

FACTORS INFLUENCING ADOPTION OF E-PROCUREMENT IN HUMANITARIAN ORGANIZATIONS IN KENYA: A CASE OF NORWEGIAN REFUGEE COUNCIL – KAKUMA REFUGEE CAMP

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Abstract: Traditionally businesses used paper based systems but now this is being surpassed by automated systems. Businesses processes are evolving with the acceptance of e-commerce concepts that applies ICT to expedite business processes. This has led to emergence of e-procurement as part of the innovations providing solutions through the internet platform and over time it has been widely accepted by diverse sectors globally. From the earlier years since the introduction of computers, the objective of procurement has not been achieved though. Several studies have been conducted out on e-procurement in their study of factors affecting performance of procurement in humanitarian relief organization' information technology, which have recognized there is a need to invest in information systems specifically e-procurement in their purchasing units to ensure that the purchasing processes are enhanced towards assisting service delivery in those organization. This study sought to understand why the degree of adopting e-procurement systems has stood considerably lesser than the opportunity offered by the market especially in humanitarian organizations. Previous studies have revealed that there has been insufficient proof on the recognition of e-procurement economic benefits. This study examined the factors influencing the implementation of e-procurement within the humanitarian organizations in Kenya. The study sought to examine the effect of organizational factors, environmental factors, technological factors and management support factors on the adoption of e-procurement. Random sampling was engaged as a survey approach ensuring representativeness. Data analysis through both quantitative and qualitative techniques were applied on data collected To facilitate examining of correlation/relationships among variables of interest regressive analysis was used as well as descriptive statistics. The major findings of the study indicated that management factors had the most influence on the e-procurement implementation, followed by environmental factors, technological factors then organizational factors respectively. The study showed that, budget allocation, staff training & development, vendors support and organization policy reinforcement in ICT application, are essential to effective e-procurement adoption and therefore should be given due consideration. The study findings will assist Humanitarian aid managers to understand and appreciate the importance of e-procurement in organization

Keywords: organizational factors, environmental factors, technological factors, management support, e-procurement adoption.

I. INTRODUCTION

E-procurement involves the purchasing and sale of commodities, work and services specifically through the web internet as well as other information based networking system such as EDI. The use of internet technology in goods and service procurement is what encompasses e-procurement. The system involves automating and streamlining the process of procurement by using the different aspects of information technology (IT) leading to improved efficiency and transparency, which in turn reduces the operation costs among business parties (De Boer, Harink & Heijboer, 2002). Many firms have effectively incorporated e-procurement due to its potential benefits especially in developing economies.

Collaborative alliances among trading partners have been enhanced by the application of these networking systems such as web-based intranets and EDI, Jiazhen, (2004). Internet has been evolving over a decade from only being an information network to a platform of trading embracing new generation of business innovations (Heng, Cao, Daniel & Miroslaw, 2002). These web based internet has changed the manner in which commerce is done at most industries. Information on goods and services can now be easily obtained from the World Wide Web (Issa, Flood & Caglasin, 2003). There has been increased discussion on e-procurement in the modern day as crucial way of material purchase and devoid of reservation, it is changing the way procurement is being done and the incoming futur (Essig, & Ulli, 2001).

With this contemporary environment coupled with these highly competitive firms, it is essential for every business to uphold an effective and well-organized procurement to reduce the cost of administration and keep up with the conditions of market thus procuring goods and services of superior quality and value (Arasa and Achuora, 2012). In the past businesses used paper – based systems to purchase goods and services by reviewing provided paper based catalogues from vendors which involved tedious copying, and post mailing of documents (Heng et al, 2002).

Global perspective of e-procurement systems in humanitarian organizations:

There has been some successes and challenges in e-procurement over the last two decades that have been highlighted. Through e-procurement, organizations have been able to choose/select commodities from electronic catalogue and make direct orders without intrusion from a procurement department. Globally organizations have significantly embraced supply chain innovations that use information system applications (Sheng, 2002). The supplier receives orders directly from the users without the need to contact the procurement unit in regards to delivery dates, terms and conditions applying and other details that are already provided online. It is obvious that internet has considerably changed the purchasing function globally. Internet has over time been evolving into a multifaceted marketplace posing with many trading players on a variety of business services

Supply chain information assimilation has not become a cutting-edge (Fawcett and Magnan, 2002), despite reception of ERP application. Even though it's being encouraged by software suppliers as suitable for making purchases in almost all organization, it has been used in purchasing narrow types of goods, largely office supplies (Davila and Palmer, 2003a). A recent UK survey done on purchasing community showed that most firms tend to be "sitting on its hands" instead of pledging to e-procurement (Day, 2001)

A survey done in Norway showed that most firms had strategies, only 3 percent had no strategies (Petter and Anne, 2002) while 34 percent had made tangible strategies to exploit electronic marketplaces for procurements. Organizations that responded intended to procure considerably more subsidiary goods than indirect services on e-marketplaces. The potential benefit arising from exploiting electronic marketplaces for purchasing was reduction in cost of transactions. Significant strategies of B2B electronic markets can expressively envisage the magnitude to which answering organizations had strategies to exploit e-marketplaces for purchasing. Talai, Daniel and David (2002) affirm that modern purchasing is moving from paper-based, labour-intensive purchasing systems in the direction of e-based purchase processes that rely on internet infrastructures and Web-enhanced purchasing tools.

