of Innovation (DOI) theory was popularized by Everett Rodgers in 1995 while exploring on the impact of innovation when harnessed effectively on the context of relative advantage, compatibility, complexity, trialability, and observability. The theory is concerned with the manner in which a new technological idea, artifact or technique, or a new use of an old one, migrates from creation to use. According to Rodgers (1995), technological innovation is communicated through particular channels, over time, among the members of a social system.

Everett Rodgers book, His book, Diffusion of Innovations, was first published in 1962 and is now in its fifth publication. Formalized research on the diffusion of innovations began in 1943 with a study by Bryce Ryan and Neal Gross, from the field of rural sociology, on the diffusion of hybrid corn in Iowa (Rodgers, 2004). Diffusion of innovation theory has since spread to many different fields, and thousands of studies support its tenets (Kaminski, 2011). The academic disciplines in which the theory has been applied include anthropology, communication, geography, sociology, marketing, political science, public health, and economics (Moseley & Rogers, 2004).

Kiggira, Mwirigi and Shale (2015) citing Rodger works, observed that Diffusion of innovation theory held innovation diffusion as a general process, not bound by the type of innovation studied, by who the adopters are, or by place or culture ,such that the process through which an innovation becomes

diffused has universal applications to all fields that develop innovations.

The theory is relevant to this study in explaining the need to diffuse e-business in the operations of the supermarkets such as inventory keeping, invoicing, payment and marketing. The theory argues that the process through which an innovation becomes diffused has universal applications to all fields that develop innovations. Adoption of e-business in supermarkets fits the context as it can make more efficient the various activities in the supermarkets such as activating and tracking all the supply chain operations at a single point of entry. The theory therefore supports all the independent variables that is e-inventory management systems, e-sourcing, e-payment and e-marketing.

#### Transaction Cost Economics

Transaction Cost Economics (TCE) theory evolved from the idea that transactions form the basis for economic thinking as was analyzed by John R. Commons in 1931. Maunola (2009) observed that in economics and related disciplines, transaction cost is a cost incurred in making an economic exchange. Williamson (1989) suggested that there are different kinds of transactions costs: costs of search and information, bargaining costs, policy and enforcement costs and so forth. The search and information costs comprise costs caused by search for the best supplier, partner, customer, price level or availability of goods on the market (Williamson, 2005). He further stressed that, bargaining costs imply costs associated with establishing of the —tamper-proof contract meaning the achieving of the appropriable agreement with other party (Tadelis & Williamson, 2012). The policy and enforcement costs are the costs of monitoring and enforcing the implementation of the contract.

The Transaction Cost Theory also conceptualizes the intra-organizational production as series of activities linked by transactions (David & Han,

2004). According to Spraakman (2014), transactions are directed by market price. In the intra-organizational context, an activity is the partial production of a good or service, while a transaction is that stage in the activity series when one activity ends and another one begins. Thus, the hybrid or relation occurs when goods or services are transferred between divisions (David & Han, 2004). In context of the inter-organizational relationships, the transaction costs are generally defined as the costs of writing, monitoring, and enforcing contracts. Maunola (2009) argues that transaction costs arise from transaction specific assets, environmental uncertainty and internal uncertainty, whether transaction specific investments are investments in those assets that have been tailored for a particular transaction and cannot be easily transferred. The theory is supported by the adoption of comprehensive interconnected network such as the EBPS platform to enhance automated transactions (Geyskens, Steenkamp & Kumar, 2006).

Supermarkets undertake a lot of transactions, in all operational fronts. From the supplier section to the buyers, the transactions are numerous which requires the backing of EBPS unit to enforce and keenly monitor all the transactions effectively (Kauffman & Mohtadi, 2004). In their research, Heide and John (2010) identified that the recent trends in the industrial markets indicate that buyers and sellers are increasingly supplanting conventional "arm's length" arrangements with "alliances" involving closer ties. Therefore, it's imperative that a joint action as a key aspect of the closeness in the buyer-supplier relationship (Geyskens, Steenkamp & Kumar, 2006).

