

**ASSESSMENT ON THE EFFECT OF ELECTRONIC
PROCUREMENT ON SUPPLY CHAIN PERFORMANCE IN
TANZANIA: BAKHRESA GROUP LTD**

**ASSESSMENT ON THE EFFECT OF ELECTRONIC PROCUREMENT ON
SUPPLY CHAIN PERFORMANCE IN TANZANIA: BAKHRESA GROUP LTD**

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**A Dissertation Submitted in Partial Fulfillment of the Requirements for the Award
of Master's Degree of Science in Procurement and Supply Chain Management
(MSc PSCM) of Mzumbe University.**

2019

CERTIFICATION

We, the undersigned, certify that we have read and hereby recommend for acceptance by the Mzumbe University, a dissertation entitled the **“effect of e-procurement on supply chain performance in Tanzania”** in the award of the Master’s Degree of Science in Procurement and Supply Chain Management.

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DECLARATION AND COPYRIGHT

I Josephine Alfred Mayunga, state that this dissertation is a product of my own hand and it has not been done and submitted to any university/college for any academic award especially for any other degree award.

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Last but not least, appreciations are expressed to my aunt Eliminata Misana for her moral support.

DEDICATION

This work is entirely dedicated to my father Alfred, my mother Lydia, my brother John and my sister Janemary, who had been the source of inspiration and continually supported me emotionally, spiritual and financially. Thank you for your unwavering endurance.

LIST OF ABBREVIATIONS AND ACCRONYMS

APP	Annual Procurement Plan
B2B	Business to Business
B2C	Business-to-Consumer
EDI	Electronic Data Interchange
EP	Electronic Procurement
EPS	Electronic Procurement System
ERP	Enterprise Resource Planning
ICT	Information and Communication Technology
IT	Information Technology
LTD	Limited
MRP	Manufacturing Resource Planning
PE	Procurement Entity
PMIS	Procurement Management Information System
PP	Public Procurement
PPRA	Public Procurement Regulatory Authority
PLC	Product Life Cycles
SRS	Simple Random Sampling
SC	Supply Chain
TAM	Technology Adoption Model
Y2K	Year 2000

ABSTRACTS

This researcher intended to assess the effect of electronic procurement on supply chain performance in Tanzania. Specific coverage of this study was intended: to analyze influence of electronic tendering on Supply Chain (SC) performance, to examine influence of e-informing on SC performance, and to estimate contribution of e-payment on SC performance. Investigation was conducted at Bakhressa Group Ltd located in Dar es Salaam region. From the population of 193 a sample of 130 respondents was obtained. The methods of data collection were documentary, questionnaire interviews, and observation the selection techniques of the respondents were purposive sampling and simple random sampling. This study involved mixed strategies which were qualitative and quantitative analysis. From the findings it was observed that e-tendering is positively and significantly influencing Supply Chain performance. Furthermore, the researcher noted that e-informing is also positively and significantly influencing supply Chain performance, likewise, e-payment is contributing positively to Supply Chain performance in Tanzania. On the basis of the above findings, the study recommends that Tanzania Government should analyze and advance its e-tendering activities in order to ensure that it not only stays positive and significant, but also progress it. It is suggested that the administration is required to ensure that all modules from purchasing requisition to good receipt note should be controlled through e-procurement. This will eradicate waste in procurement process such as delay, postal; administration cost, auditing will be easy and well maintained, as well as corruption will be reduced. Moreover, as e-informing positively and significantly influence supply chain performance, it is necessary for organizations to collect information for supplier qualification which includes: experience, previous clientele as well as disseminating that information to the appropriate suppliers.

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CHAPTER ONE

PROBLEM SETTING

1.0 Introduction

In this chapter the researcher provides the background information concerning electronic procurement in Tanzania especially on supply chain. Also the researcher provides the statement of the problems, general and specific purpose of the study. Not only that but also the researcher provides the research hypothesis, scope of the study, implication of the study and organization of the study as well as limitation of the study.

1.1 Background of the Problem

Information and communication technology in the twenty first century is becoming an enormously vibrant field. This has had a significant impact on the procurement industry. E-acquisition in Tanzania is an evolving practice. Procurement has beneficial and negative impacts and implications that individual, working groups, organizations, inter-organizational networks and societies as a whole experience. Information technology is involved in all sectors, both government and private. Understanding the connection between IT and social organization in many disciplinary areas such as procurement is an increasingly significant and urgent social and academic issue.

The ICT advance has changed the worldwide business condition and now services based on technology is not an idea but it is an absolute necessity for associations (Barngetuny & Kimutai, 2015). ICT has turned out to be fundamental for organizations to furnish their clients with improving efficiency, meeting customer expectation and better consumer loyalty with inventive thoughts and strategies (Mayunga, 2008) Changing of business environment required companies and organization to be more flexible so as to continue to stay in the market as a profitable company or organization.

Procurement is a vital function in the organization as it affects all the operations, financial position and relationship with suppliers and customers in the organization as it is cross cut in all organization departments (Wachira, 2013). Procurement function contributes tremendously to organization efficiency and effectiveness so as organization to obtain extraordinary advantaged and been able to meet customizer requirements it required to procure good, service and works at the required time, from the alternative source of supply, with the required quantity and quality in the reasonable price to both parties (Munubu *et al* 2017). The advance of ICT considerably change the role of procurement by enabled procurement to focus on the strategic polices rather than day to day functions and help companies or organization to stay profitable in the market. It believed that the growth of enterprises and organizations become more widely by the help of e-procurement system connected with the help of other infrastructures of IT (Vaast and Walsham, 2009).

Electronic procurement is defined as using of ICT in conduction of procurement activities such as electronic tendering, e-information, e-submission, e-payment and e-advertising (Makoba *et al*, 2017). The changing of procurement operation from manual procurement to electronic procurement change the supply chain performance automatically because procurement is the main root of supply chain; (Ngeno and Kinoti 2017).

E-procurement considered being a new innovative strategic view of supply chain and implementing of this system might create value, increase operation and accountability in the enterprise or company through utilizing IT enabled resources on supply chain performance (Hsin *et al* 2012). Simply e-procurement is an e-business application that contributes to supply chain performance, however the extent of its uses differ in term of depth (how much organization relies) and breadth (range of functionalities) from on organization to another (Hassan 2013).

Otekiet *al.* (2017) states that to remain in competitive edge in the market, is the focus of every firm. In this regard Bakhresa Group Limited realized the importance of e-procurement in order to accomplish it proper control and coordination of supply chain function such as procurement, warehousing, material handling and transportation is very important. The changing of procurement activities to e-procurement automatically changes the supply chain implementation because procurement is the heart of supply chain activities (Ujakpa *et al.* 2016).

Electronic procurement (EP) is defined as the process of obtaining goods or services via online usually through the internet source. Genesis, electronic procurement may be seen as begin as the 1980s, with advancement of MRP systems to MRP II followed to ERP systems in the 1990s (Tobias and Tummala, 2007). Furthermore, EDI may also known as a form of electronic procurement. E-procurement systems passed through a transmission in the late 1990s (Puschmann and Alt, 2005) because of the creation and advances of IT and internet, the great advantage attainable through this tool, and perhaps also for the reason of the fear related with the Y2K issue. Though organization was gaining experiences with this existing technology, research articles intended to get of what was happening, signifying, and testing relationships, and giving best practices, frameworks as well as models.

However, E-procurement is not a latest method but in Tanzania is at newborn stage (Suleiman, 2013). Sijaona (2010) has noted that “*the most key challenge for Tanzania to Adopt E-procurement include Policy and Legislative framework, Institutional structures, Procurement processes, ICTs and People*”. This is concurred by Edie *et al.*,(2007), by discussion the main obstacles for underdeveloped countries to engage in electronic procurement are lawful problem, technology problem as well as security issue. It is real that inadequate of completed research and findings on the field of electronic procurement in Tanzania has result the Government of Tanzania to be delayed to engage in electronic procurement and gain the fruits of this new system to the public institution (Suleiman, 2013). Identification of electronic procurement in lately initiated PPA of

2011 is a critical step toward complete employment of e-procurement in procurement activities. It's recognized in sect 9(j) "determine, develop, introduced and update related system to support public procurement by means of information and communication technology including the use of public electronic procurement". PPRA support the implementation of e-procurement by establish the Procurement Management Information System (PMIS) so as to smooth the communication between PPRA and PE's in term of checking and monitoring all procurement activities, enabling online submission of monthly reports, Annual Procurement Plan (APP) and check list form (Sijaona 2010). Not only that but also some indicators has been used in PPRA website for evaluation of e-procurement such as tender portal where suppliers are capable of viewing all tenders available, and access all information available for contract awarding deferent PE's. Other interventions are <http://www.ppra.go.tz> "website based on sharing of Public Procurement (PP) news and knowledge, <http://tender.ppra.go.tz>"special portal for tendering procedures" and <http://forumsppra.go.tz> .

1.2 Statement of the Problem

Electronic procurement system (EPS) is the system which designed as a phenomena to better the procurement functions for many institutions both public and private company. Through the usage of internet, e-procurement system better the effectiveness in several stages of procurement procedures such as sourcing, ordering process, monitoring and evaluation of procurement process as well as integration the information sharing (internally and externally) with trading partners (PPA, 2011).

Furthermore, the acceptance of e-procurement in Tanzania is a new tool though some establishment was conducted by only some private organization particularly owned by foreign investors mostly (Suleiman, 2013). Public procurement is still practicing their procurement activities through the old procurement which are done manually in most case, while they are in slowly progressing step toward adoption of modern ways of

procurement. This invitation is for all organization (public and private) in the country to operate their procurement function electronically (PPRA journal, 2019).

Muinde (2014) carried out a series of research about the role of electronic supply and procurement in improving the performance in the procurement of saving and credit cooperatives at Kitui teachers sacco. Muhia (2015) did a research on implementation of e-procurement and procurement performance at Kenya Revenue Authority. Chesire B.C and Kimutai (2015) report a study on effects of e-procurement on supply chain management performance in Kenya, Jyh-Jeng Wu and Shu-Hua Chien, (2016) also report an investigation on the impacts of electronic procurement value to SC performance.

Ruzindana *et al* (2016) conduct research report focus on the implementation of electronic procurement and its consequence on the procurement function of chosen telecommunication organization in Rwanda. Existing empirical studies very essentially, current there were comparatively several studies to analyze effect of electronic procurement on supply chain function in a private company context.

Against this background, an in-depth research of the implementation of e-procurement explicitly addresses the gaps, within the private sector and to analyze effect of electronic procurement on SC performance.

1.3 Objective of the Study

1.3.1 General Objective of the Study

The general research objective of the study was to assess the effect of E-procurement on supply chain performance in Bakhresa group LTD

1.3.2 Specific Objectives of the Study

- i. To analyze the influence of e-tendering on supply chain performance
- ii. To examine the influence of e- informing on supply chain performance

- iii. To estimate the contribution of e- payment on supply chain performance

1.4 Research Hypothesis

1.4.2 Specific Hypothesis

The researcher includes special hypothesis in this dissertation as follows:

H1: Are there influences of electronic tendering on SC performance?

H2: Are there influences of electronic informing on SC performance?

H3: What are contributions of electronic payment on SC performance?

1.5 Scope of the Study

The study focused on determining the outcome of Tanzania's electronic procurement on SC results. Specifically, however, the research scope was; evaluating the effect of electronic tendering on the quality of the supply chain; investigating the influence of e-informing on SC performance; and estimating the contribution of e-payment to SC performance.