Kenya perspective of e-procurement systems in humanitarian organizations:

In Kenya today various organizations have adopted e-procurement as a means of conducting activities and receiving responses through use of internet technologies such as intranets/extranets, email and other applications to support every business transaction (Mentzer, 2006). Most suppliers are offering comprehensive tracking facilities which allow customers to monitor orders, make follow ups and ensure products are delivered in good time. The procurement systems also facilitate e-invoicing and invoice correspondences. The consequence being the old-style purchasing sequence is abridged and shortened substantially (Waruguru and Kiruri, 2015).

Purchasing is an imperative and costly operation activity for many firms (Chan and Lee, 2003). It is evident since firms frequently spend an enormous portion (sometimes up to 70%) of their operating budget on procuring materials and services (Gebauer and Segev, 1998). In Kenya, a most of organizations are struggling to embrace information systems technology in their purchasing functions notwithstanding recognized paybacks (Kinyanjui and McCormick, 2002). This study intends to examine the factors influencing successful adoption of e-procurement by humanitarian organizations. According to Mitra, Laka and Abdulla, (2000), the commonest methods of e-commerce in the Kenyan marketplace are; e-procurement, web based banking and recently mobile banking. E-procurement that has shown to be user friendly; web based intranet system has spawned high interest owing to its capacity of cultivating efficiency and accountability (De Boer et al, 2002)

In Kenya only 33% of firms, have applied e-procurement as a strategy to expand services in them Kinyanjui et al (2002), thus it would therefore imperative to identify the underlying factor impeding humanitarian organizations in Kenya from integrating their procurement activities electronically so that they can achieve the full benefits of e-commerce. The study proposed to establish the factor influencing adoption of e-procurement in humanitarian organizations specifically concerning purchasing procedures (Lysons and Farrington, 2006).

The Norwegian Refugee Council:

A reputable international non-governmental organization; Norwegian Refugee Council (NRC) is an independent, humanitarian, non-profit, providing aid, protection and long-lasting solutions to refugees and internally displaced people worldwide. The bulk of NRC's 5000 staff members are national employees in NRC's projects in around 25 countries worldwide. All NRC's projects/programs are overseen by the NRC Head Office in Oslo.

NRC was established in 1946 under the name Aid to Europe, to help refugees afterwards World War II. Today, NRC is organized as an independent, reserved foundation.

In Kakuma Refugee Camp, NRC works closely with the UN and other humanitarian organizations in provision of humanitarian aid to slightly more than 140,000 refugees in Kakuma Refugee Camp. The organization has 264 numbers of staff in East Africa region. NRC's main activity is the delivery of humanitarian assistance through programmatic activities in Kakuma Refugee Camp field site. NRC focusses on four program areas; - Water, Sanitation and Hygiene (WASH), Education, and Food security. The principal competences are adaptive to various contexts and mutually strengthening.

NRC as an international NGO has invested heavily on an ICT innovations on most of the organization operations. Notably are their e-procurement systems that most of the humanitarian organizations within the same sectors are using for benchmarking. The system has also been used to control expenditures based on the planned activities within a time period. Through these systems the organization is able to employ budget vs actual approach of its function every time procurement is made and consequently make reports of the same. Accruing due to system implementation, data exchange with suppliers has improved, costs reduced, efficiency increased due to standardization. Our study is based on NRC as an international NGO to find out and realize the factors influencing adoption of e-procurement in humanitarian organizations.

Statement of the Problem:

The overriding objective of an organization's procurement system is to provide competence and "value for money" in the application of the organization's funds, while abiding to the requirements defined in the state laws and policies. From the earlier years since the introduction of computers, the objective of procurement has not been achieved though, (Waruguru et al, 2015). Procurement competence can be seen from the purchasing organization's perspective as to how best the purchasing unit is accomplishing in the activities they are projected to accomplish against the budget that is provided for that department (Graham & Melvyn, 2011).

Several studies have been conducted out on e-procurement. Mwanjumwa, G., & Simba, T. (2015) in their study of factors affecting performance of procurement in humanitarian relief organization' information technology, recognized there is a need to invest in information systems specifically e-procurement in their purchasing units to ensure that the purchasing processes are enhanced towards assisting service delivery in those organization. Their findings however fell short of aiming on the factors influencing adoption of e-procurement which was the domain of the current study.

Koeh, Ayoyi and F Mugambi, (2016) carried out a study on factors affecting adoption of e-procurement in Kenya's public sector. According to them finding, enforceability/legality electronic contracts is a critical element of adoption of e-procurement. Although it's slowly meeting motion but the prevailing legal structure does not sufficiently support it. The existing legal framework of e-procurement presents a worrying challenges extending from uncertainty, lack of confidentiality and ease of access to the e-procurement system etc. Their study though acknowledging the challenges fronting public procurement in Kenya, flops to recognize the possible factors influencing adoption of e-procurement in relief organizations. The current study sought to solve this gap by examining the factors affecting adoption of e-procurement in humanitarian organizations.

According to Orina (2013) when she examined e-procurement readiness factors in Kenya's public sector she established that, change resistance, deficiency of enthusiasm, skills sets of employees including organization procurement policies, wedged the public institutions preparedness of e-procurement adoption. She concluded the key readiness factors to

adopting e-procurement include; legal framework, firm's finance, level of technology, integrity leadership, and employee assertiveness. Others included online market platforms, national procurement law and the procurement policy. She however failed to highlight the factors influencing adoption of e-procurement in humanitarian organizations.

