

**ELECTRONIC BUSINESS PLATFORM AND PERFORMANCE IN GLOBAL  
OPERATIONS BY KENYAN LARGE-SCALE MANUFACTURING FIRMS**

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**DECLARATION**

I declare that this is my original work and has never been presented to any other university for any academic credit purpose.

Signed:.....Date:.....

Christina Atieno Dinda

D61/ 81251/2015

This project has been submitted for presentation with my approval as the University supervisor.

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## **DEDICATION**

This work is dedicated to my late parents Prince Henry Aran Dinda and mother Alice Aoko Dinda for the inspiration and faith they had in me despite my health issues that tried to hinder me from attending school, they were always there for me especially my dad who was always there with me at the doctors.

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## ABSTRACT

The purpose of this study was to establish the application of E-Business platforms and its effects on performance in the global business operations of large manufacturing firms in Kenya. The study adopted a descriptive research design. The target population comprised of all 655 large manufacturing firms as listed in the KAM directory of manufacturers; Stratified sampling was applied to pick 66 respondents. A structured questionnaire was used to collect data. The quantitative data was analyzed using descriptive statistics. The study used simple regression at 95% confidence level to analyze the relationship between the variables of study. From the findings, it was found out that there is a significant relationship between the independent variables (Y) and all the dependent variables (X1) based on the *p-value* ( $p \leq 0.003$ ) of the coefficients of the dependent variables. The analysis showed that when e-business is embraced by one unit, the percentage and performance of the business grows by 16.4%. The study concludes that adoption of E-business platforms does not only improve the effectiveness and efficiencies of the operations but also act as a competitive weapon to the organization strategy. The study further concludes that E-business adoption improved communication and productivity between the organization and suppliers and led to the reduction in costs; increased efficiency and enhanced network relationships. The introduction of E-business has offered numerous opportunities to businesses, including reduced costs, closer relationships with customers, increased profit and customer loyalty. It can therefore be concluded that adoption of E- Business platforms such as e-inventory management, e-sourcing, e-payment and e-marketing application systems have significant influence on organizational performance among large scale manufacturing firms in Kenya. The study recommends manufacturing firms need to incorporate all the E-Business components into their systems. This will enable them to improve the overall organizational performance of their firms. The firms need should encourage employees to make use of e- systems. The Government should institute policies concerning data handling to enhance the application of electronic business practices between the buyers and suppliers. As area of further study a comparative study should be done in order to establish whether there are any similarities or differences in the factors leading to success of E-business across different industries such as between private and public firms and between manufacturing industry and another.



## **CHAPTER ONE: INTRODUCTION**

### **1.1 Background of the Study**

According to Poon & Swatman (1999) E-business can be defined as the use of internet based programs to do business activities such as conducting transactions, sharing information and maintaining business relationships. Previously an Internet service involved more of information services but has since evolved to the creation of interactive services on the internet platform. This was promoted by the need to cut on costs, enhance accessibility, and speed up transactions among other benefits. Rajkumar (2001) stated that E-business has a significant contribution to the national economy and its growth by removing non value addition activities in the business transactions. However the adoption of E-business in Kenya has been low with some authors noting the difficulties in getting such a system operational is due to lack of implementations and discussion of E-business models and their benefits for companies, supplier and the customer in Kenya. This means there lacks information of the adoption and implementation that can be used as a point of reference for successful implementation.

Several theories have been put forward to explain the relationship between application of E-Business systems and organization performance. Among the theories is the diffusion of innovation theory which focuses on the path a new technological idea or technique or the use of a new system moves from the creation point to the use end. Then there is the transaction cost theory which states that transactions form the basis of an economic idea .It argues that a transaction cost is incurred in an economic exchange. The theory conceptualizes intra organizational business as a series of activities linked by transactions that has some cost attached. The third theory used in this study is the Business to business model which highlights the transactions that take place between businesses such as a business transaction between a whole seller and a retailer. The model provides an 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.

The Kenya manufacturing sector is the third largest after agriculture and the transport & communication sectors in terms of contribution to the national GDP. Although it's the

Kenya's third contributor to the GDP the sector has been experiencing fluctuations over the years due to various financial situations and mostly contingent in nature (KPMG 2014). Records from KNBS (2012) showed that the growth of the manufacturing industries in Kenya declined from 4.4% in 2010 to 3.3% in 2011 due to challenges in the operating environment. Such a decline requires a deeper analysis at both industry and organization level to know what could be the cause and take the necessary measures. Moreover this a key sector playing an important role in the overall economic growth of the country with a great untapped potential and its therefore important to understand its operating environment and how it affects its performance.

### **1.1.1 Electronic Business Platform**

E-business is defined as any economic or business activity that uses applications based on Information and Communication Technology (ICT) to enable the buying and selling of products and services and thus facilitating the transaction of business activities between and among businesses, individuals, governments, or other organizations (Huy and Filiatrault, 2006). It involves the innermost workings of an organizations processes and culture. By connecting critical business systems directly to customers, employees, suppliers, and business partners through the use of web based applications, organizations quickly integrate and transfer knowledge and identify opportunities for goods and services through the platform. Because e-business platforms connects sales transactions with rest of organizations functions through various electronic and technological applications, organizations can react quickly to market conditions thus enabling them To remain competitive in global markets and therefore, manufacturing companies are increasingly adopting the e-platform.

E-business probably began with electronic data interchange in the 1960s (Zwass, 1996; Wigang, 1997). However, it was only in the 1990s, primarily via the internet, that e-business has emerged as a core feature of many organizations (Melao, 2009). With the technological advancement e-business has a huge impact on day to day operation of the businesses. E-Business allows companies to link their internal and external processes more efficiently and effectively and work more closely with suppliers and partners to

better satisfy the needs and expectations of their customers, leading to improvements in overall business performance

Lancioni et al. (2000) argues that internet as a business system platform is a catalyst of global business with major changes in the way business is conducted. With the internet platform local companies are no longer limited to local markets since they are now able to access global markets through the digital platforms. Business firms can now target customers living in other parts of the world far from their location through the digital platforms. Through E-business extended organization become interconnected in such a way that employees, customers, suppliers and other stakeholders are interconnected irrespective of their geographical location. The system uses a common electronic data standards with a computer technology to electronically inter connect information systems and integrate both internal and external data and hence automate business processes between trading partners (McGee 2000). With such connectivity business relationships are improved causing increase in loyalty, competitive advantage gained and profitability enhanced. However the shift from manual to digital though advantageous has also some disadvantages because local companies offering same goods and services may be run out of business by others who have operational efficiency since to achieve such may be expensive for local firms.

E-business encompasses as many benefits to organizations, individual's and society. Such benefits include access to global markets at low costs ,operational efficiency ,reduced cost of operation ,business efficiency, 24 hours accessibility ,lower communication costs, increases sales and profitability (to organizations). Consumers on the other hand have benefited from more choices, 24 hours access, new markets and price comparisons, better prices due to competitive environments, convenience, time saving, and access to extensive information. To the society the benefits are improved living standards since some merchandise can be sold at lower prices, flexible working conditions, enhanced social connections and facilities delivery of public services which reduces cost and increases quality of the offered services (Wen et al.,2001; Kuzic et al., 2002; Marshall & Mckay, 2001). In Kenya the manufacturing sector firm's such have adopted the use of electronic business practices in the recent past in an attempt to improve the operations.

### **1.1.2 Organizational Performance**

This refers to how well an organization is able to achieve its goal as set within the specified period of time and in the expected quality. Such goals are both financial and non-financial in criteria. Financial goals can be measured in terms of profits made, return on investments, and increase in growth. Non-Financial goals can be measured through criteria such as innovation, market share quality improvement, and resource planning and organization effectiveness (York & Miree 2004).