1.6 Significance of the Study

This study has some remarkable significant such that this add knowledge to the existing body of literatures that are related to electronic of electronic procurement in Tanzania and the world at large. Also the study findings will be used by different stakeholders to make decisions on how to improve the online procurement in Tanzania particularly the public institution which are the giant play role in the country.

This study will be used for policy improvement so that the industry will have a reliable market to sell their products and being able to meet their production cost. Moreover the findings of the study also serve as a benchmark to other organizations who intend to adopt e-Procurement.

It would enable them to understand the contribution of e-procurement on performance of supply chain management in organization. To future researchers and academicians, the

study add knowledge to e-procurement and performance discipline, and would also help them in carrying out further and related studies in public procurement as this study avail critical information in formulation of policies and regulations with its alignment.

1.7 Organization of the Study

This dissertation has been organized six chapters that is Chapter One comprises introduction to the study, setting of the problem, statement of the problem, research objectives both main and specific ones, research hypothesis, implication, limitations and the scope of the study. Chapter Two comprises literature review both theoretical and empirical parts, and conceptual framework. Chapter Three comprises area of the study, research design, targeted population, unit of analysis, sample size, sampling technique, data collection methods, data analysis, validity and reliability of data. Chapter Four comprises the presentation and analysis of findings obtained questionnaires and interviews. Chapter Five comprises discussion of the findings based on the study objectives presented in chapter Four. Lastly, chapter Six comprises of the study summary, conclusion and policy implications.

1.8 Limitation of the Study

Unavailability of top management, the top managers were busy as they claimed to have so much to do hence making it difficult for the researcher to get specific data from them. Their unavailability made it necessary for the researcher to wait for a long time to get an appointment and sometimes convinced them on giving me the information the researcher needed when they were having short breaks. Confidentiality, some of the Company's data were very confidential hence it made it hard to get all the information desired. Sometimes the researcher had to convince them by outlying the importance of this research so as to obtain the necessary data. For the information which was very confidential, the researcher had to use the little available data so as to meet my objectives.

CHAPTER TWO

LITERATURE REVIEW

2.0 Introduction

This chapter entails to discuss the review of literature by starting with definition of key concepts so as to inform leaders what is meant by a certain term or concept. Also, the theory that was used in this study which stipulated the relationship exists between theory and the study itself. Apart from that this chapter explains the empirical part of the literature review whereby different studies that were done in the past time and different places are reviewed in order to assess what was discovered. Finally the conceptual framework has been drawn so as to show the relationship between independent and dependent variables. In this respect there was a linkage of how variables do relate to one another.

2.1 Definition of Key Terms and Concepts

2.1.1 Procurement

Procurement is defined as a different ways whereby public and private institution may obtain what they required for their functions accordingly to their specification. Procurement is a part of the activities which are in highest part of supply chain to act as link of customers and organization to get what they required. Amount of money is spent by the company for the acquisition of several items which includes: goods, services and works at several phases of manufacturing and services (Consultancy and non-consultancy) (Snider and Rendon, 2001). Furthermore acquisition is planned originally to connect the organizing suppliers to the planned purpose of the entity. Procurement elucidates the planned purpose of an entity through finding what is needed that will help the company to attain the same. Procurement in public entity was usually ignored and recognized by malpractice that will result to waste of public funds. This is why the

majority of Governments globally have included technology in acquisition process to ensure reduction of waste (Snider and Rendon, 2001).

Several of study explained online procurement in different ways: Parida (2005) state that electronic procurement is a technology way of using internet to simplify the acquisition of requirement. More importantly an online acquisition practicing that link acquisition, business partners, enlarges business effectiveness within the SC, and then gives planned e-business abilities in internet point: Process which facilitate the selection activities through online and helps an effective bargaining between buying organization and seller organization (Gimenez and Lourenco, 2004).

The automation of the acquisition process such that finding of vendors, selection of vendor, consignment trucking, and order payments can be done through an online sytem (Bhaskar 2005).

2.1.2 Acquisition Process

Acquisition process regarded as obtaining of products, yet it don't just contains of getting and paying yet include numerous activities too, for example identification of requirement, order processing. The objective of the acquisition process is to fulfill the requirement of entity by obtaining products from favored providers at the significant cost (Mangan, 2008).

Electronic procurement regarded as the application of integrated ICTs to undertake the personal or all phases of the acquisition process such that finding of suppliers, compromise of supplier, requesting, delivery, as well as contract management and administration (Croom & Brandon, 2004). Though having several ways of electronic procurement that focused on one or more phases of the acquisition process like electronic tendering, electronic marketplace, Reverse public sale, electronic catalogue. Online purchasing can be showed widely an ending resolution that links and connects more acquisition process within organization.

2.1.3 Administrative Performance

Administration performance involves the real outcomes of an entity as considered against its expected outcomes. According to Richard *et al.* (2009) “*organizational performance encompasses three specific areas of firm outcomes: Financial performance (profits, return on assets, return on investment.); Product market performance (sales, market share); and Shareholder return (total shareholder return, economic value added)*”. Organizational performance is possibly the majority broadly used reliant changeable in managerial investigate now days, however at the similar period it stays as vaguest and insecurely detailed construct. The main problem to organizational performance is the outer atmosphere. Most of organizations act inside the outer atmosphere. The problem that can occur from the outer atmosphere involves political, economic, socio-cultural, as well as environmental and technological (Snider and Rendon, 2001).

Organizational performance's main objectives are to increase organizational efficiency and effectiveness to enhance the organization's capacity to deliver products and/or services. Another area of organizational performance that is sometimes aimed at continuous improvement is organizational effectiveness, involving the process of setting organizational goals and goals in a ongoing cycle.

2.1.4 Business To Business

Business to business is transaction between companies, recognized by comparatively bulk, competitive and constant prices, quickly delivery period and frequently, on overdue payment basis such as complete sales.

2.1.5 E-Procurement System (Eps)

E-procurement System is an online application designed to be used instead of using manual acquisition system. It helps procurement function in term of operation, management, marketing, ordering and supplying, and between organization modules.

EPS is designed to converse with the procurer's and vendor's information systems through the firm information systems doorway.

2.1.6 Supply Chain Management Practices

Presutti, (2003) has explained SC performance as an examination of SC management that involves both visible and invisible factors. Wiengarten et al (2010) noted that EPS is more essential than numerous electronic business applications when studying SC performance as in the recent economic atmosphere, a worth invention outlook is vital for advancing SC performance. A procurement system is an important element of a firm's supply chain system. Typically, a firm's acquisition activities is classified into planned and prepared processes as functions and priorities in these two areas are completely different (Turban *et al*, 2000).

Supplier management, the process of buying requisitions and acquisition oriented output progressive is activities that are naturally kept to planned acquisition. Electronic procurement helps firms to distribute transactional acquisition process and consolidate planned acquisition processes. This lead to upper SC simplicity gave by EPS. Purposeful, electronic procurement will enable to centralize acquisition practices that will result to better discounts and improved services from vendors. It as well disseminates the flow of vital information between the procurer and vendor, minimize clerical time hence release the staffs to work on other task. This permits the firm to reply fast to great competitive new business entry and advance the probability of gaining new market.

2.1.7 Theoretical Literature Review

Under this part, the section discusses the theories of this digital procurement dissertation involving three theories; cost theory of operation; resource-based theory; and perspective theory of electronic technology.

2.2.1 Operation Cost Theory

Operations cost economics expresses that firm face the challenges of opportunism when they are in a condition bargaining with other firms. Thus next there are large number of vendors minimize this risk and win the firm the capability of bargain great purchasing offers since the procurer is independent on any exacting vendor (Dedrick *et al*, 2008) Furthermore Dedrick *et al*, (2008) explain that the vendors selected by the firm encompasses an best stability among the next main transaction factors: Vigorous, synchronization costs and risk opportunism.

IT has the latent of minimizing synchronization costs as acquisition processes are consistent and computerized, therefore minimizing the cost of running with large number of vendors. This typically gains the procuring firm particularly for product items like copper pipes. IT permits firm to minimize the several of vendors and concentrate on minimal cost vendors of typical products and centralized their acquisitions to get bulk discounts (Dedrick *et al*, 2008). The application of IT simplifies the minimization of synchronization costs. For instance, online market point, simplified via IT, minimizes the cost of finding and getting information about item prices and assistance (Bakker *et al*, 2008). Alliance simplifies sharing of information by reducing business costs since firms may minimize SC improbability and therefore the contracting cost. For instance if a vendors is not capable to truly forecast the price of its items, it will be unenthusiastic to go in a deal, which tresses it into a constant price for an extended time (Arrowsmith, 2002).

Improbability in the perspective of supply chain, and purposely, in production, is resulted by new product progressive insecurity, order improbability, technology improbability, and supply improbability (Koufterous, 1999). Supply improbability associates to impulsive outcomes that exist in the top part of the SC. Among the causes to supply improbability, deliveries are not on time and stock out of materials. Obviously, supply improbability may interrupt production and there is poor impact on sales where

distributors and retailers lower the chain are also interrupted. Order improbability may be detailed since erratic outcomes that existing the lower part of the SC (Koufteros, 1999). Order improbability may be a product from new existing items, short PLCs, unpredictability of fad (Johnston, 2005).

The concept of improbability is the input of TCE, which predicts that persons do opportunistically and has bordered reasonableness. The business cost text didn't compose a difference between different ways of improbability. Current text has disaggregated the construct of improbability (Melville et al, 2004) For instance, (Wendin, 2001) has composed on (Khalifa & Shen, 2008) and differentiated between primary and secondary behavioral. Primary improbability regarded as the principal business and arises from mostly exogenous sources like technology, improbability associating with original outcomes, customer favorites, rules, and improbability concerning with origin outcomes (Suleket al, 2006). Key improbability can cause to synchronization harms, technological problems, and communication difficulties that may like an impact harmful result the implementation of business. Secondary improbability on the numerous hands regards the threat of chances on business that are implemented via partial deals.

2.2.2 Resource Based Theory

Lambert (2005) stated that aggressive gain for a company may be generated on its resource base. The resources of the company go further monetary and stocks to cover processes. The interior capability of a firm is very vital. When the firm has necessary income, it has capability to invent and treaty innovatively with existing irritation in the business. The look for IT is critical in SCM and purchasing (Pressuit, 2003). In field of IT, resources base theory was recognized as new place that may examine the sources and maintaining of IT (Baily, 2008). Caridiet al, (2004) IT may be measures as monetary payment that result from planned inputs. Bales and Fearon, (2006) view IT as consistence for the reason of the resources on which IT is based are limited, expensive,

cannot be imitated, and are not substituted. Moreover, Guinipero, (2008) restated that resource base theory is relied on the notion that the resources controlled by organization are diverse and comparatively static.

In this research, e-procurement was regarded as a strategy that optimizes the use of accessible resources to improve supply chain performance efficiency and effectiveness and thus provide a competitive advantage. In this situation, the competitive advantage shows enhanced lead times, cost effectiveness and client satisfaction. Electronic procurement results to great synchronization and utilization of purchasing resources towards flawless acquisition process that influence SC performance.

2.2.3 The E -Technology Perspective Theory

Electronic procurement helps clients and sellers to enlarge connection control through the internet source in term of manufacturing planning, order management, stock management (Lee, 2003). The articles by Min & Galle, (2002) noted that the wide scenery of electronic purchase which regards electronic procurement as a transaction to transaction acquisition process that uses online purchase to recognize key sources of supply to acquisition of products, relate with vendors and transfer payment. The internet was widely accepted by firm with the intention of advancing organizational performances together in interior methods and exterior methods.