The theory is relevant to the study in explaining the role of e-business practices on managing the costs of operations through making it faster and easier to perform various activities regarding inventory keeping, invoicing, payment and marketing. The use

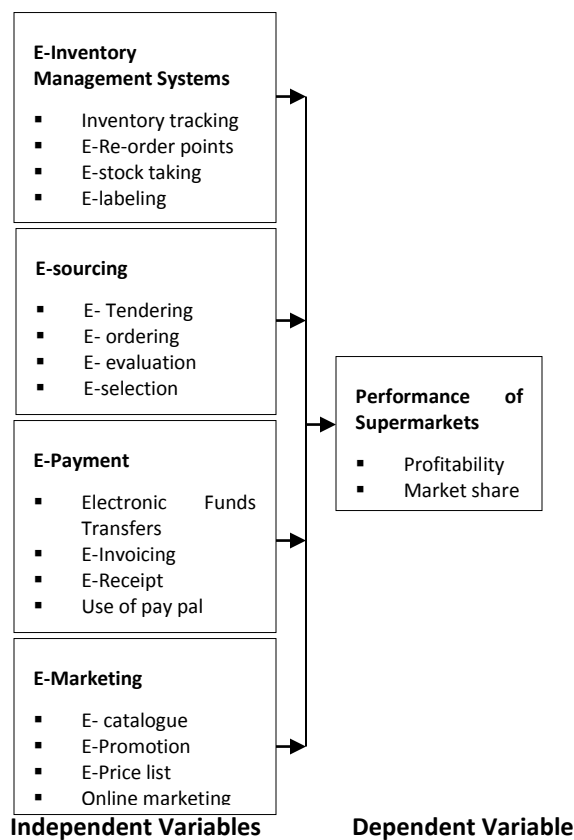
of e-business system makes it easier to manage various costs in transactions such as the costs of search and information and bargaining costs. It is easier to access information about the markets, place orders online, make invoices online and manage inventories thus managing extra transaction costs. The theory therefore supports all the independent variables that is e-inventory management systems, e-sourcing, e-payment and e-marketing.

### **Business to Business Model**

Business to business is more popular as B to B or B2B, which highlights transactions that exists between businesses, such as one involving a manufacturer and supermarket, or a wholesaler and a retailer (Osterwalder & Pigneur, 2010). Business to business refers to business that is conducted between companies, rather than between a company and individual consumers (Investopedia, 2016). The relationship between a buyer and seller can bear various characteristics. The partners can be connected by the formal contracts or informal agreements, involving the open communication or strictly defined information secrecy. The relationship can be associated with the open cooperation or operated independently (Maunola, 2009). In order to provide the additional insights into business relationship, Osterwalder and Pigneur (2010) defined four market and situational antecedents and outcomes of buyer-seller relationship. These market and situational factors are availability of alternatives, supply dynamism, importance of supply and complexity of supply (Johnson, Christensen & Kagermann, 2008). The factors reflect the key conditions according to which relationships can be shaped. Johanson and Mattson (2014) claimed that the relationships imply the specific inter-firm dependence relations that are different in their nature from the general dependence to the market relationship in the traditional market model. The model is relevant to

the study in providing more insight into how technology such as e-business can be used to connect various businesses without the physical meeting thus making activities such as purchasing, invoicing, information sharing as well as payment easier. This model is applicable in interconnection between supermarkets and their contracts using the EBPS platform. The EBPS has the capacity to enable electronic invoicing between the interconnected parties. This enhances and speeds up the whole process, thus improving on delivery. The theory therefore supports all the independent variables that is e-inventory management systems, e-sourcing, e-payment and e-marketing.

### Conceptual Framework



**Figure 1: Conceptual Framework**

### Electronic Inventory Management Systems

Electronic business systems provide a supportive role for human resource activities to improve

organizational (or personal) efficiency and effectiveness (Blinn, Cohen, Lorton & Stein, 2002). They help to execute activities faster, support autonomous decision-making processes, and enable distributive operations in order to achieve higher logistics efficiency, (Cohen *et al*, 2002). According to Roy (2012), electronic inventory management plays very important role in the overall cost of operations and supply chain of any business big or small.

Han, (2014) observed that electronic inventory is used as a cushion against the supply and demand uncertainties. In this study, electronic inventory systems comprise of inventory tracking, e-re-order points, e-stock taking and e-labeling according to Han (2014)

### Electronic Sourcing

According to Bächle and Lehmann (2010), E-sourcing is the use of web-based applications in order to improve the strategic procurement processes, especially in terms of supplier selection and qualification while Bogaschewsky and Müller (2008) describe e-sourcing as information technology supported processes of finding and selecting appropriate suppliers. In the study, electronic sourcing is defined as e-Tendering, e-ordering, e-evaluation and e-selection according to Maunola (2009).