Richard et al. (2009) stated that organization performance encompasses three specific areas of company outcomes. These are product Market performance in terms of sales and market shareholder returns in terms of total shareholder returns and thirdly the financial performance in terms of profits, return on investments and return on assets. In summary organization performance is the actual output measured against its intended output in terms of goals and objectives. However according to Snider & Rendon (2008) some elements of external environment becomes challenge to the performance of the business. These include the economic, political, technological and social cultural environment.

Organization performance target to achieve organization efficiency and effectiveness through a continuous improvement process .This involves setting achievable goals and objectives and monitoring them in a continuous process to measure the ability to achieve them .At the organization level it involves measuring customer satisfaction by conducting surveys to get the view point of customers while at the individual level it involves such as the statistical quality control (Kaplan & Norton 2001). With the advent of internet based business it's possible to conduct online survey to measure customer satisfaction and also get product performance in the global market.

### **1.1.3 Large-Scale Manufacturing Firms in Kenya**

Although there is no specific definition of what is a large scale firm, several studies have used the number of employees as the base criteria to categorize them. KAM (2011) defined large scale manufacturing firms as those with over 100 employees. The organization further defines large scale firms as those with a turnover of over 250 million Kenyan shilling, medium scale to be those with a turnover of between twenty million and

two hundred million while small scale are those whose turnover is between ten to twenty million.

From KAM data there are 700 large manufacturing firm in Kenya operating in twelve subsectors. These are food processing, chemicals, energy, plastic, textile, wood, construction, pharmaceuticals, metal, leather, auto mobiles and paper processing firms (KNBS 2014).

Under the financial pillar of Kenya Vision 2030, manufacturing is one the five segments that has been recognized to help monetary improvement. It is relied upon to be a powerful and aggressive area to help the national development, make work, win the nation outside trade and encourage foreign venture (GoK, 2007). Some vast scale manufacturing subsector organizations in Kenya especially worldwide assembling firms have relocated their activities to different nations. These organizations have moved, close down or scaled back their activities since they consider Kenya as one of the slightest yielding nation around the world. This is because of poor framework, high taxes and expenses. The nearby firms have not possessed the capacity to fill the assembling gaps left by the multinationals as the administration has done next to no to build up this battling subsector prompting low worldwide intensity (PwCIL, 2010; Okoth, 2012).

The manufacturing industry is identified as one of the five sectors that support economic development and national growth as listed in the Kenya vision 2030 blue print under the economic pillar. The sector is expected to be powerful and be aggressive in job creation, earning of foreign exchange, facilitating foreign investments and employment creation (GOK 2007). Unfortunately Kenya manufacturing sector is considered the least yielding country leading to multinational companies relocating, downsizing or even shutting down their business because they consider Kenya as one of the least yielding country worldwide. This is due to poor infrastructure, high taxes and high cost of energy. Unfortunately the local manufacturing firms have not been able to fill the gap left by the multinationals since the government has done little to develop the sector and thus denying them the competitiveness in the global market ((PwCIL, 2010 ,Okoth, 2012).

With a working population of over three hundred thousand which is around 13% of the total working population in Kenya, the manufacturing sector remains a key element for

Kenya's economic development .However the performance have been declining and with a stagnant growth of 10%. This was partially characterized to the crumple of private firms and conservation because of solid rivalry from shabby imports through the international trade (GoK 2007). However with the right efforts the large scale manufacturing sector has the potential to drive the economy to global competitiveness. This study will serve as a starting point in providing a roadmap in managing the linkages, technology, the manufacturing processes and in improving performance to overcome the challenge and overcome the external suppliers as envisioned in Kenyan vision 2030.

## **1.2 Research Problem**

As earlier stated, organization performance involves three areas which are product Market performance in terms of sales and market, shareholder returns in terms of total shareholder returns and the financial performance in terms of profits, return on investments and return on assets. The impact of web based technology on business has added speed or value to all these areas and activities of any business in today's dynamic global competition. Business organizations are now under tremendous pressure to improve their efficiency and responsiveness in terms of operations, resource utilization and product development. With the emerging application of internet and information technology (ICT) the companies have shifted their operations from traditional way to virtual operations in order to survive in this competitive world. According to the Aberdeen Group (2011) , E-Business has been able to realize the benefits such as shortened requisition-to-fulfillment cycles by 70%-80%, lower administrative costs by 73%, reduced prices paid for materials by 5% to 10%; cut off-contract ("maverick") buying in half; reduce inventory costs by 25% to 50% on an average.

A research by McKinsey & Co. (1999) suggested that online customer acquisition costs can be as much as four times as high as offline. Fox (2000) cautions that with e-commerce one is more or less global by default and must therefore focus on building a global internet brand that can serve a global market if one hopes to remain competitive. Marshall & McKay (2001) had some disconcerting findings with SMEs in which the interviewees were somewhat disappointed with outcomes from their e-commerce initiatives. The researchers noted that there might have been a correlation though between

this results and the apparent lack of planning, evaluation and proactive management of benefits with respect to their e-commerce activities .E-commerce is also ridden with complex hurdles that relate to taxation (Jebur et al., 2012) and lack of global harmonization of legal framework governing cross-border transactions (European Commission, 2012; Souter & Kerretts-Makau, 2012). Given the rate at which business models are evolving some remain sceptical as to which of the monetization strategies will finally succeed (Wen et al., 2001).

Mutindi et al. (2013) states that recently Kenya manufacturing industries have been experiencing challenges with regard to organizational performance especially in the global arena resulting to declining in profits. World Bank (2014) identified a decline in profits and stagnation in Kenya's large manufacturing firms for the last five years due to challenges in the working environment with a loss of an estimated 70% of the market share in East Africa being lost due to contingencies. This has resulted in many firms opting to restructure their operations or relocate or opt to serve the local market through imports from low cost manufacturing areas like South Africa and Egypt. This has resulted in loss of jobs due to high cost of operations (Myabaige & Kapchanga 2014). In summary this shows that Kenyan manufacturers are performing lowly with many profit warnings caused by the challenges operating environment.

Although there are a number of studies that have been conducted to analyze E-Business and its adoption in developing countries like Kenya there is an emerging gap in the studies conducted in the past since most of them focused on the adoption .The studies concentrated on reasons for adoption and the challenges experienced during the adoption process. Only a few have focused on the effect of adoption on the performance of business enterprise. The researcher is not aware of any study that focused on the performance of Kenyan Manufacturing firm with regard to their performance in the global business in the context of E-business.

This research study aims at finding out how local large scale manufacturing companies use electronic platforms to do business. This study will also focus on the gap that exist between what other scholars have found out about the topic and what needs to be done in order for more manufacturing companies to adopt E-business in their operations. While the adoption of E-business platforms has its challenges, previous study has showed that

the benefits outweigh them. This study sought to answer the question how has the adoption of E-business platform affected the performance of large scale manufacturing companies in Kenya?

### **1.3 Objectives of the Study**

The general objective of this study was to find out the extent of application of E-Business platforms and the performance in global operations by large scale manufacturing firms in Kenya.

The specific objectives were

- i. To determine out the extent of application of electronic business in the large scale manufacturing sector in Kenya
- ii. To establish the relationship between electronic business application and the performance in global operations by large manufacturing in Kenya

### **1.4 The Value of the Study**

This study will be useful to the manufacturing industries as it will help them know how to apply E-business platforms in their global business which will lead to better organizational performance. It will also bring into their awareness of the challenges that they are to meet and plan how to mitigate them. Electronic business will create awareness to the managers of the manufacturing companies and start using electronic as a way of doing business. It will enable them realize their potential of electronic platform globally. The study will be able to ease the managers work load for the work that can be done electronically instead of manually. The study will enable the managers to understand their market well.