Regardless the true truth that B2B trade has enjoyed a longer survival electronically than B2C (Barratt and Rosdahl, 2002) the gain of online purchasing in a B2B situation are important (Min and Galle, 2002). Earlier investigates have argued that electronic procurement has happen to the means that permits firms to combine their SC from one to another from vendor to the users with mutual performance, accessibility and pricing data that permits procurers and vendors to perform to best and shared gain activities and prices (Morris *et al*, 2000).

Frequently firms accept EPS so as to manage the buying items and services (Min & Galle, 2002). In outline it was well known that the factors of e-procurement implementation still in determining phase, diminishing short of the kind of e-cooperation and e-sourcing recommended by (Morris et al, 2000). Generally e-procurement phenomena are straight public sales and electronic catalogues where repeal public sales still not accepted with vendors (Basheka and Bisangabasaija, 2010).

2.3 Empirical Literature Review

Barngetuny and Kimutai, (2015) noted that findings express that, in connection of electronic payment and SCM the results of the investigation has been that mainly percentage of seventy point four of the respondents strongly accepted that there are safe and minimal cost acquisition activities. The truth that the mainly of the respondents accepted that there is safe and minimal acquisition operations and was translated to denote that electronic payment has a main implication in the firms activities. The capability to minimize invoicing period, mainly protection of data, as well as other atmosphere gain has done electronic payment to be extra relevant in the firms performing in the nation. Moreover, the investigation recommend that, the method must influence public monetary controls and advancing, recording and reporting via accurate method of payment with consider to all the vendor and procurer. Furthermore, electronic procurement method must be precise with demand, sourcing, awarding of the contract and invoicing. The purpose of the electronic purchasing in the firm must be to influence the fitness of government services release in the nation and to give on time, clear and correct monetary and accounting information diagonally all the national and state government.

Nepelski (2006) conducts an e-procurement discussion paper on the number of vendors. Where to go? This article examines how the organization of financial operations is affected by electronic procurement. It aims proof of changes in the way businesses organize their businesses and whether ICT leads to more competitive and transparent

markets. The findings show that the effect of the technology in inquiries on firms' tendering decisions different from company to company. In the similar means, the kind of products acquired electronically may have several impacts for tendering methods of firms performing in diverse business. In two out of three companies, the changeable monitoring for company size had an important effect on the possibility of a company enlarging its several of vendors. This shows that the effect of Information and communication technology on interior task company, make or buy decisions and collaboration with vendors and consumers is not different for each firm. Moreover, so as to get a full image, next investigation must integrate the paradoxical impacts of several information and communication technology on firms' make or buy decision, tendering processes and Work Company.

According to Jyh-Jeng Wu and Shu-Hua Chien, (2016) report on the impact of online acquisition value to SC performance. On his investigation intends to examine the outcomes of contributors drive, method combination, and value added services on SC performance, and the function of online purchasing wealth as a mediating function. The findings show that contributor drive, method combination, and value added services have a positive significant impact on online purchasing value and more influence the SC performance.

Nyanamba, Ondieki and Okibo, (2013) report a study on the impacts of online purchasing function on efficient acquisition in public health sector. The objective of the report has been to analyze the impact of electronic procurement on effective acquisition in public health sectors. The report revealed that the biggest problems faced by the respondents when using e-business provider has been insufficient income, firm's incapable to manage changes, training is no provided to staffs completely on how to utilize the system, acceptance of electronic procurement at a low rate, insufficient replying to questions by the system vendors, vendors not ready to utilize this sytem and poor invoice when utilizing the system all to the health center and the vendors. The study suggest that health center must try as well to deal with problems faced by the units

includes insufficient capital, organization's incapable, to deal with changes, training to staffs is not sufficient on how to utilize the system, acceptance of electronic procurement at low rate, poor replying to questions by the system supplier, vendors not ready to utilize this system and poor invoice when utilizing the system all to the health sector and the vendors.

According to Rosli and Songip, (2017) done e-procurement efficiency paper in Malaysia. This research is also suitable for understanding the issues encountered during the E-Procurement system execution. This study shows how the efficiency of the supply chain in Group Procurement has benefited from e-procurement. E-procurement system is the high-tech components comprising four aspects of the procurement scheme: electronic assessment, electronic procurement, electronic layout, and electronic negotiation. To guarantee the success of e-procurement and supply chain management, these three intermediate factors play a significant role.

According to Padhi and Mohapatra, (2017) done a study on adoption of e-procurement in the government department. The purpose of this study is to explore the enabling and inhibiting factors that affect the adoption of electronic procurement (e-procurement) in government departments of Orissa in India. Using these constructs, ten hypotheses were developed and tested in the framework of structural equation modeling. The results indicate that management policy effectiveness and IT-readiness encourage the adoption of e-procurement and simultaneously reduce imperfections and enhance effective procurement in the government organizations.

Ruzindana and Prashant, (2016) did a research on acceptance of electronic procurement and its outcome on the acquisition performance of chosen telecommunication firms in Rwanda. The report collected data from the respondents of new Airtel in Rwanda by using open and closed questionnaire. The findings show that TAM is revealed to be best utilized in the area of IS for the acceptance of hottest technologies. This report has been conducted to discover and know the influential drivers for acceptance of EPS.

Furthermore, a report suggests that to advance acceptance point at staff's level, the firms have to do analysis on drivers concerned to apparent dangers, which will better acceptance of online purchasing system.

2.4 Conceptual Model

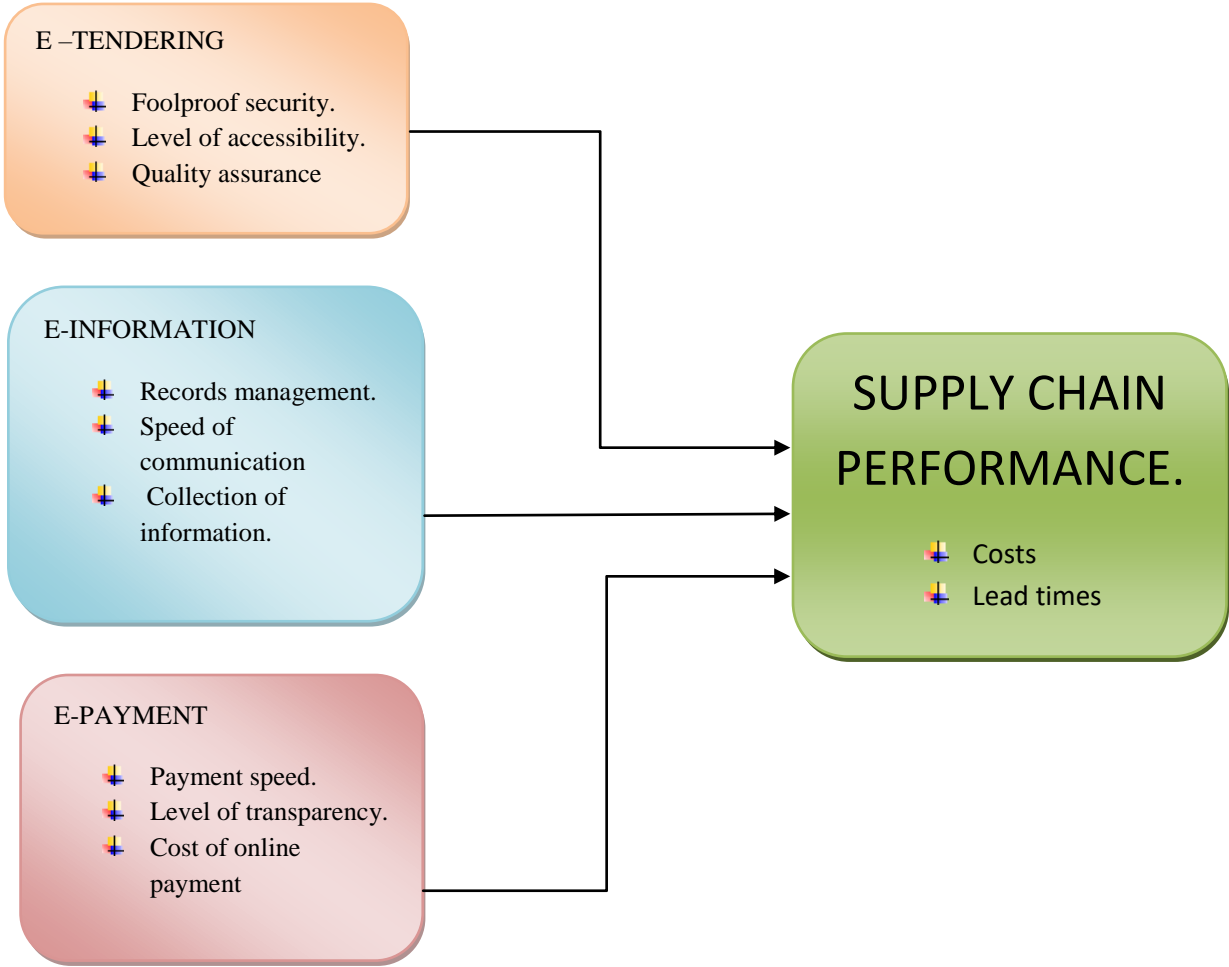
A conceptual model is also known as a logical framework (Kothari, 2004). Lester (2005) states that, *“a conceptual framework is an argument that the concepts chosen for investigation, and any anticipated relationships among them, will be appropriate and useful given the research problem under investigation”*. *“A conceptual framework explains either graphically or in a narrative form, the main dimensions to be studied, the key factors or variables and the presumed relationships”* (Maxwell, J. 2004).

A conceptual framework does the following, first provides coherence for research, secondly, provides a scheme for selecting and prioritizing variables that are of interest, third the researcher; introduces explicitness to research processes, fourth enables readers to be clear about what the research seeks to accomplish and how it will be accomplished. In this study the dependent variable is supply chain performance measured in term of lead time and operating cost and independent variable that influencing the supply chain performance are e –tendering, e-information and e-payment explained in the figure 2.1.

Figure 2.1 The Conceptual Framework

INDEPENDENT VARIABLES

DEPENDENT VARIABLE



2.4.1 Relationship of the Variables

2.4.1.1 Electronic Tendering Influences on Supply Chain Performance

Boudijilda and Pannetto, (2013) stated that the system of electronic tendering and its process may be simplified by the attainment of required doctrine which includes: transparency and accountability in the government offices as the influential activities of timing, flexibility, cost minimization in the tendering process. Electronic tendering is a key of emphasizing the efficiency and effectiveness of activities in the government sector tendering and giving a reasonable cost gain. During the analysis of multiple regression, Kamotho, (2014) revealed that in the electronic procurement elements under determination, electronic tendering had the slightest impact on the acquisition performance. Chwkwony, (2015)'s investigation discovered that electronic tendering had positive significant relationship with the SC performance.

2.4.1.2 Electronic Informing Influences On Supply Chain Performance

Electronic informing has been revealed to have a positive significant impact on SC performance. Thus, the utilization of internet technology to collect and disseminating acquisition information lead to advanced SC performance. In compliance with the results of the investigation, Li *et al*, (2005) stated that sharing of information simplifies convey of grave and relevant information to one's SC partner thus cause to best performance of the SC like wisely, Croom, (2003) expressed that electronic informing enables fitness with correctness, appropriateness, sufficiency, integrity, as well as criticality hence addition perceptible SC performance. In connection with results of the investigation, a report by Presutti, (2003) noted that genuine period of time sharing of information in the electronic design minimizes hours to business hence advancing SC performance.