During e-sourcing, e-tendering can also be conducted. E-tendering refers to the process of sending requests for information and prices to suppliers and receiving the response using internet technology (McConnell, 2009).

E-ordering can also be conducted after a successful sourcing. E-ordering is the use of Internet to facilitate operational purchasing process, including requisitioning, order processing, order approval, the transmission and acceptance of this by suppliers (Afande 2015). By keeping the ordering information electronic from start to finish; the process is

quicker, reduces errors and provides a clear governance and audit trail (Doherty *et al.*, 2013).

### **Electronic Payment**

Electronic payment are payments for goods, services, and bills/invoices using paperless cash through gadgets such as mobile device (such as a mobile phone, smart-phone, or Personal Digital Assistant) by taking advantage of wireless and other communication technologies (such as mobile telecommunications networks, or proximity technologies) (Apanasevic, 2013). E-payment service comprises of all technologies that are offered to the user as well as all tasks that the payment service provider(s) perform to commit payment transactions (De Reuver, Verschuur, Nikayin, Cerpa&Bouwman, 2015).

In this study, e-payment consists of electronic funds transfers, e-invoicing, e-receipting and use of pay pal according to Maunola (2009). Electronic invoicing is the electronic transfer of invoicing information (billing and payment) between business partners (supplier and buyer) (Maunola, 2009). Boer, Booiijink, Liezenberg and Nienhuis (2008) defined electronic invoicing as a part of end-to-end trade process that has a strong dependency on other processes including taxation and contraction.

### **E-Marketing**

E-marketing is the use of marketing principles and strategies by means of electronic media more particularly the Internet (Gensler, Volckner, Liu-Thompkins & Wiertz, 2013). E-marketing influences the traditional way of marketing, increasing effectiveness as well as efficiency in functions and strategies of traditional marketing. This change brings about new plans of action that increase or add value to the profitability of a company (Strauss *et al.*, 2008).

In this study, e-marketing comprises of e- catalogue, e-promotion, e-price list and online marketing

according to Baron, Shaw and Bailey (2000). E-catalogue is the supplier's virtual catalog that is available for the buyer to choose the product and or services from (Baron, Shaw & Bailey 2000).

Electronic catalogue provides the information lists on e-products and e-services, in-depth knowledge on functions, prices and quality. Moreover, it provides the classification criteria for searching and selecting products and services as well as the platform for multi-sourcing product catalogue (Baron, Shaw & Bailey 2000). In regard to e-promotion, the internet has improved promotional coordination among intermediaries, promoting items and services online is attached with various issues (Hanafizadeh, 2012).

### **Firm Performance**

Carton and Hofer (2010) defined organizational performance as organizational effectiveness, efficiency, financial viability and relevance. The term performance is the end result of activity (Leslie, 2013). Profitability is one of the measures of performance of an organization. Profitability shows to what extent the management is able to make efficient use of resources availed to it (Srivastava, 2015). This study will focus on profitability as the measure of performance.

Chandra (2012) argues that profitability is the best measure of performance since profit maximization is said to be the main objective of all firms. Carton (2010) also argues that the measure of firm performance using profitability is important because it indicates the overall efficacy of the company. This study will hence adopt profitability as a measure of performance based on this argument.



## Empirical Review

### Electronic Inventory Management Systems and performance

Walter *et al.* (2009) studied a supply chain comprising a manufacturer, distribution centers and retailers that used the vendor managed inventory program, where a supplier is responsible for replenishing retailers' inventory. The study found that the manufacturer's inventory is reduced even by low level adoption of vendor managed inventory and that even non- vendor managed inventory partners gain benefits. Contrary to the previous study, demand variance did not significantly affect the benefits.

Smaros *et al.* (2003) studied a three levels supply chain in which the manufacturer used a combination of order data from non- vendor managed inventory customers and sales data from vendor managed inventory customers in its production planning. The study showed that manufacturer benefited from even a partial increase of involvement of its partners. This study only considered products with stable demand but included 21 products with different replenishment frequencies. Products with low replenishment frequency obtained more benefits with increasing information sharing.

Buxmann *et al.* (2014) conducted a study on organizational uptake of Electronic platforms for enhancing supply chain performance. The study found that not many organizations use the sophisticated structured software platforms to interconnect their supply chains. However, the ones that are already using the electronic business practices platform enjoy improvements in cooperation, supply chain redesign, as well as supplier evaluation and selection are even harder to quantify. They also concluded that the successful use of electronic business practices software's involves expensive alterations and customizations in

the organization and therefore organizations have to be strategic in utilizing these systems. They suggested further research on the potential benefits and problems of using supply interconnection platforms like electronic business practices.