The government will get to benefit in this study by recommending policy on E-business practices and the use of such systems to help in achieving the vision 2030. Researchers will use this study for reference on future research problems. The study adds to the existing knowledge on lean supply chain management. Therefore, researchers can use it to base their argument and increase their knowledge on how lean supply chains work.



## **CHAPTER TWO: LITERATURE REVIEW**

### **2.1 Introduction**

This chapter explores the various studies conducted in the area of E-business and organizational performance with a focus on manufacturing industries. Other thematic areas covered include the theoretical review, empirical studies and conceptual framework. The chapter also covers the summary of reviewed literature and the identification of the research gaps.

### **2.2 Theoretical Review**

A theoretical review establishes the other previous theories that already exist. Several theories have been put forward to explain the E-business platform and its effect on organizational performance. Some of the relevant theories to this study are discussed below.

#### **2.2.1 Resource-based view (RBV) Theory**

The RBV theory has been developed to facilitate the understanding of how organizations achieve sustainable competitive advantages (Caldeira and Ward, 2003). The theory focuses on the idea of costly-to-copy attributes of the firm as sources of business returns and as a means to achieve superior performance and competitive advantage. The theory argues that sustained competitive advantage is generated by the unique bundle of resources at the core of the firm where business owners build their businesses from the resources and capabilities that they currently possess or acquired. The RBV theory addresses the central issue of how superior performance can be attained relative to other firms in the same market by acquiring and exploiting unique resources of the firm (Saffu, 2004).

Applying the RBV theory in discussing E-business usage and value creation, Zhu and Kraemer (2005) attempted to assess the use and value of e-business in organizations. By investigating the e-business functionalities that make use of the unique characteristics of the internet, which consequently enable value creation, they posit that e-business leverages the unique characteristics of the internet to improve business performance. In this case, e-business capabilities are classified as front-end functionalities and back-end integration.

The front-end functionalities refer to the medium in which customers interact with the market space. It refers to the seller's portal, electronic catalogues, a shopping cart, a search engine and a payment gateway. On the other hand, activities related to order aggregation

and fulfillment, inventory management, purchases from supplier, payment processing, packaging, and delivery are known as back-end integration of the business (Turban *et al.*, 2006). By applying the RBV theory in looking at the adoption variations in usage and value of e-business, Zhu and Kraemer (2005) found that both front-end functionalities and back-end integration contribute to value creation and therefore promote adoption.

### **2.2.2 Transaction Cost Economics theory**

This theory evolved from the idea that transactions form the basis for economic thinking. Maunola (2009) observed that transaction costs is a cost incurred in making an economic exchange. There are different kinds of transaction in a business such as bargaining costs, policy and enforcement, information search among others. This hypothesis conceptualizes the intra organizational production as a progression of exercises connected by interrelated exchanges (David and Han 2004). In this setting an activity is the partial production of a good or service while an exchange is the phase in the movement arrangement when one finishes and another starts. This theory concept is supported by the adoption of a comprehensive interconnected network such as the EBPS platform to enhance automation of transactions (Geyskens *et al* 2006). With the many transactions taking place in manufacturing firm from suppliers to buyers, they require the backing of a digital platform to enforce and monitor all transactions effectively. Hiede & John (2010) established that recent trends indicate that buyers and sellers are supplanting the arm's length approach with alliances involving closer ties. This is imperative for a joint action for closeness between the buyer and the seller in enhancing their relationship.

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 marketplace orders online, make invoices online and manage inventories thus managing extra transaction costs.

### **2.2.3 Dynamic Capabilities Theory**

Unlike traditional RBV that views firm resources relative static and slack, Teece et al (1997) define dynamic capabilities as the ability to achieve new forms of competitive advantage which is believed more relevant to uncertain and changing environment. The term dynamic focuses on firm capacity to renew existing competences to adapt to the changing environment .Dynamic capabilities are distinctive in serving as an enabler that facilitates reconfiguring and disposing other resources. The dynamic capabilities contribute to firm competitive advantages in three fundamental ways: reconfiguring extant resources, gaining additional resources and enhancing the productivity of other resources. Dynamic capabilities approach expands its focus to the rapidly changing environment and argues that there is different principle determining organizational performance in competition in such context.

Recognizing the relevance of this approach to value creation in the changing world, e-business researchers have begun to apply the perspective to investigating e-business value. Zhu (2004) views e-commerce a higher-order capability that requires alignment among organizational factors, changing technology and business environments. Khawaja et al (2005) introduce the e-commerce competence construct. These studies do demonstrate that e-business initiatives have significant implications in organizational performance in terms of business process, resource allocation, and appropriation of IT-related benefits.

Through application of e-business-enabled capabilities, in reconfiguring firm resources and then generating sustainable competitive advantage. The conceptualization and operationalization of e-commerce capabilities can be used to measure and improve the performance of a business.

## **2.3 Forms of Electronic Business Practices**

### **2.3.1 Electronic Sourcing**

According to Bachle 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 a tendering e-

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.

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

analyses dependent on broad meetings, perception and documentation surveys directed inside focal and nearby 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 procurement.

In his study on the supply chain consisting of a manufacturer, distribution centers and retailers that use vendor managed inventory program, Walter et al (2009) found out that manufacturers inventory is reduced by low level adoption of vendor managed inventory



found out that a large proportion of these enterprises have not fully adopted information communication technology in human resource management. These organizations attributed this to lack of sufficient financial, technical and employee skills. Mose (2012) completed an investigation on the appropriation of e-procurement among large scale manufacturers in Nairobi, Kenya; the examination uncovered that dominant part of the large scale manufacturers in Nairobi, Kenya has received e-Procurement.

In a study by Nagery (2012) on the integration of ICT on supply chain operations at the British American Tobacco Kenya limited, he found out that the adoption of information technology increased the information processing capabilities of suppliers thereby enabling and supporting greater relationship and reducing uncertainties .He further found that automating business operations drives down the costs of the manufacturer-supplier relationship.

## **2.5 Conceptual Framework**

A conceptual framework is a blueprint that provides an outline on how a researcher intends or plans to conduct their study. This is a hypothesized model of identifying the concepts under a study and their relationships. The study will be guided by the conceptual framework as relating the dependent and independent variables and understanding how the variables relate to each other. Conceptual framework tries to illustrate the key relationship between variables and helps the researcher see the variables clearly. It is used to outline the possible courses of actions and the preferred approach to an idea.

## **2.6 Summary of Literature Review and Research Gap**

Due to its interest in the business world, E-Business has been studied by many researchers. Bradford & Florin (2003) studied the integration of innovation and information technologies to develop and test the ERP model and the success of its implementation. The results revealed that top management support, training, perceived complexity and competitive pressure significantly influenced the ERP adoption and

success. Stylianou et al (2003) examined the effect of various environmental, organizational and personal factors on the management towards E-commerce. In his part Ranganathan et al (2004) investigated the adoption of web technology into internal supply chain functions and how it diffuses into inter-organization supply chain networks while exploring the relevant environmental determinants. The findings were that the internal assimilation and external diffusion of the web systems significantly affect the benefits of supply chain management and the regulatory environment thus affecting value creation of E-business.

Despite these studies providing insights into the relationship and benefits of E-business, they still lack empirical attention and evidence on how the adoption and integration of E-business platforms into firms operations impacts on the organization performance. The literature review clearly reveals that E-business does create an impact on the performance of organizations. There is need for research to be done to show the relationship between the application of E-business and performance of large scale manufacturers in Kenya.