2.4.1.3 E-Payment Contribution on Supply Chain Performance

Applicability of electronic payment is influencing SC performance, which electronic payment is an area which grows fast in the world wealth and then approximately contains necessity further evaluation. It gives customers with gains of several period of time, wherever business, with minimal costs. Standing, (2001) argued that addition ten electronic payment gains for all the procurer and vendors. For example cost benefits and fast in supplying and buying, introduce new client globally, easy and open to users, superior of products, minimize requirement for office room and optimal resources needed. After conducting the analysis it was found that, Payment speed, Level of transparent and Costs of online payment have tested to be reliable and valid to the explanation on e-payment influence supply chain performance.

CHAPTER THREE

RESEARCH METHODOLOGY

3.0 Introduction

Methodology is global style of thinking a general approach for studying research topics or an overall research strategy (Mligo, 2016). This chapter comprises of area of the study, research design, targeted population, unit of analysis, sample size, sampling technique, data collection methods, data analysis, validity and reliability of data. This is because research methodology directs the researcher which instruments, type of design that is needed to be followed in the study.

3.1 Research Design

There is no single way of doing research. How any research is carried out depends upon a range of factors: ontology (beliefs about the nature of social world and what can be known about it), epistemology (the nature of knowledge and how it can be acquired), and goals of research, position and environment of the researchers themselves (Mayunga 2008).

According to Raj (2007) research design inhabits very significant position and place in the study of all research problems. It determines the fate of the proposal and its result. In other words, research design is referred to the platform that guides the researcher in the all aspects of collecting data, analyzing them and then interpreting observations. It involves a systematic way of procedures to be followed by the researcher (Krishnaswami, 2013).

Rogers (2012) defines research design as the scheme, outline or plan that is used to generate answers to research problems. It constitutes the blueprint for the collection, measurement and analysis of data. In this study, a cross-sectional research design employed by involves looking at people who differ on one key characteristic at one

specific point in time. The data is collected at the same time from people who are similar in other characteristics but different in a key factor of interest such as age, income levels, or geographic location Kothari (2008).

The research design used by the researcher is cross- section. This study allows researcher to analyze data from the area of study, population or a representative subset just once. There several advantages of using cross- sectional study such as firstly, they're inexpensive and fast. Cross-sectional studies are usually relatively inexpensive and allow researchers to collect a great deal of information quite quickly. Data is often obtained using self-report survey and researchers are then able to amass large amounts of information from a large pool of participants. Secondly they allow different variables; researchers can collect data on some different variables to see how differences in sex, age, educational status, and income might correlate with the critical variable of interest.

3.2 Area of the Study

The area was chosen for the inquiry to take place was Bakhresa group LTD because it is a private entity which use E-Procurement effectively in Tanzania. Therefore, it is among the relevant areas for the study to take place.

3.3 Target Population

All items in any field of inquiry constitute a 'Universe' or 'Population.' A complete enumeration of all items in the 'population' is known as a census inquiry (Kothari C 2004). Also population can be defined as a group of individuals or objects which share some characteristics relevant to the study.

The target population of the study made up of; suppliers, procurement officers, finance officers, and ICT personnel, and users. The reason for targeting officers mentioned above is to assess the effect of e-procurement on supply chain performance in Bakhresa group LTD. Also, the group is involved in various stages of the procurement processes; as such have rich experience that would help in envisage the potential benefits of e-

procurement as well as the effect of e-procurement on supply chain performance. A total of 193 employees were a population was targeted from different units because it was easy for the researcher to handle them and create a sample from them that was not easy for the researcher to cover the entire population of the organization as well as for the researcher to see that the targeted population was sufficient to suit the study objective .See in table below:

Table 0.1 targeted population

S/N	Unit	Target population
1	Procurement	33
2	Finance and Accountant	21
4	Information communication technology	13
5	Users	120
6	Suppliers	6
Total		193

Source: Researcher Design, (2019)

3.4 Sample Size and Sampling Procedure

Sampling techniques which was used by a researcher was based on probability sampling and non probability sampling. In probability this sampling technique every member of the selected population has equal chance of being selected as a sample. A researcher used simple random sampling in probability and in non-probability a researcher used judgmental/purpose sampling. The researcher used both techniques because the researcher was versatile to use another to suit the gap, particularly in simple random sampling technique, to fulfill the purpose of the study by developing a good sample in the event that one technique fails.

3.4.1 Sample Size

A sample is defined as a segment or subset of the population that is selected for analysis. Representative sample is one that accurately reflects the population being sampled. The sampling frame is the source list from which the sample is drawn and contains the names of all items. It is a list, directory or index of cases from which a sample can be selected

(Bryman and Bell, 2011). According to Yamane (1967), if the population is known, the following formula is employed to get an optimal sample which help to reflect the opinion of entire population. It was not be possible for the researcher to cover the whole staff population; the calculated sample size was 130 respondents that were studied.

$$n = \frac{N}{1+N(e^2)}$$

$$n = \frac{193}{1+ 193 (0.05^2)}$$

$$n = 130$$

Table 3.2 Sample Size

Department	Target population	Sample size	Percentage
Procurement	33	22	11%
Finance and accountant	21	14	7%
ICT	13	9	5%
Suppliers	6	4	2%
Users	120	81	42%
Total of respondents	193	130	67%

Sources: Researcher Design (2019).

3.4.2 Sampling Procedure

3.4.2.1 Simple Randomly Sampling

In this study, a simple randomly sampling was used to select a sample of employee from Bakhresa group LTD. According to Kumar, (2005) explained simple random sampling (SRS) “*is a method of selection of a sample comprising of n number of sampling units out of the population having number of sampling units such that every sampling unit has an equal chance of being chosen*”. Moreover recommended that, the sample may be selected by using two options includes: The sampling size are selected with no substitute in the logic that the respondents once selected are not substituted in the population. As well as the sampling size are selected with substitute in the logic that the selected

respondents are substituted in the population. In this report sampling size are selected with no substitute was applied by determine the following phases:

1. The study identified a total number of employees from Bakhresa group LTD (N units in the population with the numbers from 1 to N)
2. Any arbitrarily random number was chosen in the random number table and start reading numbers.
3. The sampling unit was chosen with serial number corresponds to the random number drawn from the table of random numbers.
4. The researcher used sampling units were chosen without replacement, thus if any random number is repeated, then it is ignored and more numbers are drawn.

The researcher used this technique to the employees of Bakhresa group ltd, because the technique provided equal chance to the units of inquiry to be selected to form a sample, only this methodology was ideal to use it to study a smaller sample size from a large population and to generalize about the large population as well as its ease of use and accurate representation of the large population.

3.4.2.2 Judgmental

Purposive (judgmental) sampling is a non random (non probability) sampling technique in which participants are selected for a study because of some desirable characteristics, like expertise in some area (Bernard, Maureen, 2012). Additionally, Adam and Kamuzora , (2008) define a purposive sampling is the technique in which maintain the decision with regard to which element or item should be included or excluded in the sample rests on the researcher's judgment and intuition.

The researcher decided to use this technique because, it allowed to chose those elements which believed to provide the required data as the major criteria for including an element in the sample and have experience about the problem under investigation. The

selection of these respondents based on the fact that they had certain knowledge on the subject under investigation. And also, the researcher was convinced to use this method because it's convincing in study the sample population by using interviews methods.

3.5 Type of Data and Instrument of Data Collection

Generally, there two types of data; primary and secondary data. The concept primary data implicates the collection of information through direct observation, personal interviews and conducting observation. On the other hand secondary data entails the study of documents, biographies, web-sites, and other historical and documentary records relevant for the issue under study (Bagenda, 2006). The researcher employed both methods in the study which are primary and secondary data collection methods.

3.5.1 Methods of Primary Data Collection

Capturing of primary data was conducted through questionnaires, interviews and personal observations. As the researcher has experienced in procurement functions, this gave her an opportunity to ask questions as the need arose and to observe origination background and structure to get a clear picture of the organization and general information on different aspects pertaining to effects of e- procurement on supply chain performance. The interviews and observations carried out to supplement the questionnaire.

3.5.1.1 Questionnaire

This is one among the tools for data collection whereby questions are prepared and given to respondents in order to answer them. Therefore this research employed the use of questionnaires to collect data from staffs of Bakhresa Group ltd who work there for their contribution of accomplishing this report.

According to Mugenda (2009), questionnaires are very suitable in survey research. In tandem with this assertion, a structured questionnaire was used to collect data from the

respondents. The questionnaire captures data relative to respondents' background. Most importantly, it captured data regarding both the independent and dependent variables. The questionnaire did enable the researcher to collect data on a Likert scale. The researcher used questionnaire method because of the following reason. First the researcher did able to use both open ended and closed questionnaire because researcher got different views and ideas type of method as it simplified manner of comfort ability to the respondent to answer questions with freedom. Secondly, some of the people feel not comfortable to speak, in order to get clear information from them a researcher decided to draft a list of questions relating to the topic and spread to the respondents for the purpose of them to answer the questions. Additionally, a total of 130 respondents were studied by using a prepared questionnaire randomly.

3.5.1.2 Interview Method

According to Kothari (2004) states *"interview is a selected set of questions administered through verbal communication that involves a face to face interaction between the researcher and the respondents."* It is an orally conversation between the researcher who was the interviewer and the respondent who was the interviewee; it is designed to collect information. In this study the researcher employed interview method to only sixty (60) respondents because further additional, clarified, and useful information in relation to the study. Also this was used to give the opportunity those who have no time to read or write but with attention of participating to provide their views on the matter discussed.

3.5.1.3 Observation

Observation was carried out so as to combine it with interviews in order to understand how events arise including perception of a reconstructed perspective in their occurrence. This not only allowed the phenomena to be studied as they arose, but also offered the researcher on opportunity to gain additional insights through experiencing the

phenomena herself. Observation provided direct and observational access to the insiders' world of meaning.

3.5.2 Secondary Data Collection

The method based in review of publication documents in forms of hard copies or soft copies in relation to objectives of the study. The mode was employed by studying existing documents, textbooks, articles, reports and acts in order to support the fresh data and information that was collected from the field.

3.6 Data Analysis

The term analysis regarded as a calculation of definite units along with finding for patterns of correlation that arises one among data range. Hence, in the way of analysis, correlation or differences sustaining with unique hypothesis must be subjected to statistical analysis of significance to consider with validity of data may spoke to show whichever finalizing (Kothari, 1990). A researcher decided to use both qualitative and quantitative method to analyze data in the study because the study becomes valued to everyone who read it that meant for those who did not understand to interpret the word in numerical form: they can understand in expression form.

3.6.1 Qualitative Analysis

This includes the accurate and coherent explanation of the report results. Seeing as the report is qualitative in temperament, collected data was viewed by using expressive way. The researcher used this approach to both objectives in more elaboration of the findings by using descriptive approach with a support of literatures.

3.6.2 Quantitative Analysis

This includes the applicability of simple statistics particularly is using percentage, tables, as well as frequency. The researcher used this way in simple tables. Also, the researcher used this approach in both objectives in explaining findings through tables, frequency

and percentages. On the all objective, the researcher used factor analysis through rotation matrix, and KMO and Bartlett's. The researcher also, analyzed the findings through descriptive statistic which includes frequency and percentage. However, the researcher analyzed the relationship between variables in this study through simple regression analysis on each hypothesis by using SPSS for quantitative approach.