Gunasekaran (2014), in his study on electronic business practices platforms supply chain integration and management found out that EBPs systems should include the strategic objectives of supply chain management the electronic business practices architecture should be designed for supply chain management different from that of traditional organizations. It is important to note that successful electronic business practices systems are not easy to implement in supply chain management and they require major changes in how a business operates internally and with external partner. The existing commercial enterprise electronic business practices platforms require flexibility in the organization operations so as to accommodate individual organizational characteristics. Every organization that adopts a new supply chain management system must establish performance measures and metrics for measuring the performance and suitability of the system in supply chain management. It is also crucial to develop standards and legal frameworks for the application of supply chain management software. Lastly, there must be an alignment between electronic business practices utilization model and supply chain model.

### Electronic Sourcing and performance

Kingori (2013) conducted a study on the effect of e-procurement practices on supply chain management at Teachers' Service Commission. The study also sought to determine the level of e-Procurement application in Teachers' Service Commission and to determine the challenges encountered when implementing e-Procurement system in Teachers' Service Commission. The study used descriptive research design to collect data. The

study used stratified random sampling on Human Resource, Administration, Finance and Supply Chain Management with 1000 employees. The results of the study indicated that there was a strong association between e-Procurement, the levels of information communication technology expertise and the levels of e-Procurement application. The study indicated that the use of online storage of data increased accessibility of information as well as the security of information. Further, the study revealed a high relationship between Supply Chain practices and e-Procurement applications.

Chipiro (2010) also sought to examine the factors influencing E-procurement adoption in CBZ Bank, Zimbabwe and its impact on the bank's strategic sourcing, and enhance understanding of the impact of E-procurement on strategic sourcing. The study used questionnaire survey and interactive interviews. The results of the study reveal that adoption of practices such as electronic sourcing positively impacts the organizations' uptake of E-procurement to complement its strategic processes. The findings also indicated that barriers such as cost were minimized through the adoption of e-procurement practices.

Another study by Martin (2014) looked at the adoption of E-Sourcing platforms as reasonable marketing tools for suppliers. The study used surveys research to collect data. The study also used structured questionnaires on marketing firms. The results of the study indicated that E-sourcing platforms provide a proper way for suppliers to market their companies and products in different ways. However, the best marketing measures differ according to criteria like the company size or the offered services or goods.

### **Electronic Payment and performance**

Groznik and Manfreda (2015) sought to determine the impact of e-invoicing and e-government on business processes in Slovenia. The study used

census surveys on all registered businesses in Slovenia. The findings of the study revealed that the adoption electronic invoicing in both government and business enterprises leads to cost cutting due to less operating expenses as a result of lack of paperwork or postal services. This is due to the fact that higher returns were realized as a result of the incorporation of e-invoicing in ordering of commodities.

Doherty *et al* (2013) also sought to establish the institutional responses to electronic procurement in the public sector. The study used five in-depth case studies based on extensive interviews, observation and documentation reviews conducted within central and local government governments. The findings of the study revealed that the adoption of e-procurement technologies such as electronic invoicing to make payments and issuance of receipts have improved lead time in supply chain. The study further showed that majority of the institutions was actively planning to implement: e-tendering; e-award; e-contract and e-catalogue systems, but none had any intention of adopting e-marketplaces or e-auctions.

Hill and Scudder (2012) conducted a study on the use of electronic business practices for supply chain coordination in the food industry and revealed that electronic business practices is instrumental in inter-organizational transfer of supply chain data. Transfer of such information is important in performance of upstream supply chain. Use of electronic business practices is associated with enhanced coordination of suppliers to the organization and coordination of customers to the organization. This study suggested further research to consider organizational characteristics in establishing the relationship between electronic business practices and supply chain performance.

Umble (2013) conducted a study on electronic business practices: organizational utilization

procedures and critical success factors. This study appreciated the complex nature of electronic business practices platforms. He pointed out that successful use of electronic business practices is costly and demands a lot of organizational time and resources.

Fui-Hoannah and Delgado (2006) sought to establish the critical factors in the full utilization of electronic business practices systems and identified seven factors; business plan and vision, change management, communication, EBPs team composition, skills and compensation, management support and championship, project management skills, system analysis, selection and technical utilization skills.