## **CHAPTER THREE: RESEARCH METHODOLOGY**

### **3.1 Introduction**

This chapter presents the various sections of the research methodology that were used in the study. It presents details of the research design, target population, sample and sampling procedures, description of research instruments, validity and reliability of instruments, data collection procedures, data analysis techniques and ethical considerations while conducting the study.

### **3.2 Research Design**

This is a plan or an outline of how the research process was conducted. It's the process through which answers to the research question were generated as stated by (Orodho 2003). Additionally, a research design is the plan of action the researcher adopts for answering the research questions and it sets up the framework for study or is the blueprint of the researcher (Kerlinger, 1973).

In this study a descriptive survey was done. Mugenda & Mugenda (2003) stated that a descriptive research was used to determine and report things the way they are. It helped to establish the current status of the population under study by minimizing the bias and maximize reliability of collected evidence. Hence it was appropriate for this study.

The main purpose of a research design is to describe specific characteristics of a large group of persons, objects or institutions, through questionnaires (Jaeger, 1988). The design will be used because of its descriptive nature in order to assist the researcher in collecting data from members of the sample for the purpose of estimating the population parameters.

### **3.3 Target Population**

According to Ogula, (2005), a population refers to any group of institutions, people or objects that have common characteristics. The population of study is the complete set of individuals, cases or objects of study who have some common characteristics of which

the researcher is interested in to generalize a finding (Mugenda & Mugenda 2003).It is from the population that a sample is taken to represent the larger population in the subject for study.

According to KAM there are 655 registered large scale manufacturing firms operating in Nairobi and hence the target population in this study was the 655 firms. The application of E-business is important and its influence on performance is relevant to this study because these firms are looking for a strategy of having a market share in the global market and enhance their profits.

### **3.4 Sample Size and Sampling Procedure**

In this study stratified sampling method was used to select companies from the various subsectors in the manufacturing industry. The strata are the various industry sectors in the manufacturing as indicated in table 3.1.Cooper & Schnindler (2006) stated that this method is appropriate when the study population's not homogenous.

According to Mugenda & Mugenda (2003) at least 10 % of a target population is considered acceptable for selecting samples in a heterogeneous population. Out of the 655 firms, 10% of it is 66 firms which were sufficient sample to study the large manufacturing firms in Kenya.

The study adopted the Cooper and Schindler (2006) formula to identify sample size .Taking a nonzero probability of selection of 0.101 the sample size will be  $0.101 = \frac{\text{sample size}}{655}$  which gives a sample size of 66 respondents. This implies that the study involved 66 large scales manufacturing firms that were selected through stratified sampling as per KAM (2013). Table 3.1 shows the sampling schedule

**Table 3.1: Sectorial Sampling Schedule**

<b>Sector</b>	<b>No.of firms</b>	<b>Percentage</b>	<b>Sample</b>
Building and mining	19	2.9	2
Chemical and allied	86	13.1	9
Energy and electronics	47	7.2	5
Food and beverage	168	25.6	17
Leather and footwear	9	1.4	1
Metal and allied	64	9.8	6
Motor and accessories	28	4.3	3
Pharmaceuticals	29	4.4	3
Paper and paper board	42	6.4	4
Plastic and rubber	60	9.2	6
Fresh produce	15	2.3	1
Textile and apparels	63	9.6	6
Timber and furniture	25	3.8	3
<b>Total</b>	<b>655</b>	<b>100</b>	<b>66</b>

### 3.5 Data collection Process

This study used a structured questionnaire to collect data .Kothari (2007) defined questionnaire as the most appropriate instrument in data collection especially when collecting large amount of information. This is because they guarantee confidentiality of

### **3.5 Data collection Process**

This study used a structured questionnaire to collect data .Kothari (2007) defined questionnaire as the most appropriate instrument in data collection especially when collecting large amount of information. This is because they guarantee confidentiality of the source of information. During data collection the researcher will try to self-administer so as to clarify any issues that may not be clear to the respondents.

The first section of the questionnaire captured the demographic information of the firm while the other sections were guided by the objectives which are the extent of E-business application and its impact on organization performance of the Kenyan manufacturing firms. Secondary data was gathered from literature

### **3.6 Validity and Reliability**

Bridget & Lewin (2005) defined validity as the degree to which a sample of test items represent the content the test is designed to measure .Validity measures the accuracy of the instruments in obtaining the data which can meet the objectives of study. In this study the validity of the instruments were established by seeking the guidance of the supervisor and experts in the field. This enabled revision and modification of the research instruments and thereby enhancing their validity. Any ambiguities in the questionnaire were cleared before it's administered for data collection.

Research instrument reliability is the dependability and consistency of a test .Using Cronbach coefficient alpha approach the internal consistency of a research instrument is established. This coefficient was recommended by Cohen et al (.2007) for its ability to give average split half correlation for all possible ways of dividing the test into two parts. The questionnaires in this study were accepted at reliability level of 0.5 and above.

### **3.7 Data Analysis**

Once data was collected, it was cleaned by identifying incomplete or inaccurate responses to improve the quality of responses. Then the data was coded and entered into a computer for analysis using the statistical package for social sciences (SPSS) version 20. Both descriptive and inferential statistics were generated and presented using frequency

tables. Inferential statistics was done using regression analysis to determine the level of significance between the variables of study. Data analysis was based on the research objectives.

### **3.7.1 Simple Linear Regression Analysis**

This is a technique that is used to explore the relationship between two or more variables. In our study used simple regression to analyze the relationship between the application of E-business and performance of manufacturing organizations. The analytical model shows how the dependent variable (performance) is affected by any changes in the independent variable (E-business applications).

The equation to be used was as follows;

$$Y = a + bX$$

Where;

Y – Performance of large manufacturing organizations (dependable variable)

X=E-Business applications (Independent Variable)

## **CHAPTER FOUR: FINDINGS AND DISCUSSION**

### **4.0 Overview**

This chapter presents the results of the analyses of data in accordance with the objective of assessing the extent of application of electronic business in the large scale manufacturing sector in Kenya and establishing the relationship between electronic business application and the performance in global operations by large manufacturing in Kenya

### **4.1 Profile of Respondent Firms**

The respondents' profile is the individual firms that take part in a market research. Profiling of firms is the process of using collective information from various firms to come up with a summarized finding about the subject. The purpose of profiling firms is to give a general overview about the intended firms for research. There will be information about the firms if they are profiled as well. This was done by way of interviewing the related parties in the firms that was used in the process of generating information from specific firms and analyzed accordingly. They were further classified into different categories such as the type of organization, the year in operation since adoptions and the sizes of the firms. The data collected was further analyzed and the specific numbers tabulated in terms of the weight and percentages each segment carries in the individual firms.

### **4.2 Sectorial Distribution of the Respondent Firms**

An organization is a collection of people who have come together for a common objective and the people divide the work load amongst each other for the purpose of benefitting the firm. The purpose of this subject was to find out how receptive the large scale manufacturing firms have embraced the use of E-business in the process of their operations. The type of organization factored in the various list of the firms that the data was collected from and how each firm responded to the application of the E-business. This information was collected through questionnaires that was answered by the respondent individuals in the various firms and tabulated in the table below.