3.7 Reliability and Validity of Data

3.7.1 Reliability of Data

According to Ndunguru (2007) reliability of data refers to the question of whether a measuring process or instrument can bring out the same results if it can be utilized successfully by other different researchers. External reliability is the degree to which the findings of a study can be duplicated, usually a challenge in the study which frequently concerned with distinctive social setting or cases. It was both epistemological and practical reasons that some followers of qualitative research consider to be unnecessary, unattainable or both. Internal reliability was progressed in the field by the use of not less than two observers, or at the stage of analysis where multiple researchers are interpreting the outcomes. This frequently begins with the situation whereby researchers comparing and sharing coding schemes so as to find out the area of agreement and stability. The use of computer program for qualitative data analysis often helped here. Conversational analysis is one element of qualitative analysis that came up with it some various different reliability cases. Besides conversational analysis is frequently found on transcripts and tapes of conversations, tapes and transcripts of conversations, with regards to reliability, it is adequately clear that taped conversations had a tendency to present evidence which is more than field notes that are quickly written. For the nature of this study reliability of the data was conducted through regression analysis, and triangular method whereby the researcher compared data were obtained through questionnaire, interview and secondary data then he found all information was provided was resembled which meant this study is valid.

3.7.2 Validity of the Data

According to Ndunguru (2007) validity is about a researcher measuring what he/she intend to compute or measure. It refers to the status in which researchers observed, identify or measure the things they claim they were found. External validity referred to the point at which conclusions were generalized to other different social organizational setting. On the other hand internal validity referred to whether there were compelling evidence that the researcher had attained a solid connection between their proved evidence and the theoretical idea they expanded from it. Member checking involved receiving respondents to review their interviews' transcripts both for correctness and checked the possibility of the need of adding any comments; this included the participants who commented on coding schemes. Experts checking, as the name implies, involved obtaining the collaboration of research or other experts in validating and approving the analysis. A great question that was put forward here is whether an expert for example using the same data can come to the same or similar conclusion. Validity may be provided with what is needed for at the stage of data presentation through the provision of an audit trail from the analysis to the way back to the data sets, concepts or constructs of which they were developed. From this way other researchers may prove that there is appropriate evidence regarding the basis of the analysis if, before this is done, the original researchers make explicit their own philosophical perspectives and intentions, then the task of validations is made much easier.

For the nature of this study validation of data for both quantitative and qualitative ones were made before and after the study. Before the study has been conducted the researcher went to the field to conduct the pre-test study through which adjustment of the tools was made. After the study the researcher has made post moderation of the data whereby phone calls have been part and parcel of asking clarification from the respondents particularly when he had doubt about some aspects of the collected data. This was possible because the ethical clearance was conducted hence the contact of all important authorities were available.

3.8 Ethic Consideration

During data collection from the respondents, confidentiality was observed so as to obtain in depth information on certain phenomena. Also the respondents were participating voluntarily without any object of cohesions or force. The respondents were made to understand the reasons of conducting the research, the objectives and the importance of the research hence they were motivated in giving more and accurate information.

CHAPTER FOUR

PRESENTATION OF FINDINGS

4.1 Introduction

This chapter therefore, makes the presentation of the findings of the data that has been analyzed. The researcher grouped this chapter in to two broad groups, the first one being presentation of the characteristics of the sample; and the second group being hypothesis testing.

4.2 Responsive Rate

The questionnaires were distributed to participants was 130. However, it is all questionnaires were returned. The researcher received 130 duly filled questionnaires from the respondents. The biggest challenge was some respondents were not present due to various reasons at the period of time when the investigator needed to consolidate filled questionnaires, but researcher tried to be patient till all questionnaires were filled successful. Since the sent questionnaires were 130, and the returned ones were 130, this makes the response rate to be 100%.

4.3 Characteristics of the Sample

This section provides a description of the characteristics of the respondents by highlighting on demographic characteristics. The demographic characteristics that the researcher wanted to explore were age group of the respondents, education level of the respondents. The following subsection therefore provides a description of these characteristics.

4.3.1 Gender

The government of Tanzania strive in maintaining gender balance and women participation on different social matters in the countries so this emphasize is mobilized

in every sector in the country as women have to be provided the equal chance in different societal matters of the country, so researcher ensure his study has considered both gender as shown on the table 4.1 below.

Table 4.1 Gender Distribution of the Respondents

	Frequency	Percent
Male	82	63.1
Female	48	36.9
Total	130	100.0

Source: Researcher Design (2019)

The study establishes that there is no dominance of male over female workers at Bakrhesa group ltd; in fact the study managed to involve both males and females as far as gender balance is concerned. Gender issue was realized to avoid gender biased such involving only male alone or female alone were male, it has been revealed that men and women have been included though male dominated the number of respondents.

4.3.2age Group of the Respondents

From the analysis of the respondents' age groups, it was discovered that 44.6% of the respondents were in the age group of 18-30, 26.9% of the respondents were in the age group 31-40, 15.4% of the respondents were in the age group 41-50, 13.1% of the respondents were in the age group 51-60.

Table 4.2 Age group of the Respondents

	Frequency	Percent
18-30	58	44.6
31-40	35	26.9
41-50	20	15.4
51 -60	17	13.1
Total	130	100.0

Source: Researcher Design (2019)

4.3.3 Level of Education of the Respondents

Since the nature of the study needs literate personnel the researcher have to know the education level of the respondents to sure that is working with the competent people in data collection on value for money so researcher asked about the education level of the respondents and shown in the figure below

Table 4.3 Level of Education of the Respondents

	Frequency	Percent
no formal education	11	8.5
below secondary education	20	15.4
bachelor degree	39	30.0
masters and above	17	13.1
Others	43	33.1
Total	130	100.0

Source: Researcher Design (2019)

4.4 Factor Analysis

Based on the conceptual framework which was developed in chapter 2 of this study by the researcher, we have identified three dependent variables. Each variable had three instruments and each instrument had four items that measure it. On the dependent variable side, the researcher had one variable with two items. The total number of items that measure respective constructs on the independent variables side in this study was therefore 36. These items were therefore subjected to factor analysis in order to observe whether they truly fit within the confinements of their respective constructs. The following sub-sections therefore elaborate the factor analysis process of each group of factors as done separately.

4.4.1 E-Tendering Factors

According to this study, e-tendering factors were foolproof security, level of accessibility and quality assurance. As described in the introductory section above, each

of these factors was made up of four measurement instruments. The researcher used the data on each of these items and subjected them to the factor analysis in SPSS.

After the data was analyzed with the software, it was observed that Bartlett's test of sphericity was significant at $p < 0.001$, whereas KMO was 0.815. This means that the data did meet the assumptions of factor analysis, hence it was suitable. It was also discovered that all factors except for the variable V103a, loaded successfully well in their respective component. This means that the factor that did not load well was removed from further analysis.

Table 4.4 E-tendering Factors

Rotated Component Matrix^a			
	Full proof security	Level of accessibility	Quality assurance
V101a	.839	.205	-.105
V101b	.807	.204	-.001
V101c	.716	.343	-.007
V101d	.739	.364	.024
V102a	.346	.715	.057
V102b	.167	.851	.116
V102c	.174	.853	.177
V102d	.167	.827	.056
V103a	.460	-.009	.494
V103b	.630	-.036	.528
V103c	-.089	.144	.853
V103d	-.063	.172	.789

Extraction Method: Principal Component Analysis.

Rotation Method: Varimax with Kaiser Normalization.

a. Rotation converged in 6 iterations.

Source: Researcher Design (2019)

Table 4.5 KMO and Bartlett's Test

KMO and Bartlett's Test		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.815
Bartlett's Test of Sphericity	Approx. Chi-Square	744.028
	Df	66
	Sig.	.000

Source: Researcher Design (2019)

4.4.2 E-Information Factors

According to this study, e-information factors were records management, speed of communication collection and collection of information. As described in the introductory section above, each of these factors was made up of four measurement instruments. The researcher used the data on each of these items and subjected them to the factor analysis by using the program known as SPSS version 23.

After the data was analyzed with the software, it was observed that Bartlett's test of sphericity was significant at $p < 0.001$, whereas KMO was 0.800. This means that the data did meet the assumptions of factor analysis, hence it was suitable. It was also discovered that each item of every construct did in fact loaded adequately well in their respective component. This means that with these factors, all items of all constructs were retained.

Table 4.6 E-Information Factors

Rotated Component Matrix^a			
	Records management	Speed of communication	Collection of information
V201a	.851	.220	-.065
V201b	.810	.181	.015
V201c	.726	.344	.003
V201d	.763	.365	.026
V202a	.344	.716	.034
V202b	.171	.858	.107
V202c	.172	.857	.167
V202d	.178	.806	.076
V203a	.434	-.081	.598
V203b	.615	-.032	.556
V203c	-.125	.186	.855
V203d	-.091	.188	.763

Extraction Method: Principal Component Analysis.

Rotation Method: Varimax with Kaiser Normalization.

a. Rotation converged in 6 iterations.

Source: Researcher Design (2019)

Table 4.7 KMO and Bartlett's Test

KMO and Bartlett's Test		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.800
Bartlett's Test of Sphericity	Approx. Chi-Square	789.404
	Df	66
	Sig.	.000

Source: Researcher Design (2019)

4.4.3 E-Payment Factors

According to this study, e-payment factors were payment speed, level of transparency and cost of online payment. As described in the introductory section above, each of these factors was made up of four measurement instruments. The researcher used the data on each of these items and subjected them to the factor analysis in SPSS.

After the data was analyzed with the software, it was observed that Bartlett's test of sphericity was significant at $p < 0.001$, whereas KMO was 0.815. This means that the data did meet the assumptions of factor analysis, hence it was suitable. It was also discovered that each item did in fact loaded successfully well in their respective component. This means that with these factors, all items of all constructs were retained.

Table 4.8 E-Payment Factors

Rotated Component Matrix^a			
	Payment speed	Level of transparency	Costs of online payment
V301a	.818	.192	-.085
V301b	.792	.218	-.012
V301c	.722	.334	-.016
V301d	.728	.370	.026
V302a	.386	.710	.048
V302b	.182	.804	.074
V302c	.175	.833	.172
V302d	.146	.820	.101
V303a	.479	-.056	.492
V303b	.603	.002	.529
V303c	-.097	.128	.838
V303d	-.057	.195	.755

Extraction Method: Principal Component Analysis.

Rotation Method: Varimax with Kaiser Normalization.

a. Rotation converged in 6 iterations.

Source: Researcher Design (2019)

Table 4.9 KMO and Bartlett's Test

KMO and Bartlett's Test		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.820
Bartlett's Test of Sphericity	Approx. Chi-Square	657.639
	Df	66
	Sig.	.000

Source: Researcher Design (2019)

4.5 Variable Transformation

After factor analysis was performed, the variables had to be transformed accordingly by grouping them. The grouping process meant that all measurements which did not load adequately in to their assumed constructs had to be removed. The grouping process was performed in SPSS version 23 by adding the scores of each case's score of the variable and calculating their mean to get a construct representative score. The entire process is demonstrated in the table below.