### **E-Marketing and performance**

A study by Viglia (2014) indicated that simple access to vital information assists in maintaining prices within the online world. Online pricing can effortlessly reward loyal clients. Innovation permits guests to be monitored effectively enabling loyalty incentives to be focused towards them. In the online banking sector, payments made through the internet are solely directed via existing payment instruments and systems.

A study by Kotler (2007) found that firms can run the same promotion and advertising campaigns used in the home market or alter them for every local market in communication adaptation. The study adopted a descriptive cross-sectional design, which is used when a certain problem has been specially described and when the researcher is explained for the problem by the respondents. The study found that information identification, information acquisition, sharing and application significantly affected the performance of tourism firms. The study also revealed that the manner in which a product was advertised had a significant effect on performance. There is need for the

management of firms to improve on their product information for improved performance.

### **METHODOLOGY**

This study employed a descriptive cross sectional survey research design. Descriptive research is conducted to describe the present situation, what people currently believe, what people are doing at the moment and so forth (Olusola *et al*, (2013). The multivariate model was as follows:

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \varepsilon$$

Where;

Y = Performance of Supermarkets

X<sub>1</sub> = E-Inventory Management Systems

X<sub>2</sub> = E-sourcing

X<sub>3</sub> = E-payment

X<sub>4</sub> = E-marketing

ε = Error term

In the model, β<sub>0</sub> = the constant term while the coefficient β<sub>i</sub>= 1...4 was used to measure the sensitivity of the dependent variable (Y) to unit change in the predictor variables. ε is the error term which captures the unexplained variations in the model.

### **FINDINGS**

#### **E-Inventory Management Systems**

The study sought to assess the influence of E-inventory management systems on performance of supermarkets in Nairobi Kenya. This section presents findings to statements posed in this regard with responses given on a five-point likert scale (where 1 = Strongly disagree; 2 = Disagree; 3 = Neutral; 4 = Agree; 5= Strongly Agree). Table 1 presented the findings. The scores of 'strongly disagree' and 'disagree' have been taken to represent a statement not agreed upon, equivalent to mean score of 0 to 2.5. The score of 'Neutral' has been taken to represent a statement agreed upon moderately, equivalent to a mean score of 2.6 to 3.4. The score of 'agree' and 'strongly agree' have

been taken to represent a statement highly agreed upon equivalent to a mean score of 3.5 to 5.0. Table 1 presents the findings. As tabulated, a majority of respondents were found to highly agree that the organization has adopted inventory tracking systems to monitor stocks (3.765); The organization has set in place electronic re-order points to trigger purchase of a pre-determined amount of replenishment inventory (3.897); The organization has adopted electronic stock taking to save time

(3.875); their usage of auto-ID technologies improves accuracy in product marking (3.568); There is adoption of electronic labeling system to enhance retrieval (3.815); The organization uses electronic systems to establish FIFO practices (3.765). This implies that on average the organization has implemented E-inventory management systems to enhance performance of the supermarkets.

**Table 1: Influence of E-Inventory Management systems on Performance of supermarkets**

<b>E-Inventory Management Systems</b>	<b>Mean</b>	<b>Std. Dev</b>
The organization has adopted inventory tracking systems to monitor stocks	3.765	1.872
The organization has set in place electronic re-order points to trigger purchase of a pre-determined amount of replenishment inventory	3.897	1.542
The organization has adopted electronic stock taking to save time	3.875	1.985
There is adoption of electronic labeling system to enhance retrieval	3.815	1.236
The organization uses electronic systems to establish FIFO practices	3.765	1.908

**E-Sourcing**

The study sought to assess the influence of E-Sourcing on performance of supermarkets in Nairobi Kenya. This section presents findings to statements posed in this regard with responses given on a five-point likert scale (where 1 = Strongly disagree; 2 = Disagree; 3 = Neutral; 4 = Agree; 5= Strongly Agree). Table 2 presents the findings. The scores of ‘strongly disagree’ and ‘disagree’ have been taken to represent a statement not agreed upon, equivalent to mean score of 0 to 2.5. The score of ‘Neutral’ has been taken to represent a statement agreed upon moderately, equivalent to a mean score of 2.6 to 3.4. The score of ‘agree’ and

‘strongly agree’ have been taken to represent a statement highly agreed upon equivalent to a mean score of 3.5 to 5.0.