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**Table 4.1 Sectorial Distribution of the Respondent Firms**

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<b>The Sector</b>	<b>Frequency</b>	<b>Cumulative frequency</b>	<b>Percentage</b>
Building and mining	2	2	2.9
Chemical and Allied	9	11	13.1
Energy and electronics	5	16	7.2
Food and beverage	17	33	25.6
Leather and footwear	1	3.4	1.4
Metal and allied	6	40	9.8
Motor and accessories	3	43	4.3
Pharmaceuticals	3	46	4.4
Paper and paper board	4	50	6.4
Plastic and rubber	6	56	9.2
Fresh Produce	1	57	2.3
Textile and apparel	6	63	9.6
Timber and furniture	3	66	3.8
<b>TOTAL</b>	<b>66</b>	<b>66</b>	<b>100</b>

From the above table, it was found out that the sector that highly adopted E-business is food and beverage with a percentage of 25.6%, followed by chemical and allied establishments (13.1%) in that order as shown in the above table with the least sector being leather and footwear at 1.4%. The high percentage in food and beverage is also as a result of the largest number of respondents from the firm as compared to the numbers recorded from the other firms. The lowest percentage recorded by the fresh produce firm was also as a result of the lowest number of respondent. In a nutshell many firms in the manufacturing industry has adopted the use of E-business in the business operations which has an impact on the performances of their firms as well.

#### **4.2.1 The Period in Operation since the Adoption of the E-business**

The period of existence is the time taken by the firms to adopt the E-business application since the application came to being. The purpose of the period of existence is to tell us how long the manufacturing firms have been using Electronic platforms in their operations and how it has impacted their business results since the adoption of the application. The data was collected through interaction with the employees of the intended firms and the researcher came up with a conclusive report on the same. The information was further tabulated in the table below.

**Table 4.2 The period of operation since the adoption of the E-business**

<b>Period since Adoption</b>	<b>Frequency</b>	<b>Cumulative frequency</b>	<b>percentage</b>
------------------------------	------------------	-----------------------------	-------------------

1-5 YEARS	35	35	45.5
6-10 YEARS	29	64	43.9
11-15 YEARS	10	74	6.1
OVER 15 YEARS	8	82	4.5
TOTAL	82	82	100

It was noted that there are other firms that have been using E-business in the process of their business operations. It is also apparent that all the companies involved in this study had adopted e-business with a majority having used the e-business technology for at least 1-5 years and 6-10 years at 45.5% and 43.9% years respectively. There were only few of the firms that had operated with E-business for over fifteen years at 4.5%. This is a positive trend that many firms have received the E-business adoption well but the period in existence is what differs in the cases studied. It is evident that only a few firms have been using the E-business application to do business for over fifteen years with a small percentage. This is clear indication that as the years passes by more and more firms join the use of e-business in their operations which is a positive feedback.

#### **4.2.2 The Size of the Firms**

The size of the firm can be measured and compared in different ways. One of the ways is the capital which influences the number of employees a firm can hire or accommodate. In this case we are going to look of how many manufacturing firm purposely embrace the use of E-business and hire fewer employees and how many firms prefer using the electronic business rather than hire more employees to do the same job. The information was collected thorough the interaction the researcher had with the interviewees from various firms and came up with the date tabulated in the table below.

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**Table 4.3 Size of the firm**

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<b>Size of the firm</b>	<b>frequency</b>	<b>Cumulative frequency</b>	<b>Percentage</b>
20 and below	11	11	16.7
21-40 employee	23	34	26.4
41-60 employees	13	47	19
61-80 employees	12	59	26.7
81-100 employees	5	64	11.2
TOTAL	64	64	100

It is critical to note in the table above that most of the organizations had a total of between 21-40 employees and 41-60 years at 36.4% and 19.7% respectively. The least organizations had an approximate of between 81-100 and over 101 employees at 16.2% and 4.5% respectively. This is realized that the firms with the largest number of employees have not been using the E-business for a long time hence they still rely on their employees to do the job for them unlike the firms that have fewer employees an indication that they have been using e-business for a long time as shown in the table above. From the information tabulated above, it is very clear that there is need for more firms in the manufacturing industry to adopt the use of E-biasness in order to reduce the number of employees at the same time increase the production rate.

### **4.3 The Application of Electronic Business in Manufacturing Firms in Kenya.**

This is the use of the electronic form to do business in the market. In this study views of respondents were collected on their level of agreement on the the application of e-business applications in manufacturing firms in Kenya. These are applications that are task for business purposes. They enable the customer to interact with the firms in the search for their products. The main purpose of this application is to find out how the applications of E-business make it easier to do business electronically. The main themes of analysis of benefits were categorized under e-inventory management, e-sourcing, e-payment and e-marketing application systems.

#### **4.3.1 E-inventory Management Application systems**

E-inventory is an application system that is used by many firms to supervise the flow of goods from one point to the next. It's a combined technology that majorly deals with the monitoring and maintenance of products and the same time is used in tracking of inventory,

orders, deliveries and the sales of various firms that has adopted the use of the e-business. Through the use of E-inventory, there will be some flow and order in the in the manner of which the workload is done. The table below shows us some of the techniques used in the process of E-inventory management application from reordering, stock taking, labeling to tracking of the goods in the firms.

**Table 4.4 E-inventory Management Application systems**

<b>E-Inventory</b>	<b>Frequency</b>	<b>Cumulative frequency</b>	<b>Percentage</b>
Reordering	50	50	48.5
Stock taking	44	94	40.8
Labeling	36	130	6.7
Tracking	23	153	4.0
<b>TOTAL</b>	<b>153</b>	<b>153</b>	<b>100</b>

The information provide in the table above indicates that 48.5% agreed that reordering application system was used a lot, while only 4% agreed that in tracking was used in e-inventory. The above information shows that there is need to need to put more emphasis in the form of tracking in the process of doing business at the same time

#### **4.3.2 E-sourcing application system**

E sourcing is an internet enabled application and decision support tools that facilitates the interactions between buyers and supplier through negotiation online or the process of bidding for the best price online. E-sourcing helps in reduction of prices by maximizing supplier completion and creation of the repository for sourcing. When using this application, the risk is mitigated and each party that is the customer and the firm tend to comply with the rules of the business. There are various tools used in the process of E-sourcing as selection, tendering, ordering and evaluation as shown in the table below.

**Table 4.5 E-sourcing application system**

<b>E-Sourcing</b>	<b>Frequency</b>	<b>Cumulative frequency</b>	<b>Percentage</b>
Selection	52	52	32.6
Tendering	25	77	28.8

Ordering	27	104	31.1
Evaluation	21	125	7.5
TOTAL	125	125	100

A majority of 32.6% felt e-selection was adapted to a large extent, E-ordering was also recorded that the e application system was adopted at 31.1%. E-evaluation system was adapted to a moderate extent by 7.5%. From the above data, there is need for push on evaluation to be adopted as well.

#### 4.3.3 E-payment Application Systems

E-payments are transactional exchange that takes place online. The purpose of E-payments is to make sure that the other party gets paid in the shortest and safe means possible. There are various common channels through which e-payments can be done as shown in the table below.

**Table 4.6 E-payment Application Systems**

E-Payments	Frequency	Cumulative frequency	Percentage
Electronic Funds Transfers	18	18	37.25
Invoicing	17	35	18.9
Receipt	18	53	26.5
Use of pay pal	12	65	17.35
TOTAL	65	65	100

The data in the table above indicates that many manufacturing firms have adopted the use of Electronic funds transfers at 37.25% and 26.5 % use the receipt method of payment. There has been the use of PayPal method in the manufacturing firms at 17.35%. This is an indication that the manufacturing firms are receptive of the E-payment methods since its safe and save time

#### 4.3.4 E-marketing Application Systems

E marketing is the process of planning, and execution of the initial stage of business, the distribution, promotion and prices of goods and services by the use of electronic platform. The main function of E-marketing is to reduce cost through the automation and use of

electronic media as well as also enable the user to get more information on the products before purchasing.