Table 4.10 Variable Transformation

Variable	Variable label	Computation
e-Tendering	V101	$(a + b + c + d) / 4$
	V102	$(a + b + c + d) / 4$
	V103	$(b + c + d) / 3$
	V104	$(a + b + c + d) / 4$
e-Information	V201	$(a + b + c + d) / 4$
	V202	$(a + b + c + d) / 4$
	V203	$(a + b + c + d) / 4$
	V204	$(a + b + c + d) / 4$
e-Payment	V301	$(a + b + c + d) / 4$
	V302	$(a + b + c + d) / 4$
	V303	$(b + c + d) / 3$
	V304	$(a + b + c + d) / 4$

Source: Researcher Design (2019)

4.6 Hypothesis Testing

From the model which was created in chapter three of this study also came twelve (12) hypotheses statements which were to be tested. From the factor analysis which was done, certain items had to be removed since they did not load well to their constructs. The following step is to tests the hypotheses which were developed earlier.

In order to perform a hypothesis testing, linear regression was carried out. Essentially, multiple regressions enabled the researcher to ascertain the influence of each factor on the dependent variable. The following sub-sections therefore depict a series of linear

regressions which were conducted by the researcher to ascertain the relationship of the influencing factor on supply chain performance.

4.6.1 E-Tendering Factors

This subsection depicts a series of linear regressions of e-tendering factors against supply chain performance factors. E-tendering factors were full proof of security, level of accessibility and finally quality assurance. Each of these was subjected linear regression and the results are indicated in the subsections below.

4.6.1.1 Foolproof Security

The researcher wanted to investigate foolproof security influence on SC performance. After the multiple regression analysis was carried out between perceived foolproof security and then SC performance such that of cost reduction, it was revealed that foolproof security significantly influences supply chain performance on the grounds of cost reduction ($\beta = 0.559$, $R^2 = 0.313$ and $p\text{-value} < 0.001$).

Similarly, the researcher wanted to examine correlation among foolproof security and SC performance on lead times. The regression analysis was performed between foolproof security and supply chain performance in terms of reduced lead times. It has discovered that having a statistically significant correlation among full proof security and SC performance in terms of lead times ($\beta = 0.696$, $R^2 = 0.485$ and $p\text{-value} < 0.001$).

Table 4.11 Coefficients – Foolproof Security

Dependent Variable	Independent Variables	Beta Coeff	t- values	Sig.	R ²	Interpretation
Cost reduction	Foolproof security	.559	7.637	.000	.313	S
Lead times		.696	10.935	.000	.485	S

Source: Researcher design (2019)

4.6.1.2 Level of Accessibility

The researcher wanted to examine the level of accessibility factors on SC performance. After the multiple regression analysis was carried out between perceived level of accessibility and SC performance such that of cost reduction, it was revealed that level of accessibility significantly impact supply chain performance on the grounds of cost reduction ($\beta = 0.444$, $R^2 = 0.197$ and $p\text{-value} < 0.001$).

Similarly, the researcher wanted to discover the correlation among the level of accessibility and SC performance on lead times. The regression analysis was performed between level of accessibility and SC performance such that of reduced lead times. It has been discovered that having a statistically significant correlation among the level of accessibility and SC performance in terms of lead times ($\beta = 0.434$, $R^2 = 0.188$ and $p\text{-value} < 0.001$).

Table 4.12 Coefficients – Level of accessibility

Dependent Variable	Independent Variables	Beta Coeff	t-values	Sig.	R ²	Interpretation
Cost reduction	Level of accessibility	.444	5.612	.000	.197	S
Lead times		.434	5.423	.000	.188	S

Source: Researcher design (2019)

4.6.1.3 Quality Assurance

The researcher wanted to examine the quality assurance factors on SC performance. After the multiple regression analysis was carried out between perceived quality assurance and then SC performance such that of cost reduction, it was revealed that quality assurance significantly influences supply chain performance on the grounds of cost reduction ($\beta = 0.251$, $R^2 = 0.056$ and $p\text{-value} < 0.001$).

Similarly, the researcher wanted to establish the relationship between quality assurance and supply chain performance on lead times. The regression analysis was performed between quality assurance and supply chain performance in terms of reduced lead times. It has been discovered that having a statistically significant correlation among the quality assurance and SC performance in terms of lead times ($\beta = 0.255$, $R^2 = 0.065$ and $p\text{-value} < 0.001$).

Table 4.13 Coefficients – Quality Assurance

Dependent Variable	Independent Variables	Beta Coeff	t-values	Sig.	R ²	Interpretation
Cost reduction	Quality assurance	.251	2.931	.004	.056	S
Lead times		.255	2.970	.004	.065	S

Source: Researcher design (2019)

4.6.2 E-Information Factors

This subsection depicts a series of linear regressions of e-information factors against supply chain performance factors. E-information factors were records management, speed of communication collection and collection of information. Each of these was subjected linear regression and the results are indicated in the subsections below.

4.6.2.1 Records Management

The researcher wanted to examine the records management factors on SC performance. After the multiple regression analysis was carried out between perceived records management and supply chain performance in terms of cost reduction, it was revealed that records management significantly influences supply chain performance on the grounds of cost reduction ($\beta = 0.567$, $R^2 = 0.321$ and $p\text{-value} < 0.001$).

Similarly, the researcher wanted to investigate the correlation among the records management and then SC performance on lead times. The regression analysis was

performed between records management and supply chain performance in terms of reduced lead times. It has been discovered that having a statistically significant correlation among the records management and SC performance in terms of lead times ($\beta = 0.694$, $R^2 = 0.481$ and $p\text{-value} < 0.001$).

Table 4.14 Coefficients – Records Management

Dependent Variable	Independent Variables	Beta Coeff	t-values	Sig.	R ²	Interpretation
Cost reduction	Records management	.567	7.787	.000	.321	S
Lead times		.694	10.854	.000	.481	S

Source: Researcher design (2019)

4.6.2.2 Speed of Communication Collection

The researcher wanted to determine the influence of speed of communication collection on supply chain performance. After the multiple regression analysis was carried out between perceived speed of communication collection and supply chain performance in terms of cost reduction, it was revealed that speed of communication collection significantly influences supply chain performance on the grounds of cost reduction ($\beta = 0.445$, $R^2 = 0.198$ and $p\text{-value} < 0.001$).

Similarly, the researcher wanted to establish the relationship between speed of communication collection and supply chain performance on lead times. The regression analysis was performed between speed of communication collection and supply chain performance in terms of reduced lead times. It has been discovered that having a statistically significant correlation among speed of communication collection and supply chain performance in terms of lead times ($\beta = 0.430$, $R^2 = 0.185$ and $p\text{-value} < 0.001$).

Table 4.15 Coefficients – Communication Collection

Dependent Variable	Independent Variables	Beta Coeff	t-values	Sig.	R ²	Interpretation
Cost reduction	Communication collection	.445	5.628	.000	.198	S
Lead times		.430	5.364	.000	.185	S

Source: Researcher Design (2019)

4.6.2.3 Collection of Information

The researcher wanted to examine the collection of information factors on SC performance. After the multiple regression analysis was carried out between perceived collection of information and supply chain performance in terms of cost reduction, it was revealed that collection of information significantly influences supply chain performance on the grounds of cost reduction ($\beta = 0.5328$, $R^2 = 0.3108$ and $p\text{-value} < 0.001$).

Similarly, the researcher wanted to investigate the correlation among the collection of information and SC performance on lead times. The regression analysis was performed between collection of information and SC performance such that of reduced lead times. It has been discovered that having a statistically significant correlation among the collection of information and SC performance in terms of lead times ($\beta = 0.6288$, $R^2 = 0.085$ and $p\text{-value} < 0.001$).

Table 4.16 Coefficients – Collection Of Information

Dependent Variable	Independent Variables	Beta Coeff	t-values	Sig.	R ²	Interpretation
Cost reduction	Collection of information	.328	3.930	.000	.108	S
Lead times		.288	3.395	.001	.085	S

Source: Researcher Design (2019)

4.6.3 E-Payment Factors

This subsection depicts a series of linear regressions of e-payment factors against supply chain performance. E-payment factors were e-payment speed, level of transparency and cost of online payment. Each of these was subjected linear regression and the results are indicated in the subsections below.

4.6.3.1 Payment Speed

The researcher wanted to investigate the payment speed factors on SC performance. After the multiple regression analysis was carried out between perceived payment speed and supply chain performance in terms of cost reduction, it was revealed that payment speed significantly influences supply chain performance on the grounds of cost reduction ($\beta = 0.555$, $R^2 = 0.308$ and $p\text{-value} < 0.001$).

Similarly, the researcher wanted to investigate the correlation among the payment speed and SC performance on lead times. The regression analysis was performed between payment speed and SC performance in terms of reduced lead times. It has been discovered that having a statistically significant correlation among the payment speed and SC performance in terms of lead times ($\beta = 0.697$, $R^2 = 0.486$ and $p\text{-value} < 0.001$).

Table 4.17 Coefficients – Payment Speed

Dependent Variable	Independent Variables	Beta Coeff	t-values	Sig.	R ²	Interpretation
Cost reduction	Payment speed	.555	7.556	.000	.308	S
Lead times		.697	10.965	.000	.486	S

Source: Researcher Design (2019)

4.6.3.2 Level of Transparency

The researcher wanted to examine the level of transparency factors on SC performance. After the multiple regression analysis was carried out between perceived level of

transparency and SC performance such that of cost reduction, it was revealed that level of transparency significantly influences supply chain performance on the grounds of cost reduction ($\beta = 0.5458$, $R^2 = 0.210$ and $p\text{-value} < 0.001$).

Similarly, the investigator wanted to examine the correlation among level of transparency and supply chain performance on lead times. The regression analysis was performed between level of transparency and supply chain performance in terms of reduced lead times. It has been discovered that having a statistically significant correlation among the level of transparency and SC performance in terms of lead times ($\beta = 0.427$, $R^2 = 0.183$ and $p\text{-value} < 0.001$).

Table 4.18 Coefficients – Level of Transparency

Dependent Variable	Independent Variables	Beta Coeff	t-values	Sig.	R ²	Interpretation
Cost reduction	Delivery frequency	.458	5.827	.000	.210	S
Lead times		.427	5.327	.000	.183	S

Source: Researcher Design (2019)

4.6.3.3 Cost of Online Payment

The researcher wanted to investigate the cost of online payment factors on SC performance. After the multiple regression analysis was carried out between perceived cost of online payment and SC performance such that of cost reduction, it was revealed that cost of online payment significantly influences supply chain performance on the grounds of cost reduction ($\beta = 0.251$, $R^2 = 0.063$ and $p\text{-value} < 0.001$).

Similarly, the researcher wanted to examine the correlation among the cost of online payment and SC performance on lead times. The regression analysis was performed between cost of online payment and SC performance such that of reduced lead times. It has been discovered that having a statistically significant correlation among the cost of

online payment and supply chain functions in terms of lead times ($\beta = 0.243$, $R^2 = 0.059$ and $p\text{-value} < 0.001$).