From the preceding discussion, it is evident that; regardless of the criticality of e-procurement as a fundamental strategy and supply chain management tool, there is insufficient literature from earlier pragmatic studies relating to e-procurement and procurement performance especially among humanitarian organizations. Some past studies have unfolded the effect of e-procurement, most of them have not fully examined the factor influencing adoption of e-procurement in humanitarian organizations. Against this backdrop, the current study is set to establish the factors influencing adoption of e-procurement in humanitarian organizations in Kenya.

The Objective of the Study:

General objective:

The main purpose of the study is to assess factors influencing adoption of e-procurement in humanitarian organizations.

Specific Objectives:

The core objective of the study is to establish and examine the factors influencing adoption of e-procurement in humanitarian organization. Hence, the objectives specific for the study were:

- i. To examine the organizational factors which have influenced e-procurement adoption in humanitarian organizations in Kenya
- ii. To find out the environmental factors which have influenced adoption of e-procurement in humanitarian organizations Kenya
- iii. To identify the technological factors which have influenced adoption of e-procurement in humanitarian organizations Kenya.
- iv. To determine whether management support influence e-procurement adoption in humanitarian organizations Kenya.

Research Questions:

- i. To what extent does organizational factors influence the adoption of e-procurement in humanitarian organizations in Kenya?
- ii. How do environmental factors influence adoption of e-procurement in humanitarian organization in Kenya?
- iii. Does technological factors influence the adoption of e-procurement in humanitarian organizations?
- iv. How does management factors affect the adoption of e-procurement in humanitarian organizations in Kenya?

2. LITERATURE REVIEW

The chapter presents the literature review on the topic related to the set variables of the study. It covers theories that underpin the study that is Innovation Diffusion Theory (IDT), Technology Adoption Model (TAM), Theory of Reasoned Action (TRA) and Theory of Planned Behavior (TPB) and the Transaction Cost Theory. It also illustrates the advantages of adoption of e-procurement, conceptual framework and the gap of the study.

Innovation Diffusion Theory (IDT):

The embracing and dissemination of innovation literature is a relevant source that examines how innovation is accepted by individuals and organizations. The famous Innovation Diffusion Theory (IDT) by (Rogers, 2003) focuses primarily on the work of Rogers in information systems area, where he identifies five characteristics which influences a potential adopter's perception of accepting that innovation. These are: relative advantage, compatibility, complexity, observability and trialability (Moore et al, 1991).

The adoption of innovation has also been scrutinized in relation to the advancement of consumer-oriented products literature of marketing. A foremost work collaborated by (Ram, 1987; Ram, 1989; Bagozzi et al, 1999; Sheth, 1981 and Sheth et al, 1987) point out that three factors enable receipt of innovative applications: innovation compatibility with the

existing effort habits of the consumers, innovation compatibility with the structure of beliefs for the consumers and perceived low risks posed by the innovation for the consumers. Innovation acceptance rise is the risk apparent that is associated with the new product declines.

Moorman, Deshpande and Zaltman, (1993) suggested that trust to be viewed as behavioural intention that reflects dependence and confidence of an individual in the other party (or individual). Many online banking studies (Rotchanakitumnuai & Speece, 2003) and online trading confirms the importance of trust to be an imperative component that promotes recognition of web-based applications. In summary, we contend that several of the environmental factors are of bearing in understanding the factors influencing adoption of e-procurement in humanitarian organizations.

Technology Adoption Model (TAM):

In the extensive IT discipline, it focuses on three important outlines on an individual's acceptance of IT applications which have wide publicity. These include: TAM2 – a new version of TAM (Venkatesh, 2000), Technology Adoption Mode, TAM (Davis, 1989), and Theory of Use of Technology and Acceptance, (Venkatesh et al, 2003).

The above stated frameworks aim to explain why individuals of organizations accept information technologies. According to TAM (Davis, 1989), perceived ease of use and perceived usefulness are the two most important factors in explaining acceptance of information technologies by individuals and organizations. TAM2 recognizes that, in addition to ease of use and perceived usefulness, subjective norms is also an important factor affecting adoption decisions of individuals and organizations. Many scholars have applied these models in explaining various types of business IT application and e-commerce applications. However, analysis of empirical research with TAM is not totally conclusive. Venkatesh et al, (2003) consolidated all the prior studies on acceptance and usage in information technologies and produced a holistic view of individual acceptance and usage behaviour pertaining to information systems and proposed a new framework called UTAUT which identifies four factors that are significant determinants of user acceptance: performance expectancy, effort expectancy, social influence and facilitating conditions.

Staff training aids workers in two different methods: to start with, it assists in transferring knowledge from the dealers 'consultants (experts) to the staff regarding the information system significance and reason why it makes their work easy and efficient. This in turn discourses the uncertainties the workers may have regarding information system. Secondly, in-service training helps the workforces to understand about the features of the software and hence helps in developing a familiarity with the system. Thus, user training is essential to generate employee acceptance of the IT system. Finally, user involvement which refers to the participations in the IT system implementation process by representatives of the target employee groups facilitate their acceptance of IT system (Zhu et al, 2002). Involving employees at both planning and implementation stages decrease resistance to any IT system because they develop a feeling that they are important stakeholders who can make decisions on how the system can be made to work for them.