**Table 4.7 E-marketing Application Systems**

<b>E-Marketing</b>	<b>Frequency</b>	<b>Cumulative frequency</b>	<b>Percentage</b>
catalogue	27	27	40.15
Promotion	18	45	28
Price list	21	66	21
Online marketing	18	84	10.85
<b>TOTAL</b>	<b>84</b>	<b>84</b>	<b>100</b>

The data presented in the table above indicates that a large number of manufacturing firms still use the catalogue to market at 40.15% while a smaller part of the firms use the online marketing as a way of crating awareness and doing business. Only 28% use the promotion way to market their business.

**Table 4.8 Results on Benefits of E-business**

<b>Benefits</b>	<b>RATING</b>	<b>CF</b>	<b>%</b>
Cost reduction	4	4	4.6
Ability to reach more customers	4	8	4.9
Regional and global market access	3	11	3.4
Potential to operate with less inventory	3	14	2.9
Easier and faster to serve customers	5	19	6.1
Customer access 24/7	5	24	4.9
Lower communication costs (phone and paper work	4	28	2.6
Better prices to your customers	3	31	2.9
Enhanced collection of customer data	4	35	6.5
Reduced cost of marketing and advertising	4	39	9
Increased visibility of your business via marketing	3	42	10
Higher quality customer service	3	45	5.4
Offers convenience to customers	4	49	22
Reduced information search costs	3	52	5.9
Ease of packaging and distributing information	3	54	8.9
<b>TOTAL</b>	<b>55</b>	<b>55</b>	<b>100</b>

It was note that E-business offers convenience to their customers hence the growth of 22% was seen while it has reduced the paper and pen workload to 2.6% in the manufacturing

firms. It was also noted that a large number of firms 10% grow their business through search on information which has been made easy thanks to the use of E business at the same time we have not seen a major change on the pricing change, this is an indication that not much of the pricing can be changed by it but rather the full information on the internet is key to productivity.

#### **4.5 The Relationship between the Application of E-business and Performance in Manufacturing Firms in Kenya.**

In order to test the relationship between the dependent and independent variable for this study, the researcher subjected the data to liner regression and the coefficient of correlations was obtained as shown in the table 4.5. The model of regression was as follows:

$$Y = \beta_0 + \beta_1 X_1$$

$$Y = 3.327 + 0.164 X_1$$

Where;

$$Y = f(X_1 + X_2 + X_3 \dots)$$

$$X_1 = E-b$$

Where Y=performance (independent variable)

X=E-business application (dependent variable)

$\beta_0$  = Constant term

$\mu$  = Error term

Firstly, results of the regression analysis, it was found out that at 95% confidence level, There is a significant relationship between the independent variables (Y) and all the dependent variables ( $X_1$ ) based on the *p-value* ( $p \leq 0.003$ ) of the coefficients of the dependent variables. From the above model, it is clear that there exist a positive relationship between Y (performance) and adoption of e-business (X), based on the positive coefficient of the variable  $\beta_1 = 0.164$ . This shows that when e-business is embraced by one unit

percentage, performance of the business grows by 16.4%.

**Table 4.10 Coefficients (Y against X1)**

Coefficients								
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95.0% Confidence Interval for $\beta$	
		$\beta$	Std. Error	$\beta$			Lower Bound	Upper Bound
1	Y	3.327	.409		8.134	.000	2.510	4.144
	X	.164	.106	.189	1.541	.003	-.049	.376
a. Dependent Variable: Performance								

#### 4.5.1 Model Summary of Y against X1

The coefficient of determination ( $R^2$ ) is by definition the proportion of total variation in the dependent variable (Y) explained by the regression of Y on X1 (Koutsoyiannis), 1993). As indicated in table 4.6 R2 was found to be 0.36. Thus, it can be deduced that the regression of Y on X1 explains 36% of the variations in the dependent variable. This means that performance of business is explained by 36% of the adoption of e-business.

#### 4.5.2 Model Summary of Y against X1

Model Summary										
Model	R	$R^2$	Adjusted $R^2$	Std. Error of the Estimate	Change Statistics					Durbin-Watson
					R	F Change	df1	df2	Sig. F Change	
1	0.189a	0.36	0.021	0.322	0.036	2.374	1	64	0.003	1.221
a. Predictors: (Constant), E-business										
b. Dependent Variable: Performance										

#### 4.6 Discussion of Overall Findings

According to (Caldeira and Ward, 2003), the idea of costly-to-copy attributes of the firm as sources of business returns and as a means to achieve superior performance and competitive advantage it argues that sustained competitive advantage is generated by the

#### **4.6 Discussion of Overall Findings**

According to (Caldeira and Ward, 2003), the idea of costly-to-copy attributes of the firm as sources of business returns and as a means to achieve superior performance and competitive advantage it argues that sustained competitive advantage is generated by the unique bundle of resources at the core of the firm where business owners build their businesses from the resources and capabilities that they currently possess or acquired and on this research, the researcher try's to find out how the manufacturing firms can gain this competitive advantage. Here the researcher tends to explain that those companies which have adopted the use of E-business platform tend to be more competitive in the market as compared to other firms since their customers are able to access their information on their products easily for they are readily available.

Zhu and Kraemer (2005), looks at the front to end functionalities that make internet unique to use thus making it easy to use and improvement of the performance of firms. These functions as argued by him as the seller's portal, electronic catalogues, a shopping cart, a search engine and a payment gateway which in this research it has been found that many firms have adopted their use in their business operations which in turn improves the performance of the firms and makes their work easy. We realize that the world is a global world and everyday a new change is coming through, this research try's to point out that there is need for firms to embrace the change in order to be at the top of their game in the global market.

In this research, a cost has to be incurred by either the buyer or the seller in the process of doing business and the transaction cost has to be paid for as stated by Maunola (2009). These firms need an internet in order to get the back up they require in the process of creation of enhance automation of transactions in the firms as argued by Geyskens et al that adoption of a comprehensive interconnected network such as the EBPS platform to enhance automation of transactions. With the many transactions taking place in manufacturing firm form suppliers to buyers, they require the backing of a digital platform to enforce and monitor all transactions effectively and this can only be done if these firms adopt the application of the e-business. This research agrees that in as much

selection and qualification while Bogaschewsky, Electronic applications systems in manufacturing firms in Kenya were also one of the key areas that the researcher looked into. These are applications that are task for business purposes. They enable the customer to interact with the firms in the search for their products. The main purpose of this application is to find out how the applications of E-business make it easier to do business electronically. Some of these applications are E-inventory which is used by many firms used to supervise the flow of business through monitoring and maintenance from one point to the next level so the work load is less because of this application.

E-sourcing was another application that was found out that many firms used and it helps in reduction of prices by maximizing supplier completion and creation of the repository for sourcing and the risk is mitigated and each party that is the customer and the firm tend to comply with the rules of the business'-sourcing, E-payment and E-marketing application systems were among the applications that were found out that most manufacturing firms use in the process of their business operations. Among these applications made it easier for many firms to make payments to their suppliers or receive payments from their customers through the electronic transfers and invoicing and some even use PayPal though only a few firms used it as a mode of payments. It was found out that 37.25% used the EFT as channel for payments. At the same time e-sourcing enabled application and decision support tools that facilitates the interactions between buyers and supplier through negotiation online or the process of bidding for the best price online while E-marketing is to reduce cost through the automation and use of electronic media as well as also enable the user to get more information on the products before purchasing.

The data collected indicated that the advertisements of products improved performance of organizations. It was founded out that a majority of the interviewees from the manufacturing firms agreed that adoption of promotions indeed improved the firm's performance it is a fact that there is a significant relationship between performance and the application of e-business. The performance of any the firms depend on the application of the e-business which in turn improves the profitability of the organizations. This was argued by Kotler (2007) who states 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 firms.