As indicated by high levels of agreement in Table 2, a majority of respondents stated that the company uses electronic tender evaluation system to evaluate its suppliers (3.876); The company identifies its suppliers easily online (3.887); The company uses electronic notification module during its procurement process (3.764); The company uses electronic ordering systems to make orders (3.872); The organization normally conducts online electronic tendering (3.788). The study results imply that E-sourcing influence performance of supermarkets in Kenya.

**Table 2: Influence of E-Sourcing on Performance of supermarkets**

<b>E-sourcing</b>	<b>Mean</b>	<b>Standard Deviation</b>
The company uses electronic tender evaluation system to	3.876	1.234

evaluate its suppliers

The company identifies its suppliers easily online	3.887	1.458
The company uses electronic notification module during its procurement process	3.764	1.569
The company uses electronic ordering systems to make orders	3.872	1.236
The organization normally conducts online electronic tendering	3.788	1.238

**E-Payment**

The study sought to assess the influence of E-Payment on performance of supermarkets in Nairobi Kenya. This section presents findings to statements posed in this regard with responses given on a five-point likert scale (where 1 = Strongly disagree; 2 = Disagree; 3 = Neutral; 4 = Agree; 5= Strongly Agree). Table 3 presented the findings. The scores of ‘strongly disagree’ and ‘disagree’ have been taken to represent a statement not agreed upon, equivalent to mean score of 0 to 2.5. The score of ‘Neutral’ has been taken to represent a statement agreed upon moderately, equivalent to a mean score of 2.6 to 3.4. The score of ‘agree’ and ‘strongly agree’ have been taken to represent a

statement highly agreed upon equivalent to a mean score of 3.5 to 5.0.

As indicated by high levels of agreement in Table 3, a majority of respondents the organization uses electronic payments when purchasing goods (3.799); The organization uses electronic invoice processing to carry its transactions (4.212); There is the use of electronic payments modes like funds transfers (4.110); The organization has an online invoice preparation systems for purchases (3.998). The organization uses electronic receipt systems (3.875). The study findings deduced that E-payment plays an important role on the performance of the supermarkets in the study area.

**Table 3: Influence of E-Payment on Performance of supermarkets**

E-Payment	Mean	Standard Deviation
The organization uses electronic payments when purchasing goods	3.765	.629
The organization uses electronic invoice processing to carry its transactions	3.780	.1.908
There is the use of electronic payments modes like funds transfers	3.690	.678
The organization has an online invoice preparation systems for purchases	3.775	.662
The organization uses electronic receipt systems	4.902	.568

**E-Marketing**

The study sought to assess the influence of E-Marketing on performance of supermarkets in

Nairobi Kenya. This section presents findings to statements posed in this regard with responses given on a five-point likert scale (where 1 = Strongly disagree; 2 = Disagree; 3 = Neutral; 4 = Agree; 5=

Strongly Agree). Table 4 presented the findings. The scores of 'strongly disagree' and 'disagree' have been taken to represent a statement not agreed upon, equivalent to mean score of 0 to 2.5. The score of 'Neutral' has been taken to represent a statement agreed upon moderately, equivalent to a mean score of 2.6 to 3.4. The score of 'agree' and 'strongly agree' have been taken to represent a statement highly agreed upon equivalent to a mean score of 3.5 to 5.0.

As indicated by high levels of agreement in Table 4, a majority of respondents stated that there is

adoption of electronic cataloguing by the company (3.876); There is adoption of electronic promotion platforms by the company (3.908); The company usually obtains the price list of its suppliers electronically (4.219); Online marketing is normally conducted by the organization (3.998). The organization compares prices of goods online before placing purchases (4.120). The study findings can be deduced that E-marketing plays an important role on the performance of the supermarkets in the study area.

**Table 4: Influence of E-Marketing on Performance of supermarkets**

<b>E-Marketing</b>	<b>Mean</b>	<b>Standard Deviation</b>
There is adoption of electronic cataloguing by the company	3.876	1.213
There is adoption of electronic promotion platforms by the company	3.908	1.890
The company usually obtains the price list of its suppliers electronically	4.219	1.238
Online marketing is normally conducted by the organization	3.998	1.479
The organization compares prices of goods online before placing purchases	4.120	1.458