Theory of Reasoned Action (TRA) and Theory of Planned Behaviour (TPB):

Popularly cited theoretical models with roots in social psychology, include theory of reasoned action (Fishbein et al, 1975) and theory of planned behaviour (Ajzen, 1991), which offer an extensive body of knowledge exists on cognitive mechanisms leading towards organizational adoption decision of innovative IT applications. According to TRA (Ajzen and Fishbein, 1975), an individual behaviour (e.g. e-procurement system acceptance) is directly influenced by behavioral purpose which in turn is affected by that personality's attitude towards that behavior and idiosyncratic norm. Assertiveness towards behavior is defined as "a characters' positive of negative feelings associated with performing the target behaviour" (Ajzen et al, 1975). Subjective custom refers to a personality's perception of the significant other's expectations about whether the behavior should be accomplished. Davis, Bagozzi and Warshaw (1989), in envisaging information technology acceptance (behaviour) supported the validity of TRA through intention of behavior. TPB extended from TRA, by including another determinant of behavior, perceived behavioral control (Ajzen, 1991), that referred to the person's perception of easiness or struggle of performing certain behavior. In the perspective of IT usage, it refers to view of internal constraints and external constraints, or conditions on behavior.

Transaction cost theory:

This theory serves to explain why specific tasks are performed by certain firms and others by markets (Holland, 2008). Coordination costs and transaction risk form part of transaction cost (Harrington, 2011). Costs of coordination are the direct costs of incorporating decisions between cost-effective activities. The use of information technology has facilitated the reduction of coordination costs, which has been extensively documented in the literature (Handfield, 2013). For

example, electronic market places, facilitated through IT, reduce the cost of searching for obtaining information about product offerings and prices (Handfield, 2013). Also, collaboration facilitated by information sharing can lower transaction costs (in particular coordination costs) as companies can thereby reduce supply chain uncertainty and thus the cost of contracting. Transaction costs theory focuses rather strongly the asset specificity and its role in determining how to better organize exchanges. The wide-ranging advice is that when commodities are not specific to an exchange the market may be the most efficient way (or the best way for minimizing costs) to organize it. The asset specificity makes specific reference to the extent to which an asset can be redeployed to alternative uses and/or by alternative users without a substantial sacrifice of its productive value. Transaction cost theory is a theory of how business transactions are structured in challenging decision environments. Transaction theory is chiefly concerned with transactions that are complex in that they are recurring, subject to uncertainty, and involve commitments that are difficult to reverse without significant economic loss. IT role has evolved to a more strategic level from a productivity tool (Wu et al., 2003). A strategy of e-business should stipulate the aims, goals and perspective of the application (Soliman & Youssef, 2001); these selections should be aligned with other managerial and organizational choices, and integrated with the organization's processes (Graham & Hardaker, 2000). From the studies there is a suggestion for organizations to be strategic in their e-procurement implementation, they may need an e-procurement strategy that is aligned to the broader organizational strategy.