The size of the manufacturing firms was also tackled, and in this case the researcher looked at how many manufacturing firm purposely embrace the use of E-business and hire fewer employees and how many firms prefer using the electronic business rather than hire more employees to do the same job. The firms that were used carry out the study were those with employees between 20-100 employees and how the bigger the number played a major role in comparing the information. It was noted that the firms with the higher number of employees had not embraced the use of e-business and thus they still depended on the employees to do the manual work for the firm while the firms with the lowest number of employees indicated that was use of the e-business in their business operations. This is a clear indication yes many firms have adopted the use of E-business but other firms still prefer the old technique of doing business rather than adopt the e-platform.

The period of existences ever since the adoption of e-business was also keenly looked into and the information gathered indicated that the performance of many firms was also affected by the use of the e-business. The data recorded that only few firms have been using the electronic way of doing business with only 4.5% having operated with e-business for over sixteen years with a good number having operated between 1-10 years (45.5 % and 43.9%). From the report, it is very evident that as the world become global, many manufacturing firms are adopting the use of electronic platform in their operations which makes their work easier.

## **CHAPTER FIVE: SUMMARY OF FINDINGS, CONCLUSIONS AND RECOMMENDATIONS**

### **5.1 Introduction**

This chapter presents a summary of findings, conclusions, recommendations and suggestions on the areas the researcher felt might require further investigation through research activity. This study sought to investigate the application of E-Business platforms and its effects on performance in the global operations of large manufacturing firms in Kenya. The conclusion relates directly to the objectives/research questions and the recommendations were deduced from discussion and conclusion.

### **5.2 Summary of Findings**

This study sought to investigate the application of E-Business platforms and its effects on performance in the global operations of large manufacturing firms in Kenya. The study made inference on the research hypotheses that adoption of E-Business platforms such as e-inventory management, e-sourcing, e-payment and e-marketing application systems have no significant influence on organizational performance among large scale manufacturing firms in Kenya. The study had  $R^2 = 0.36$ . Thus, it can be deduced that the regression of Y on  $X_1$  explains 36% of the variations in the dependent variable. This means that performance of business is explained by 36% of the adoption of E-business platforms. It can therefore be concluded that to a larger extent, majority of the manufacturers in Kenya have adopted E-Business platforms which are positively influencing organizational performance.

#### **5.2.1 The Application of E-Business in Manufacturing Firms in Kenya**

Concerning application of E-inventory management application systems, a greater majority of 75.8% agreed that e-reorder points was used to a large extent with 66.7% indicated that e-stock taking was used to a large extent. Concerning e-labeling a majority of 54.5% noted that it was adapted to a large extent. Lastly, 65.2% of respondents agreed that inventory tracking was adapted to a large extent with the rest of respondents rating the level of adoption at very large extent (34.8%).

With regards to E-sourcing application system, a majority of 65.2% felt e-selection was adapted to a large extent. On e-tendering, it was also recorded that the e application system was adapted to a large extent by 51.5% with e-ordering adapted to large extent by 57.6%. Lastly; e-evaluation system was adapted to a moderate extent by 36.4%.

With reference to E-payment application systems, a majority indicated that electronic funds transfer was adopted by 51.5% to a very large extent, Besides, a majority of 39.4% agreed that e-invoicing was used to a moderate extent .In addition, the adoption of e-receipting was majorly rated at 50% large extent and Last in this theme, the rating on use of PayPal was high at 33.3% ‘

Lastly, concerning e-marketing application systems, it was noted that e-catalogue was adapted to a large extent by 72.7% as opposed to small extent and not at all at both 7.6%. E-promotion system was adopted to a very large extent by 51.5% with use of e-price list, a majority agreed that it was adopted to a large extent by 59.1% .Lastly, online marketing was majorly adopted to a large extent by 40.9% as opposed to least by 3% both at ‘not at all’ and ‘small extent’.

### **5.2.2 Benefits of E-Business Applications in Large Scale Manufacturing Firms in Kenya**

On the benefits of the applications majority of 59.1% felt that costs had reduced to a large extent while a minority of 6.1% feeling that costs had reduced to a moderate extent. Besides, many respondents (51.5%) felt that the business reached more potential customers. On access to regional and/or global markets, a majority of 72.7% agreed with 42.4% agreeing that the business is able to operate with less inventory after the adoption. In addition, 59.1% felt the business was easily and quickly serving customers with customers being able to access services on a 24/7 basis to a large extent 74.2% as opposed to 3% who felt ‘not at all’. Furthermore, most of the respondents (53%) felt that the business was achieving low communication costs as opposed to 6.1% who felt it was not so. Concerning pricing, many respondents (51.5%) felt the business was selling its products and services to customers at a better price.

Concerning sales and profitability, most respondents (56.1%) felt they had improved as

opposed to 6.1%. In addition, 75.8% felt e-business had enhanced collection of customer data to a large extent. Besides, a majority (63.6%) felt that costs of marketing and advertising had reduced to a very large extent while 36.4% felt the costs had reduced to a large extent. Concerning increased visibility of business through search engine marketing, a majority of 65.2% rated it at very large extent. Besides, a greater percentage of 83.3% felt the business was offering convenient service to a large extent, contrary to a minority of 1.5% small extent.

Concerning cost of information search a majority of 57.6% felt the costs had reduced to a large extent as opposed to a minority of 1.5% while on ease of packaging and distributing information to specific target groups, most respondents (57.6%) felt it had improved to a large extent as opposed to 19.7% who felt the effect to a moderate extent

### **5.2.3 Applications of E-Business Platforms and Performance of the Large-Scale Manufacturing Firms in Kenya**

Generally, it was observed that a majority of 75.8% rated that it was true that adoption of e-business platforms improved performance of organizations with the least being undecided (6.1%). In addition, a majority of 74.2% indicated that it was true that procurement integrity and transparency was improved by 74.2%. Concerning performance of benchmarks, it was found true that e-business had improved benchmark by a majority of 42.4%. In addition, improved planning was rated at a tie of 34.8% true and neither. Those who disagreed were 9.1%. on improved production of quality products, 66.7% agreed. Lastly, it was agreed at 57.6% that adherence to power processes and procedures improved as opposed to 3% who felt otherwise.

### **5.3 Discussions of the Findings**

The study sought to explore the influence of the applications of E-business platforms on organizational performance of manufacturing firms Kenya in global practice. The purpose of discussion is to look at the findings of the study, compare the findings with what has been found out by other researchers and presented arguments for the findings based on what was discovered during literature review.

The study established that E-inventory management application systems practice enhances organization performance. It was established that the practice reduces tender processing time, eliminates postal, printing & storage costs, suppliers are able to access tenders/quotation/requests any time anywhere in the world, alteration of tender documents is impossible or easy to detect, neither party can deny sending or receiving documents, provides fairness to all regardless of geographic location of a supplier and it improves audit trails to a large extent.

Research findings revealed that data transmission has a significant and positive influence on organizational performance. Melville and Kraemer, (2004) asserts that data transmission which involves sending Request for Invoices and Request for Purchases to suppliers and receiving the responses from suppliers backed with the use of the internet results to improved organizational performance.

The introduction of E-business has offered numerous opportunities to businesses, including reduced costs, closer relationships with customers, increased profit and customer loyalty. At a very fundamental level, businesses operating via the Internet usually enjoy much lower overheads than their traditional retail counterparts (Liu & Amett, 2010). Raskob (2000) reported that a survey of more than 200 companies conducted by Deloitte & Touche in 1998-1999 found 80% of respondents admitting that use of some SCM-specific application was critical to improving the accuracy, timeliness, and flow of information. This literature confirms the findings of this study on the benefits of applying E-business platforms.