### **Performance of Supermarkets**

The study sought to establish the rating performance of supermarkets in Kenya. This was measured using market share and profitability indicators in the opinion statements given. Respondents were asked to indicate the extent to which they measured performance of supermarkets. This was on a scale of not at all, small extent, moderate, large extent and very large extent. Thus, in this study the scale of not all and small extent meant disagree while large and very large extent meant agreed. The study found out that 60% of respondents agreed that they used percentage of their market share to measure growth, 25% of respondents indicated moderate and 5% disagreed that they used percentage of their market share to measure performance of supermarkets. With regard to product availability in

the market, 58% of respondents agreed that they used availability of their products in the market to measure performance of supermarkets while 30% of respondents indicated moderate and 13% of respondents disagreed that they used availability of their products in the market to measure performance of supermarkets. On competition, 60% of respondents agreed that they used competition to measure their growth while 28% of respondents indicated moderate and 12% of respondents disagreed that they used competition to measure their performance of supermarkets. Concerning loyalty, 66% of respondents used loyalty of their customers to measure performance of supermarkets whereas 23% of respondents indicated moderate and 12% of respondents disagreed that they used loyalty of their customers to measure performance of supermarkets.

Thus, from the study it was observed that performance of supermarkets would be measured by use of percentage of market share, availability of the company's product in the market, competition of the company's product in the market and loyalty of customers towards the company's products. These results are in harmony with the study by Waiganjo (2013) that noted that although performance has been traditionally conceptualized in terms of financial measures, some scholars have proposed a broader performance concept that incorporates non-financial measures including among others market share, product quality, and company image.

The result showed that 70% of respondents agreed that they used organizational growth over a given period of time to measure performance of supermarkets whereas 25% of respondents indicated moderate and 5% of respondents indicated that they used organizational growth over a given period of time to measure performance of supermarkets. Based on asset base/facility, 60% of respondents agreed that they used asset base/facility to measure performance of supermarkets while 27% of respondents indicated

moderate and 5% of respondents disagreed that they used asset base/facility to measure their performance of supermarkets. Finally, on revenue earnings, 65% of respondents agreed that they used income revenue earnings to measure their performance of supermarkets while 22.9% of respondents indicated moderate and 4.8% of respondents disagreed that they used income revenue earnings to measure their companies' growth.

Generally, from the results it was noted that supermarkets used organizational growth, asset base/facility to measure performance of supermarkets. Supermarkets whose profitability has been tremendous over a given period of time are considered to be performing well. Also, the supermarkets income revenue earnings would be used to measure performance of supermarkets. The supermarkets whose income revenue earnings have been increasing steadily are perceived to be profitable. These study findings, are in agreement with Wanjau (2010) and Waiganjo (2013) who noted that although supermarkets can be measured using profitability, supermarkets which have profits are deemed be performing well.

**Table 5: Performance of Supermarkets**

<b>Statement</b>	<b>Not at all</b>	<b>Small Extent</b>	<b>Moderate</b>	<b>Large Extent</b>	<b>Very Large Extent</b>	<b>Modal Class</b>
	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	
<b>Market Share</b>						
a) Percentage of your market share	4%	32%	30%	26%	26%	3
b). Availability of your services in the market	2%	24%	26%	38%	18%	4
c) Competitiveness of your products	3%	28%	32%	34%	10%	4
d). Loyalty of your customers	4%	18%	16%	42%	20	4
<b>Profitability</b>						

a). The organization growth over time	2%	18%	22%	40%	26%	4
b). Asset base /facilities	4%	12%	24%	40%	26%	4
c). Income/revenue earnings	2%	12%	38%	40%	28%	4

## Multiple Regression Analysis

**Table 6: Model Summary**

Model	R	R <sup>2</sup>	Adjusted R <sup>2</sup>	Std. Error of the Estimate
	.788	.620	.580	.008

## Analysis of Variance (ANOVA)

**Table 7: ANOVA (Results)**

Model	Sum of Squares	d.f	Mean Square	F	Sig.
Regression	20.909	4	5.2273	16.084	.004 <sup>a</sup>
Residual	30.876	95	.3250		
Total	51.785	99			

NB: F-critical Value = 5.432;

**Table 8: Coefficient Results**

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	$\beta$	Std. Error	$\beta$		
(Constant)	10.909	3.212		2.905	.000
E-Inventory Mgt sytems	.588	.865	.665	3.908	.003
E-Sourcing	.598	.130	.654	4.345	.000
E-Payment	.565	.126	.455	4.234	.008
E-Marketing	.589	.125	.332	5.432	.002

## CONCLUSION AND RECOMMENDATIONS

The study sought to assess the influence of E-Inventory management systems on the performance of supermarkets in Kenya. It was established that E-inventory management systems influence performance of supermarkets in Kenya. Majority of respondents were found to highly agree that the organization has adopted inventory tracking systems to monitor stocks. The

organization has set in place electronic re-order points to trigger purchase of a pre-determined amount of replenishment inventory. The organization has adopted electronic stock taking to save time. The usage of auto-ID technologies improves accuracy in product marking. There is adoption of electronic labeling system to enhance retrieval. The organization uses electronic systems to establish FIFO practices.