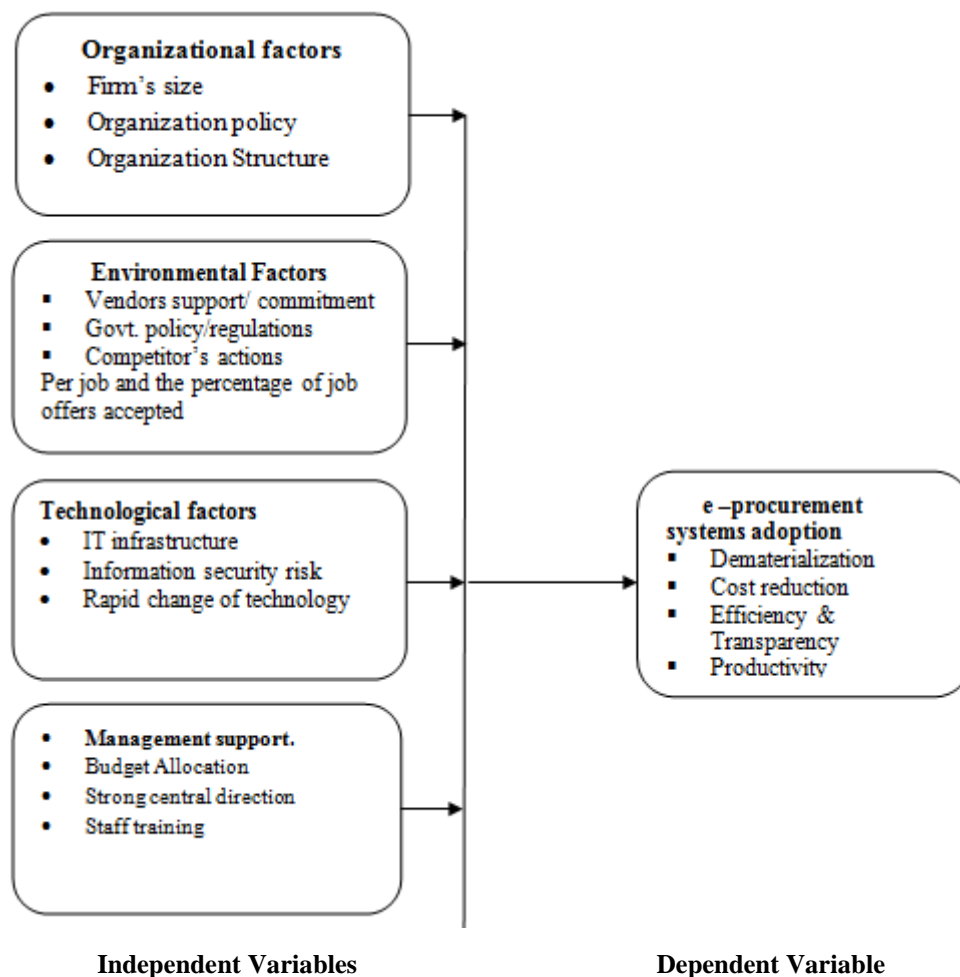


Figure 2.1: Conceptual

Empirical Review of Literature:

Organizational factors and influence of e-procurement adoption:

The organizational characteristics perspective seem to be the main focus of many studies in the milieu of business firms (Premkumar, 2003). The policy of organization, structure of organization, and size of the firm, are considered to be the factors that influence the readiness of firm to adopting e-procurement. According to Jeyaraj, Rottman and Laicity (2006),

organization policy to be one of the best determinants of organizational adoption of IS innovations. An organization policy can stimulate change by communicating and reinforcing values through an articulated vision for the organization (Thong, 1999). Organization policy defines principles, rules, and guidelines formulated or adopted by an organization to reach its long-term goals. In extension an organization procurement policy is simply the rules and regulations that are set in place to govern the process of acquiring goods and services needed by an organization to function efficiently.

Organization structure is critical for creating a supportive climate for the adoption of new technologies (Premkumar & Roberts, 1999). An organizational structure defines how activities such as task allocation, coordination and supervision are directed toward the achievement of organizational aims (Grover & Goslar, 1993).

Organization size has been identified by Jeyaraj et al (2006) as one of the greatest determinants of organizational adoption of information systems. This has been argued by Goode and Stevens (2002) whom recognized that, business size, previously the best indicator of technology adoption was not significantly related to IS innovation's adoption. However, the typical argument is that, larger firms have a greater need, resources, skills and experience and ability to survive failures than smaller firms (Levenburg, Magal and Kosalge, 2006). It can be argued that larger firms are more likely to adopt E-Procurement Systems (EPS) than smaller firms.

Environmental factors and influence on e-procurement adoption:

Vendor support, competitive pressure, government policy and regulation are deliberated to be factors that influence firm's inclination to adopting e-procurement system. Competition pressure has been debated to be influencing the adoption of IS innovation (Levenburg et al, 2006). Firms have turned to automating due to the stiff competition they face in pricing, market leadership and size of market, so as to achieve competitive edge in terms of efficiency, price leadership, flexibility and market scope in business processes (Goode et al, 2002). Therefore, competitive pressure has been acknowledged by Jeyaraj et al (2006) as one of the greatest predictors of organizational adoption of IS innovation. Competition in most organizations is largely perceived to positively affect the adoption of information systems innovation (Gatignon and Robertson, 1989).

A firm's e-procurement system adoption decision may also be influenced by readiness of its trading partners within the industry or value chain to adopting e-procurement system for any electronic trade to be achieved. All the trading partners should adopt compatible e-trading system as a necessity as well as have similar we based internet-enabled services. Furthermore, e-procurement system may be more suitable if there is a taut integration with vendor's systems, which extends the scope of one organization (Zhu & Kraemer, 2002). Conversely, a lack of trading partner preparedness may hinder e-procurement system adoption. Zhu et al (2002), recognized government policy and regulations are also facilitators of e-procurement system adoption through subsidies offered and policies of trading.

Technological factors and influence on e-procurement adoption:

In the existing literature, according to Kuan and Chau, 2001, technological resources have been identified as a significant factor of successful information system adoption. Hence this study puts headfirst technology as an adoption driver, which according to Rogers (2003), sums up information security risk, IT infrastructure and rapid technological changes. Premkumar (2003) recognizes that very few studies are available on examination of technological characteristics impact in the perspective of businesses that manufacture.

IT infrastructure meant the software, hardware components, and the entire network related enabling linkages of the IT system (Rogers, 2003). Premkumar (2003) shown IT to be an important contributing factor of IS business innovation adoption. It's perceived the new technologies adoption can fetch weighty changes to the work business processes and change resistance is a reaction ordinary to many organizations (Premkumar et al, 1999). Changes should be compatible with business infrastructure, believes and values.

Information security risk is referred to probable threats with respect to system vulnerability that may result to a disruption of routine activities (Rogers 2003). Information security is concerned with threats that may lead to a losses of any type to an organization. The losses include privacy loss, financial loss, and identity theft, undesirable impact to customer relation, confidential data loss, or reduction in profitability. Information security risk is huge challenge for many firms or organizations that involves with perpetual storage and information transfer. The complexity of information risk management creates bigger ambiguity for influence e-procurement adoption and therefore escalates risk in the adoption decision (Premkumar et al, 1999). This factor has been alleged to be negatively associated with adoption of most IS innovation including e-procurement (Grover et al, 1993).