Firms whose profitability has been growing over a given period of time are considered to be performing well. Also, the income revenue earnings would be used to measure performance. The firms whose income revenue earnings have been increasing steadily are perceived to be profitable. The findings of this study were that adoption of E-business has led to better performance in terms of profit. These study findings, are in agreement with Wanjau (2010) and Waiganjo (2013) who noted that although performance can be measured using profitability,

#### **5.4 Conclusions of the Study**

The study sought to explore the influence of the applications of E-business platforms on organizational performance of manufacturing firms Kenya in global practice. Based on previous studies the components of E-Business were expected to have positive relation with performance of manufacturing firms. The output from the findings indicates that there is a significant positive relationship between the components of E-Business with the organizational performance.

From the regression analysis it is clear that there exists a positive relationship between Y (performance) and adoption of e-business (X) platforms, based on the positive coefficient of the variable  $\beta_1 = 0.164$ . This shows that when e-business is embraced by one-unit percentage, performance of the business grows by 16.4%.

As indicated in table 4.6 R<sup>2</sup> was found to be 0.36. Thus, it can be deduced that the regression of Y on X<sub>1</sub> explains 36% of the variations in the dependent variable. This means that performance of business is explained by 36% of the adoption of e-business.

#### **5.5 Recommendations of the Study**

Manufacturing firms need to incorporate all the E-Business components into their systems. This will enable them to improve the overall organizational performance of their firms. The manufacturing firms need to find out ways of encouraging employees to make use of e- systems. If employees are encouraged, adoption of the same will greatly improve. It is therefore recommended that E-Business systems should be concerned with trying to integrate and co-ordinate the various internal functional

areas in order to break down those functional boundaries and ensure decisions for areas like marketing, operations and financial decisions are all made using the same data.

The study established that E-tendering processing practice enhances supply chain performance positive. It is recommended that management should ensure that all modules from purchasing Requisition, Quotation/tenders, request for proposals, purchasing order approvals and Transmission, contract monitoring, Goods receipt note employ the E-Systems.

This will reduce tender processing time, eliminate postal, printing & storage costs, wide supplier base will be achieved and audit trails will be maintained thus reduction of corruption.

The study also found out that E-order processing practice enhances supply chain performance. It is recommended that in order to achieve maximum benefits of reduced order processing time, reduced costs, reduced human errors and improved delivery, management should enhance electronic system and insist on all orders being processed electronically.

The Government through the relevant ministry should institute policies concerning data handing to enhance the application of electronic business practices between the buyers and suppliers. This will improve the electronic payment, and use of electronic signature acceptance. Further the firms should provide the supplier with access credentials for the supplier portal. This will increase user's access to information in the electronic procurement process with effective internet and thus an increase in chances of selecting the best supplier company for electronic tendering.

### **5.6 Recommended Areas for Further Research**

This study is a milestone for future research particularly in Kenya. The findings emphasized the importance of the components of e-business in the organizational performance of Manufacturing firms which is e-inventory management, e-sourcing, e-payment and e-marketing application systems.

Future research will need to be carried in other industries in order to confirm if the link between e-business components and organizational performance can be generalized. A comparative study will be critical in order to establish whether there are any similarities or differences in the factors leading to success of E-business across different industries such as between private and public firms and between manufacturing industry and another. The study recommends further research to document findings on the achievements of electronic tendering system to firms. Further studies should be carried out on the challenges of e-business and their remedies.

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## **APPENDICES**

### **APPENDIX I: INTRODUCTORY LETTER**

Dear Sir/Madam,

#### **RE: RESEARCH STUDY**

I am pleased to inform you that I am a student at the University of Nairobi pursuing a Master's degree in Business administration as partial fulfillment for my degree; I am conducting research on the application of E-Business platform and performance in global operations by Kenyan Large Scale Manufacturing firms.

Please note that any information you give will be treated with confidentiality and at no instance will it be used for any other purpose other than for this project.

Your assistance will be highly appreciated. I look forward to your prompt response.

Yours faithfully,

Christina Dinda

**APPENDIX II: QUESTIONNAIRE**  
**SECTION A: ORGANIZATIONAL PROFILE**

1. Name of Organization.....

2. Department.....

3. Job Designation.....

4. Gender

Male ( )    Female ( )

5. Level of education

- i. O/A level ( )
- ii. Certificate/Diploma ( )
- iii. Bachelors ( )
- iv. Post graduate ( )
- v. Other specifications ( )

6. Has your company adopted E-Business?

Yes ( )    No ( )

7. How many years have elapsed since your company adopted E-Business

1 – 5 Years ( )

6 – 10 Years ( )

11- 15 Years ( )

Above 16 Years ( )

8. Total Population of employees in your company.....

**SECTION B: APPLICATION OF E-BUSINESS APPLICATIONS IN MANUFACTURING FIRMS IN KENYA**

9. Please indicate the extent to which the following E-inventory management systems have been integrated into the organization. Use a scale of 1-5, where (1- Not at all, 2- small extent, 3-moderate extent, 4-large extent and 5- very large extent)

<b>E-inventory management systems</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>
E-Re-order points					
E-stock taking					
E-labeling					
Inventory tracking					

10. Please indicate the extent to which the following E-Sourcing systems have been integrated into the organization. Use a scale of 1-5, where (1- Not at all, 2-small extent, 3-moderate extent, 4-large extent and 5- very large extent)

<b>E-sourcing</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>
E-selection					
E- Tendering					
E- ordering					
E- evaluation					

11. Please indicate the extent to which the following E-payment systems have been integrated into the organization. Use a scale of 1-5, where (1- Not at all, 2-small extent, 3-moderate extent, 4-large extent and 5- very large extent)

<b>E-Payment</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>
Electronic Funds Transfers					

E-Invoicing					
E-Receipt					
Use of pay pal					

12. Please indicate the extent to which the following E-Marketing systems have been integrated into the organization. Use a scale of 1-5, where (1- Not at all, 2-small extent, 3-moderate extent, 4-large extent and 5- very large extent)

<b>E-Marketing</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>
E- catalogue					
E-Promotion					
E-Price list					
Online marketing					

### **SECTION C: BENEFITS OF E-BUSINESS**

13. To what extent would say you have experienced the following **perceived benefits** associated with online trading. Indicate according to the scale shown below:

1 -not at all

2 -to a small extent

3 -to a moderate extent

4 -to a great extent

5 -to a very great extent

<b>Benefits of E-business</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>
Cost reduction for the business					
Ability to reach more potential customers					



Access to regional and/or global markets					
Potential to operate with less inventory					
Easier and faster to serve customers					
Customers are able to access your services on a 24/7 basis					
Lower communication costs (phone and paper work)					
Better prices to your customers					
Higher sales & profitability					
Enhanced collection of customer data					
Reduced cost of marketing and advertising					
Increased visibility of your business through search engine marketing					
Higher quality customer service					
Offers convenience to customers					
Reduced information search costs					
Ease of packaging and distributing information to specific target groups					

**PART D: PERFORMANCE OF THE ORGANIZATION**

14. The questions in this sub-section are on the evaluation of performance of the organization following the application of E-Business platforms. Use a scale of 1-5, where (1-definitely false, 2-False, 3-Neither, 4-True and 5- Definitely true)

<b>Benefits of online trading</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>
The overall performance has generally improved					
There is enhancement of procurement integrity and transparency					
Better benchmarks have been set up					
The planning has significantly improved					
We are producing better quality products and services					
There is increased adherence to power processes and procedures					