The study results indicated that a majority of the respondents stated that to high levels of agreement that the company uses electronic tender evaluation system to evaluate its suppliers. The company identifies its suppliers easily online. The company uses electronic notification module during its procurement process. The company uses electronic ordering systems to make orders. The organization normally conducts online electronic tendering. The study results imply that E-sourcing influence performance of supermarkets in Kenya.

The study established to high levels of agreement that a majority of respondents the organization uses electronic payments when purchasing goods. The organization uses electronic invoice processing to carry its transactions. There is the use of electronic payments modes like funds transfers. The organization has an online invoice preparation systems for purchases. The organization uses electronic receipt systems. The study findings can be deduced that E-payment plays an important role on the performance of the supermarkets in the study area.

The study established that a majority of respondents stated that there is adoption of electronic cataloguing by the company. There is adoption of electronic promotion platforms by the company. The company usually obtains the price list of its suppliers electronically. Online marketing is normally conducted by the organization. The organization compares prices of goods online before placing purchases. The study findings can be deduced that E-marketing plays an important role on the performance of the supermarkets in the study area.

### **Conclusions of the Study**

The study concludes that E-inventory management systems influence the performance of super markets in Kenya. The regression coefficients of the study show that E-inventory management systems has a significant influence on performance of super

markets in Kenya. This implies that increasing levels of E-inventory management systems would increase the of performance of super markets in Kenya.

The study concludes that E-sourcing influence the performance of super markets in Kenya. The regression coefficients of the study show that E-sourcing has a significant influence on performance of super markets in Kenya. This implies that increasing levels of E-sourcing would increase the of performance of super markets in Kenya.

Further, the study concludes that E-payment influence the performance of super markets in Kenya. The regression coefficients of the study show that E-payment has a significant influence on performance of super markets in Kenya. This implies that increasing levels of E-payment would increase the of performance of super markets in Kenya..

Finally, the study concludes that E-marketing influence the performance of super markets in Kenya. The regression coefficients of the study show that E-marketing has a significant influence on performance of super markets in Kenya. This implies that increasing levels of E-marketing would increase the of performance of super markets in Kenya..

### **Recommendations of the Study**

The study recommended the usage of Electronic business systems to provide a supportive role for human resource activities to improve organizational (or personal) efficiency and effectiveness. They help to execute activities faster, support autonomous decision-making processes, and enable distributive operations in order to achieve higher logistics efficiency, reduction of overall cost of operations and supply chain of the organizations

The use of E-sourcing improves the strategic procurement processes, especially in terms of supplier selection and qualification. During e-sourcing, e-tendering can also be conducted. The E-sourcing can enhance keeping the ordering information electronic from start to finish; enhance

the process, reduces errors and provides a clear governance and audit trail

There is need for the organizations to use Electronic payment for goods, services, and bills/invoices using paperless cash through gadgets such as mobile device (such as a mobile phone, smart-phone, or Personal Digital Assistant) by taking advantage of wireless and other communication technologies (such as mobile telecommunications networks, or proximity technologies)

E-marketing influences the traditional way of marketing, increasing effectiveness as well as efficiency in functions and strategies of traditional marketing. This change brings about new plans of action that increase or add value to the profitability of a company. The study recommends for usage of e- catalogue, e-promotion, e-price list and online marketing according for the buyer to choose the product and or services from .

### **Areas for Further Research**

The study was a milestone for further research in the performance of supermarkets in Africa and particularly in Kenya. The findings demonstrated the important factors to the performance of supermarkets in Kenya to include; E-inventory management systems, E-sourcing, E-payment and E-marketing. The current study should therefore be expanded further in future in order to determine the other electronic business practices which influence performance of supermarkets. Existing literature indicates that as a future avenue of research, there is need to undertake similar research in other government institutions and public sector organizations in Kenya and other countries in order to establish whether the explored factors can be generalized to affect performance of public organizations.

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