Rapid and revolutionary technology changes have resulted to a global economy that is information centric where firms compete for knowledge. The greatest task for many businesses has been how to implement information systems that can endure rapid technological changes (Rogers, 2003). Rapid technology changes refers to changes that happen quickly resulting to uncertainty in prediction on operation of a new technology. New IT innovations that can endure effect of rapid technological changes are more likely to be preferred by most organizations.

Management support and influence on e-procurement adoption:

The top management backing is critical in forming the cooperate objectives, providing an alignment on mutual commitment for change in processes, and policy formulation,(WB, 2003). Management support factors; budgetary allocation, strong central direction and staff training have shown more and more to influencing the successful adoption of information systems in many institutions (Chatterjee & Grewal 2006). If the top management does not fully support the e-procurement system, it will most propably fail.

Budgetary allocation is defined as “the availability of the needed budgets for adoption of e-procurement” (Lacovou, Dexter and Benbasat, 1995). Indeed, economic costs, lack of management commitment and budget planning are perceived as three of the most leading factors that impede IS progression in many organizations (Cragg and King, 1993). Budgetary allocation articulates an organization’s resources available for IS investment (Chwelos, Benbasat and Dexter, 2001). The strategic use of e-procurement has been considered in several studies, and how e-business strategy aligns with the overarching business strategy of an organization. It is imperative to ensure the top management provides full support for the e-procurement adoption.

Strong central direction is critical for forming a supportive climate for the adoption of new IS technologies. According to Jeyaraj (2006) a strong central direction showed to be one of dominant predictors of adoption of IS innovation in organizations. Strong central direction can inspire change by communicating and solidifying.

Armstrong (2000) elucidates that staff training and development is the appropriate and systematic modification of behavior that can be achieved through learning which can result from instruction development and planned practice experiences. Effective staff training can improve individual and cooperate performance in terms of output, efficiency and overall productivity. Training also develop operational flexibility of staff through shaping of skills they possess. The multi-skilling empowers the employee commitment, boosting their work morale, and alignment to the organization mission and objectives which lead to customer satisfaction. The European Commission (2002) recognized numerous obstacles affecting e-procurement implementation: management failures, digital divides and choices, pitiable coordination, and organizational inflexibility, and poor system designing. E-procurement implementation is influenced by generally low cognizance, lower level of understanding, or poor skills in relation to technology evolutions, World Bank (2004).

Research Gap:

A gap is existent on the factors influencing adoption of e-procurement among humanitarian organizations in Kakuma refugee camp. Many developing countries, as per Moses, M., Njihia, M.. & Magutu, P. (2013) delay behind in level of technology. As a matter of reason it will be wise to scrutinize the factors influencing e-procurement implementation among humanitarian organizations in operation underdeveloped countries such as Kenya. E-procurement implementation is a very expensive investment requiring heavy cost outlays by firms. The studies have failed to obviously show clearly the consequence of e-procurement on the costs of automating in a humanitarian set up. The study tried to understand and answer the following: What is the influence of organizational factors on the influence of e-procurement adoption in humanitarian organizations? How do environmental factors influence adoption of e-procurement in humanitarian organization? What are the effects of technological factors on the e-procurement adoption in humanitarian organizations? Does management support have influence the adoption of e-procurement?

Thus the study intended to accomplish the following four objectives: To examine the organizational factors which have influenced adoption of e-procurement in NRC, to find out the environmental factors which have influenced adoption of e-procurement in NRC, to identify the technological factors which have influenced adoption of e-procurement in NRC and to ascertain management factors affecting the e-procurement adoption in humanitarian organization.

3. RESEARCH METHODOLOGY

Research Design:

A survey research design was employed in this study. To assess opinions and trends, survey research design proves to be a very valuable tool, therefore this design was chosen due to its ability in describing large population and generalizability of its findings (Mugenda & Mugenda, 2003).

Target Population:

According to Saunders (2003) and Kothari (2008), the population reflects to the entire collection of elements from where one wishes to make references. The target population denotes the entire group of individuals or objects under research to which a researcher is interested in formulating general the conclusions. The study population is the population accessible where the researcher can apply the conclusions (Schidler and cooper, 2006). For purposes of this study, the target and study population consisted of all the two hundred and sixty four (264) staff members of NRC from Kenya program, East Africa operations support.

Table 3.1: Target Population

Category	Target Population	Percentage
Regional staff (East Africa)	82	31
Kenya Program staff	182	69
Total	264	100

Source: Author (2018)

Sample Size and Sampling Techniques:

The study used purposive sampling. This type of sampling technique refers to the process by which a researcher selects a sample basing on the experience or knowledge of the group that is to be sampled. It was applied to select key informants from NRC operation team both Kenya and regional program. This is to ensure the respondents have experience with different challenges due to procurement activities and allows for generalization of conclusions. According to Mugenda and Mugenda (2003), when the study population is less than 10,000, a sample size of between 10% and 30% is a good representation of the target population and hence 12 % is adequate for analysis. Therefore, 10 Regional Employees (82 x 0.12), 22 Kenya program staff (182 x 0.12) was be considered making a larger population of 32 respondents for the study.

Data Collection Instruments:

The primary data was gathered directly by use of a research questionnaire, which was used as the principal instrument for data collection. Closed and open ended questions were developed in the questionnaire. The questionnaire was structured comprising of four parts; the bio data particulars of the respondents being the first section, the second section had questions about e-procurement implementation status and lastly the third and fourth part focused on key considerations, views and opinion on e-procurement adoption. The development of questionnaire was based on research objectives. It was self-administered where the researcher applied drop and pick later strategy.