Table 4.19 Coefficients – Cost Of Online Payment

Dependent Variable	Independent Variables	Beta Coeff	t-values	Sig.	R ²	Interpretation
Cost reduction	Cost of payment	.251	2.934	.004	.063	S
Lead times		.243	2.825	.005	.059	S

Source: Researcher Design (2019)

Table 4.20 Summary of Tested Hypotheses – Cost Reduction

Hypothesis	Independent variable	Dependent variable	p-value	Status
H1a	Foolproof security	Cost reduction	P<0.05	Accepted
H2a	Level of accessibility	Cost reduction	P<0.05	Accepted
H3a	Quality assurance	Cost reduction	P<0.05	Accepted
H4a	Records management	Cost reduction	P<0.05	Accepted
H5a	Communication collection	Cost reduction	P<0.05	Accepted
H6a	Collection of information	Cost reduction	P<0.05	Accepted
H7a	Payment speed	Cost reduction	P<0.05	Accepted
H8a	Delivery frequency	Cost reduction	P<0.05	Accepted
H9a	Cost of payment	Cost reduction	P<0.05	Accepted

Source: Researcher Design (2019)

Table 4.21 Summary of Tested Hypotheses – Lead Times

Hypothesis	Independent variable	Dependent variable	p-value	Status
H1b	Foolproof security	Lead times	P<0.05	Accepted
H2b	Level of accessibility	Lead times	P<0.05	Accepted
H3b	Quality assurance	Lead times	P<0.05	Accepted
H4b	Records management	Lead times	P<0.05	Accepted
H5b	Communication collection	Lead times	P<0.05	Accepted
H6b	Collection of information	Lead times	P<0.05	Accepted
H7b	Payment speed	Lead times	P<0.05	Accepted
H8b	Delivery frequency	Lead times	P<0.05	Accepted
H9b	Cost of payment	Lead times	P<0.05	Accepted

Source: Researcher Design (2019)

CHAPTER FIVE

DISCUSSION OF THE FINDINGS

5.1 Introduction

In this chapter findings from the study were discussed. The main objective of this study was to assess the effect of E-procurement on Supply Chain Performance in Bakhresa group LTD and specific objective of the study were;

- i. To analyze the e-tendering factors on SC performance
- ii. To examine the e- informing factors on SC performance
- iii. To estimate the contribution of electronic payment on SC performance

From the study findings electronic tendering, electronic informing and then electronic payment were discussed as factors that affect e-procurement on SC performance.

5.2 The Influence of E-Tendering on Sc Performance

Through the analysis, the researcher found that most of participant replied that the electronic tendering influence supply chain activities in Tanzania. The researcher found out there are several factors under this e-tendering included: foolproof security, level of accessibility, and quality assurance. In this study through the opened-question and that one asked to the 60 interviewee as part of sample individual of this study, the researcher found out as follows: foolproof security insure efficiency in supply chain performance which help profit maximization, lack of security during the tendering affect performance of supply chain, level of security during tendering process determine performance level in supply chain, as well as others said that security increase level of accessibility in tendering process which enhance the existence of supply chain.

Moreover, respondents viewed that level of accessibility simplify access of suppliers during the tendering process which enhance good performance of supply chain in term of lead-time, huge number of suppliers result to cost efficiency, access to document is

restricted to an authorized staffs only which lead cost minimization in supply chain performance, as well as it is easy to access information recurred for tender when internet is involved which will impact SC performance such that of lead time. However, respondent argued that e-tendering adoption has potential to enhance quality of purchasing products in supply chain performance in term of cost benefit, facilitating the purchasing of goods/services from known or unknown suppliers is simplified which will help supply chain performance become efficient, also, respondents stated that quality of good has increasingly significance, as well as huge number of suppliers result to high quality of product in our organization.

From findings that researcher got through interview tool, the respondents elucidated that e-tendering to the organization especially in inventory, warehouses and stores, and procurement as part of supply chain activities are important for the daily operation concerned requisition, documentation, and sourcing. So in absence of this will affect the supply chain performance. Especially, in tendering process if is not considered it may cause the supply chain to not be operated efficient which may lead more cost, according to the advancement of technology in supply chain, e-tendering is important which lead the organization to meet competition.

E-tendering is the mechanism which management can use to evaluate their vendors on different system introduced especially to the procurement activities, so absence of e-tendering can affect supply chain which will lead some delaying in process. E-tendering is very important because help them to improve tracking on the area of the tendering which everything will be transparent to those whom may concern. E-tendering is so important because of kinds of operation and introduction of new technology in today marketing which will help organization to engage in competitive market globally. Also, others said that most of the supply chain in public/private sector involves a lot of procedure, policies and rules so, e-tendering may simplify to comply with tendering procedure and cause supply chain to operate well. Thus, the researcher found out this e-

tendering includes: foolproof security, level of accessibility, and quality assurance to the great extent in Tanzania.

The researcher revealed that responses from the questionnaire and interview guide tool provided the same idea which made powerful to research to say that this study was a meaningful and fit the purpose. Thus, the researcher found out this e-tendering includes: foolproof security, level of accessibility, and quality assurance influence success of supply chain performance to the great extent in Tanzania. These findings concurred with some literatures who did research entitled that the effect of e-tendering system in organization performance which included: Accepting an effective electronic tendering system in public institution advances the execution of the PE and then, at the state level. It help the policy builder to encompass an fresh understanding of how several policy objectives relate and the effect they get on the full undertaking of the electronic tendering system. It then help the parliament of united republic of Tanzania to advance the superior decision built and to accept constructive long term actions that will be efficient in improving the electronic tendering system, and invent best favor to better the policy of tendering system. It will enable them to build suitable priorities for reforms in the field of public electronic tendering, then to control the development of goal: Also giving reliable information on the examination of the public economic system (Hardy and William, 2011).

Electronic tendering is a key based on the next having financial factors: minimization of contract budget through the applicability of technologies to enlarge the awareness of users of the accessible contract tools by constructing it easier for them to request: averaging the tendering authority via applying the technology that are computerized process that recently manual based, where they are connected and consistent. The financial gain attained from the execution of the planed suggested are important (Plant and Valle, 2008). Boudijilda and Pannetto, (2013) stated that the system of electronic tendering and its process may be simplified by the attainment of required doctrine which includes: transparence and accountability in the government offices as the influential

activities of timing, flexibility, cost minimization in the tendering process. Electronic tendering is a key of emphasizing the efficiency and effectiveness of activities in the government sector tendering and giving a reasonable cost gain. During the analysis of multiple regression, Kamotho, (2014) revealed that in the electronic procurement elements under determination, electronic tendering had the slightest impact on the acquisition performance. Chwepkwony, (2015)'s investigation discovered that electronic tendering had positive significant relationship with the SC performance.

5.3 Influence of E- Informing on Supply Chain Performance

Use of e- information have influence supply chain performance, whereby e-informing used through gathering and distributing purchasing information both from and to internal and external parties using internet technology and the most corporations have adopted this to a large extent Stonebraker, (2006). After conducting the analysis it was found that, Record management, Speed of communication and Collection of information have tested to be reliable and valid to the explanation on e-informing influence supply chain performance. E-informing can electronically gather information about supplier clientele, ensure superior products, and disseminating information to preferred vendor. E-informing also reduces paperwork, saves on cost, ensures improved customer service, and increases productivity.

5.3.1 Speed of Communication Collection

The intention of the investigation has been to assess the e-informing factors on SC performance. Speed of communication collection was one of e-informing attribute that influence supply chain performance. After the multiple regression analysis was carried out between perceived speed of communication collection and supply chain performance in terms of cost reduction, it was revealed that speed of communication collection significantly influences supply chain performance on the grounds of cost reduction, also it has been discovered that having a statistically significant correlation among the speed of communication collection and SC performance in terms of lead times.

The findings agree with those of Chemoiywo (2014) assert that the high rating for communication is a good indicator of performance since communication is a important variable that help to attain conformity in a procurement system. Further, quick and regular communication ensures an organization is able to communicate with the vendors and client in genuine period and finds friendly agreement to any existing issues.

Also the study revealed that e-informing facilitates effective communication and enables Bakhresa group LTD to decentralize operational procurement processes and centralize strategic procurement process. The findings support Chemoiywo (2014) that the high rating for communication is a good indicator of performance since communication is a critical element that ensures compliance in a procurement system.

5.3.2 Record Management

The intention of the study was to assess the influence of e-informing on supply chain performance. Record Management was one of e-informing attribute that influence supply chain performance. After the multiple regression analysis was carried out between perceived records management and supply chain performance in terms of cost reduction, it was revealed that records management significantly influences supply chain performance on the grounds of cost reduction, also it was discovered that there is a statistically significant relationship between records management and supply chain performance in terms of lead times. In connecting with the results of the report, an analysis by Presutti (2003) revealed that genuine period of time for information sharing in the electronic design phases minimize time of marketing hence advancing SC performance.

The study revealed that Bakhresa Group LTD they manage their records so as to guarantee better management of supplier relationship whereby all record are keep in a consistent and organized for later reference, this is essential for storing and approving paperwork quickly. During interview with one of the manager said that Bakhresa group LTD success in the market because they handling supplier and customer quickly and

efficiently because they have their records, also this help to provide a good environment for customer to make order from them and receive at a time also able to negotiate better payment terms or discount. The study also revealed that Bakhresa group LTD increase productivity in accounting department because they utilizing record management system for invoicing and accounts payable whereby it ensure better manage the workflow related to paying to supplier and getting paid from customer. This help to pay supplier sooner and take advantage on invoices, also reduction in errors and higher customer satisfaction as well.

5.3.3 Collection of Information

The intention of the study was to assess the influence of e-informing on supply chain performance. Collection of information was one of e-informing attribute that influence supply chain performance. After the multiple regression analysis was carried out between perceived collection of information and supply chain performance in terms of cost reduction, it was revealed that collection of information significantly influences supply chain performance on the grounds of cost reduction, also it was discovered that there is a statistically significant relationship between collection of information and supply chain performance in terms of lead times. Therefore, the use of internet technology leads to gather and distribute purchasing information results to improved supply chain performance. This conformity with the findings of the study, Li *et al.*, (2005) echoed that information sharing facilitates relay of critical and proprietary information to one's supply chain partner hence contributing to high performance of the supply chain.

5.4 Contribution of E- Payment on Supply Chain Performance

Use of e- payment has influence supply chain performance, whereby e-payment is the fastest growth area in the global economy and almost carries potentials beyond measure. It provides consumers with the benefits of any time, any where transactions, with lower costs. Standing [2001] stated more than ten e-payment benefits for both buyer and seller.

Such as cost savings and speed in selling and purchasing, exposure to new customers (global reach), convenience and transparency to users, better quality of product/service, reduce need for office space and fewer resources required. After conducting the analysis it was found that, Payment speed, Level of transparent and Costs of online payment have tested to be reliable and valid to the explanation on e-payment influence supply chain performance.

5.4.1 Payment Speed

The intention of the study was to assess the influence of e-payment on supply chain performance. Payment speed was one of e-payment attribute that influence supply chain performance. After the multiple regression analysis was carried out between perceived payment speed and supply chain performance in terms of cost reduction, it was revealed that payment speed significantly influences supply chain performance on the grounds of cost reduction, also it was discovered that there is a statistically significant relationship between payment speed and supply chain performance in terms of lead times. In Bakhresa group LTD they use EFD (Electronic Fiscal device) and Tally 9 software for payment system but Bakhresa group LTD still using paper rather than EFD software. However Paper invoices were much more sensitive for postal delays, data entry errors and the loss of paper invoices.

Addition interview with one of the employee quoted said that uses of e- payments are much faster, safer and easier to use, because details were directly recorded in the system. However, Bakhresa group LTD BBA were still quite reluctant to use the e-payment system because of the general lack of consensus on standards and the difficulties they face in persuading suppliers to change to an e-payment system.