Reliability and Validity:

Validity of instruments:

The validity of research is the degree to which a research study measures what it intends to measure (Hardesty and Bearden, 2004). The validity of the study was achieved through validation of measurement and self-testing as well as generalization of the findings to the target population, to analyze appropriateness, meaningfulness and usefulness of a research study. The researcher sought and got opinions of specialists in the field of study in the project methodology to establish the research instrument validity. This facilitated the needed modification and revision of the research instrument thereby ensuring validity is enhanced.

Reliability:

The reliability of data collection instruments was achieved through a pilot-testing, whereby, seven (7) questionnaires were randomly distributed to seven (7) staff members at NRC. After which the instrument shown to produce steady and desired results that could be relied upon, it was adopted for the study.

The Cronbach's Alpha Test of Reliability was applied to test the reliability of the paradigms describing the variable of the study. The results were as follows: Environmental factors, organizational factors technological factors and management support had an Alpha score of 0.7885, 0.7968, 0.8363 and 0.8177 respectively. Applying this test to the study specifies whether the objects pertaining to each measurement are internally consistent and whether they can be used to measure the same paradigm. Studies done by Nunnally and Bernstein (1994), pointed out that a score greater than 0.7000 indicate internal consistency that is high from the scale items. The general rule of thumb is that a Cronbach's alpha score of .7000 and above is acceptable, .80 and above is good, and .90 and above is excellent. The reached alpha scores from the test simply indicate acceptable levels of reliability of the measures. The table 3.2 below shows the cronbach reliability test results based on the pilot data.

Table 3.2: Reliability Test

Variable	Cronbach's Alpha
Organizational factors	.7885
Environmental Factors	.7968
Technological Factors	.8363
Management Support factors	.8177

Source: Author (2018)

Data Collection Procedures:

A research was applied as the primary instrument of collecting data for the study that was developed through the direction of the objectives and research questions of the study. It proved to be an appropriate instrument as it was easier for the research assistants to collect data from the respondents due to its high versatility. Questionnaire can be used by a variety of people, in dissimilar environments, at diverse times, targeting a range of topics for analysis, Ong'anya, G.V. and Ododa, H.O, (2009). The questionnaire contained both open and close ended questions and were administered through a drop and pick up later basis in which questionnaires was left with the respondents for three (days) then picked after. This was done to increase the response rate, ensuring uniformity of answers.

Data Analysis:

The data analysis involved the use of quantitative and qualitative methods. To simplify analysis, coding was applied on the questionnaires in reference to each variable of the study ensuring accuracy and least margin of error during the analysis.

Mean, standard deviation and frequencies as part of descriptive statistics were applied to describe the basic characteristics of the data providing modest summaries of the sample and the measures. Simple graphic analysis such as charts and graphs, formed the basis of virtually every quantitative analysis of data (Trochim, 2006). The Statistical Package for Social Sciences (SPSS) software was applied for data analysis since it provides multiple relationships/comparisons and allows table customization. The data was presented using tables, graphs and charts to convey a true picture of the research summary findings at a glance.

Regression analysis model was used to project the extent to which the four independent variables; organizational factors, technological factors, environmental factors and management factors, expound the propensity to influence adoption of e-procurement.

The model is depicted as below;

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

Where;

Y is adoption of e-procurement

A is Y intercept when X is zero

$\beta_1, \beta_2, \beta_3$ and β_4 are regression weights attached to the variable

X_1 = organizational factors

X_2 = environmental factors

X_3 = technological factors

X_4 = management (support) factors

ε is an error term distributed about a mean of 0 and for purposes of computation, is assumed to be 0.

The error term is the part of the statistical equation that indicates what remains unexplained by the independent variable

4. RESEARCH FINDINGS AND DISCUSSIONS

Introduction:

This chapter presents the research findings based on the data collected from the field. The structure of this chapter is based on the research questions. All questionnaires returned by the respondents were used in data analysis.

Reliability analysis:

Reliability is a measure of the degree to which a research instrument yields consistent results or data after repeated trials (Mugenda & Mugenda, 2003). During the pilot study, two repeat mailings of the instrument were carried out to improve the overall response rate before sending the actual instrument to allow for pre-testing of the research instrument. Cronbach's alpha for each value was established by the SPSS application and gauged against each other at a cut off value of 0.7 which is acceptable according to Cooper and Schindler (2008). In this study all the values were above 0.7 which concludes that the data collection instrument was reliable.

Table 4.1: Reliability test

Variable	Cronbach's Alpha
Organizational factors	.7885
Environmental Factors	.7968
Technological Factors	.8363
Management Support factors	.8177

Response Rate:

Thirty-two (32) questionnaires were issued to the respondents of which all were filled and returned. This shows a response of 100 percent as shown in the table 4.1. This response rate was excellent and representative to make conclusions for the study. According to Mugenda and Mugenda (2003), a response rate below 40% is unreliable, a response rate of 40%-50% is poor, a response rate of 50%-60% is acceptable for analysis and reporting, a response rate of 60%-70% is good and a response rate of 70%-80% is very good while response of over 80% is excellent. |

Table 4.1: Response Rate

Category	Target population	Studied population	Percentage (%)
Region Staff (East Africa)	82	10	31
Kenya Program staff	182	22	69
Total	264	32	100

Source: Author (2018)

Regression Analysis:

A linear multiple regression analysis was used test the relationship between the independent variables and the dependent variable. The researcher applied the statistical package for social sciences (SPSS) version 23 to code, enter and compute the measurements of the multiple regressions for the study. Coefficient of determination explains the extent to which changes in adoption of e procurement can be explained by the change in the independent variables (organizational factors, environmental factors, technological factors and management support factors).