5.4.2 Cost of Online Payment

The intention of the study was to assess the influence of e-payment on supply chain performance. Cost of online payment was one of e-payment attribute that influence

supply chain performance. After the multiple regression analysis was carried out between perceived cost of online payment and supply chain performance in terms of cost reduction, it was revealed that cost of online payment significantly influences supply chain performance on the grounds of cost reduction, also it was discovered that there is a statistically significant relationship between cost of online payment and supply chain performance in terms of lead times. This findings agree with that of Kalakota & Whinston, (1997) assert that e-payment reduced operational and payments processing costs, growing online commerce and decreasing the costs of technology.

The study revealed that when Bakhresa group LTD use e-payment system they save cost due to the fact that paper-based payment were reduced, the processing of which was costly, labor-intensive and time consuming. At Bakhresa group LTD cost and delays mount up to serious revenue and resource drainage.

Addition, costs of utilizing electronic payment system are continuously dropping as internet ubiquity increase and technology expenses decrease. Further implication of e-payment at Bakhresa group LTD customer service department will given greater visibility into payment statuses, which leads to better credit collections, approvals and overall customer profitability rating

5.4.3 Level of Transparent

The intention of the study was to assess the influence of e-payment on supply chain performance. Level of transparent was one of e-payment attribute that influence supply chain performance. After the multiple regression analysis was carried out between perceived level of transparency and supply chain performance in terms of cost reduction, it was revealed that level of transparency significantly influences supply chain performance on the grounds of cost reduction, also it was discovered that there is a statistically significant relationship between level of transparency and supply chain performance in terms of lead times. This findings agree with that of Laudon & Traver, (2002) assert that e-payment can help businesses to increase production flexibility by

ensuring timely availability of components from suppliers, improve quality of the products by increasing cooperation between buyers and sellers and reducing quality issues, increase opportunities for collaborating with suppliers and distributors, and to create greater price transparency which lead to the ability to see the actual prices on the market,

Additional the study revealed that when Bakhresa group LTD making the payments, transitioning to electronic payments (e-payment) can ease the work of finance and program staff in their efforts to disburse a variety of payments to staff, suppliers, program beneficiaries, and/or clients. It can also lead to multiple benefits including improved security and transparency, reduction of leakage or waste, and improved cost and efficiencies

CHAPTER SIX

SUMMARY, CONCLUSION AND RECOMMENDATION

6.1 Introduction

This chapter explains the conclusion derived from the research problem, research objectives and research questions. Also this chapter shows how the study will help other similar organizations recognize the effect of e-procurement in supply chain performance in Tanzania. This chapter also gives recommendations on what should be done so as to benefit more from adoption and a suggestion on future studies.

6.2 Summary of the Study

The general objective of the study was to assess the impact of electronic procurement on SC performance in Tanzania. Specific research objectives were; to analyze the influence of electronic tendering on SC performance, to examine the influence of electronic informing on SC performance, and to estimate the contribution of electronic payment on SC performance. The study applied a cross sectional design whereby Bakhresa group ltd was involved. The study conducted in Bakhresa group ltd in Dar es Salaam. The population of the study was officers and users in Bakhresa group ltd. The study involved a sample of 130 respondents. The researcher used simple random sampling and purposively in selecting sample. In this study, a purposive sampling technique was used to select respondents as sample size from officers and users from Bakhresa group ltd to formulate sample size. Simple random sampling was used to select 130 respondents whereby those had been sampled from Bakhresa group ltd of the study area. As regards to this study and this method, researcher arranged the names of all employees in chronologically order starting from 1 to N. After the arrangement, the researcher counted the names to be included in the sample. Data collection tools were questionnaire, interview, observation and documentation. The Statistical Package for Social Science (SPSS) was applied to analyze data.

6.3 Conclusion

Despite having many challenges and obstacles in this study, the study serves to show the effect of e-procurement on supply chain performance in Tanzania. The researcher comes up with conclusion regarding to his objectives as follows:

6.3.1 The Effect of E-Tendering on Sc Performance in Tanzania

In conclusion, it was found out that the e-tendering influencing supply chain performance in Tanzania. Due to analysis, the researcher found that this factor has positive and significant correlation with SC performance, and the respondents agreed that this will help Bakhressa Group Ltd to gain cost saving and optimal lead time in supply chain performance.

6.3.2 The Effect of E-Information on Sc Performance in Tanzania

In conclusion, the researcher found out that the e-informing influencing supply chain performance in Tanzania. However, the analysis showed that this factor has positive impact on supply chain performance in Tanzania which implies that it is important fact the company to make more effort to deal with this to ensure they obtain efficiency, effectiveness and financial benefit in supply chain and the researcher found that this factor has significant correlation with value SC performance, and it is accepted because of positive correlation with SC performance.

6.3.3 The Effect of E-Payment on Sc Performance in Tanzania

This study has also concluded that the e-payment influencing supply chain performance in Tanzania. Due to analysis, the researcher found that this factor has positive and significant correlation with SC performance in Tanzania, and the respondents agreed that this will help company to obtain efficiency, effectiveness and financial benefit in supply chain performance

6.4 Recommendation of the Study

- i. Based on the findings of this study, Tanzania Government should review and improve its e-tendering activities to make its performance not only remain positive and significant, but also improve it.
- ii. It is suggested that administration required ensuring that all process in procurement from purchasing requisition to good receipt note are effectively performed. This will eradicate waste in procurement process such as delay, postal; administration cost, auditing will be easy and well maintained, as well as corruption will be reduced.
- iii. Seeing as e-informing is a positive significant influence supply chain performance, it is necessary for organization to collect information for supplier qualification includes: experience, previous clientele as well as disseminating that information to the appropriate suppliers. There is also required to electronically advice references for quality of inventory in order to better supply chain performance.

6.5 Future Studies

In this study, the researcher found that electronic tendering, electronic informing, and electronic payment have positive significant correlation with SC performance in Bakhresa Group Ltd, but, the researcher suggested other researchers to conduct this study especially in Tanzania Government Institutions.

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APPENDICES

QUESTIONNAIRE

I am Josephine Alfred Mayunga, a student at Mzumbe University pursuing Master degree in Procurement and Supply Chain Management.

The questionnaire before you serves to assess the effect of E- procurement on Supply Chain Performance in Organization; Case study of Bakhresa Group LTD. Based on the honest and trustworthy response from you regarding this questionnaire the author hope to come up with thorough conclusion and viable recommendation concerning E-procurement in Tanzania.

Please note that the researcher grants assurance that information provided will be confidential and neither name nor individual comments will be revealed to anybody. Thank you for your kindly cooperation.

Contacts; Phone No – 0658026404

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Thank you in advance

PART A; CHARACTERISTICS OF RESPONDENTS

Respondents Profile

1. Gender?

a. Male

b. Female

2. Age?

a. 18 to 30

b. 31 to 40

c. 41 to 50

d. 51 to 60

e. 61 and above

3. Education Level

- a. No Formal Education
- b. Below secondary education
- c. Secondary Education
- d. Bachelor Degree
- e. Masters Degree and above

4. Department you are working

5. Your job Title / position

PART B; E-TENDERING (100)

In this part, the question asked reflects the aspect of e-tendering on supply chain performance. Please put a tick mark (√) to indicate your level of agreement or disagreement which best describe your opinion.

S/N	STATEMENTS	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
100	Foolproof security					
101a	Foolproof security insures efficiency in supply chain performance.					
101b	Lack of security during tendering affect performance in supply chain.					
101c	Level of security during tender process determines performance level.					
101d	Security increase level of					

	accessibility during tendering process.					
101e	Lack of security damaging supplier relationship.					
102	Level of accessibility					
102a	Simplify access of suppliers during tender process.					
102b	Huge number of suppliers results to cost efficiency					
102c	Access to documents is restricted to authorized staff only.					
102d	It's easy to access information recurred for tender when internet is involved.					
102e	Proper accessibility of documents during tender process makes control of lead time.					
103	Quality assurance					
103a	E-procurement adoption has potential to enhance quality of purchasing products.					
103b	Facilitate the purchasing of goods/ service from known or unknown suppliers is					

	simplified.					
103c	Quality of goods has increasingly significance.					
103d	Huge number of suppliers results to high quality of product in our organization.					

PART C; E-INFORMATION (200)

In this part, the question asked reflects the aspect of e-information on supply chain performance. Please put a tick mark (√) to indicate your level of agreement or disagreement which best describe your opinion.

S/N	STATEMENTS	Strongly disagree	Disagree	Neutral	Agree	Strongly Agree
200	Records management					
201a	Data integrity level increased automatically.					
201b	The access of records in our organization is simplified.					
201c	Effective records management determines performance outcome.					
201d	Electronic record management enable data backup required in all levels of supply chain.					
201e	Electronic record					

	management increase security in managing of records;					
201f	Poor record management affect supply chain performance.					
202	Speed of communication					
202a	Enhance quick and regular communication with supplier and customer in real time.					
202b	Higher speed of communication is important for successfully supply chain performance					
202c	Internet intervention reduces unnecessary cost during transformation of information.					
202d	The flow of information in our organization has improved the performance of supply chain.					
202e	Speed of communication has influence lead time.					
203	Collection and distribution					
203a	Easy collection and distribution of information enhance supplier					

	relationship in our organization.					
203b	Risk of wrong information is totally decreased.					
203c	The access to data backup in our organization is higher.					
203d	The ability to handle different records has increased.					
203e	Smooth collection and distribution of information in our organization has increased.					

PART D; E-PAYMENT (300)

In this part, the question asked reflects the aspect of e-payment on supply chain performance. Please put a tick mark (√) to indicate your level of agreement or disagreement which best describe your opinion.

S/N	STATEMENTS	Strongly disagree	disagree	Neutral	Agree	Strongly Agree
301	Payment speed					
301a	Delay of payment affect supply chain performance.					
301b	Timely payment increase level of trust to suppliers.					
301c	Timely payment has improved.					
301d	Real time payment affects positively timely delivery.					
302	Level of transparence					
302a	Reduce level of corruption.					
302b	Level of transparence during payment has increased.					
302c	Enhance supplier relationship and hence effectiveness of supply chain performance.					
302d	Mutual trust has reduced unnecessary cost.					
303	Cost of online payment					
303a	Amount of money budget					

	for requirements are significant.					
303b	Online payment has reduced unnecessary cost.					
303c	Increase accessibility by the rule of anytime anywhere.					
303d	Online payment can be effective tool if risks are carefully assessed.					

PART E; E-PROCUREMENT AND SUPPLY CHAIN PERFORMANCE

In this part, the question asked reflects the aspect of e-procurement on supply chain performance (lead time and cost) in general. Please put a tick mark (√) to indicate your level of agreement or disagreement which best describe your opinion.

400	E-procurement and supply chain performance (lead time)	Strongly disagree	Disagree	Neutral	Agree	Strongly Agree
401a	Timing is among the key performance measurement in supply chain.					
401b	Timely delivery assures performance in supply chain.					
401c	Supply chain practices are adequate once they are in line with timing.					
401d	Timely inputs facilitate supply chain performance.					
401e	Delivery of the requirements to destination on time entails supply chain performance					
500	E-procurement and supply chain performance (cost)					
501a	E-procurement constitutes a well-set cost reliable for supply chain performance.					
501b	A well-set cost on procurement activities					

	guarantees supply chain performance.					
501c	Reasonable cost on procurement determines performance in supply chain.					
501d	E-procurement reduces the cost of the product needed by organization.					

(Please fill the blank in the following questions)

1) What techniques do you employ to control security during tender process?

2) What is the problems organization faces during E-procurement?

3) What do you do to control hackers during E-procurement process?

4) What are the risks regarding online payments?

a. -----