Table 4.3: Model Summary

Model	R	R Square	Adjusted R Square	Change Statistics	
				F Change	Sig. F Change
1	.897 ^a	.805	.8025	7.567	.029

Source, author (2018)

According to the findings in the table above, the value of adjusted R^2 is 0.8025. This indicates that there was a variation of 80.25% in adoption of e-procurement due to the four independent variables at a confidence level of 95%. In addition, other factors that were not studied in this research contribute to 19.75% of the successful adoption of e-procurement in NRC, a humanitarian organization. Therefore, further research should be conducted to investigate the other factors which contribute to that 19.75% of success in the adoption of e-procurement in NRC. The significance value was 0.029 which is less than 0.05 thus the model is statistically significance in predicting how the independent variables (organizational factors, environmental factors, technological factors and management support factors) vary on the dependent variable (adoption of e-procurement). The F critical at 5% level of significance was 2.789. The F calculated (value =7.567) was greater than the critical value ($7.567 > 2.789$) which indicates that the independent variables (organizational factors, environmental factors, technological factors and management support factors) affect the adoption of NRC, a humanitarian organization in Kakuma Refugee Camp.

Table 4.4: ANOVA^a

ANOVA ^a					
Model		Sum of Squares	df	F	Sig.
1	Regression	4.120	4	7.567	.029 ^b
	Residual	50.048	78		
	Total	53.168	82		

Source, Author (2018)

$Ys = \beta_0 + \beta_1X_1 + \beta_2X_2 + \beta_3X_3 + \beta_4X_4 + \varepsilon$ become::

$$Y = 0.164 + 0.132X_1 + 0.47X_2 + 0.279X_3 + 0.491X_4$$

Where Y is the dependent variable (adoption of e-procurement) X_1 is the Organizational Factors X_2 is Environmental Factors, X_3 is Technological Factors, X_4 Management support.

Taking all independent variables constant at zero, successful adoption of e procurement will be at 0.164. The data findings also showed that taking all other independent variables at zero, a unit increase in the organizational factors will lead to a 0.132 increase in the adoption of e procurement, a unit increase in the environmental factors will lead to a 0.47 increase in the adoption of e procurement, a unit increase in technological factors will lead to a 0.279 increase in the , successful adoption of e procurement; while a unit increase in management support factors will lead to a 0.491 increase in , successful adoption of e procurement of NRC.

Table 4.5: Multiple Regressions

Model	Unstandardized Coefficients		Standardized Coefficients	Sig.
	B	Std. Error	Beta	
1				
(Constant)	.164	.472		.029
Organizational Factors	.132	.083	.141	.024
Environmental Factors	.470	.341	.193	.019
Technological Factors	.279	.037	.506	.001
Management support	.491	.110	.168	.013

Source, author (2018)

5. SUMMARY, CONCLUSION AND RECOMMENDATIONS

Introduction:

This chapter presents a summary of the study, discussion, and conclusions drawn from the findings and finally recommendations for practice and further research on the problem.

Summary of the Findings:

Organizational Factors:

The findings established a linear relationship between the organizational factors and successful e-procurement adoption in the following areas; firm's size, organization policy and organization structure. However, the relationship is the least compared to other factors under study. The organization factors (firm's size, organization policy and organization structure) have a weak linear relationship with successful e-procurement adoption compared to environmental, technological and management factors. The study also established under the organizational factor that firm's size had the least effect on the successful e-procurement adoption.

Environmental Factors:

The environmental factors as per the findings were second in linear connected with the influence of e-procurement adoption in the following areas; vendor commitment, policy of government and competitors actions. Majority of the respondents indicated that vendor support and commitment with a mean score of 4.21 and a SD of 0.991. Further the result indicated that vendor support/commitment play a key role in successful e-procurement systems adoption.

Technological Factors:

The study also recognized a linear relationship between technological factors and influence of e-procurement adoption in the areas of; IT infrastructure, information security risk and rapid technological changes. Respondents across were in agreement that, information security risk played a crucial role in the influence of e-procurement systems adoption.

Management Support Factors:

The findings recognized that management support factors are the most in linear relation to the influence on e-procurement adoption in areas of; budget allocation, strong central direction and staff training. Further the result indicated that budget allocation and staff training play a strategic role in successful e-procurement systems adoption. The findings indicate that budgetary allocation has the most effect on successful adoption of e-procurement with a mean score of 4.10 and a variability in agreement of a standard deviation (SD) of 1.171.

Conclusion:

On the influence of e-procurement adoption, the study concludes that, it is most affected by management support factors followed by environmental factors then technological factors and least affected by organizational factors.

Organization factors:

Organization factors had the least influence on e-procurement adoption. The policy of the organization had more weight in comparison with the firm size, and the organization structure. Humanitarian organizations need to formulate a clear cut policy that guides the whole process of implementation.

Environmental Factors:

Under environmental factors, continued vendor support proved to be more significant to IS innovations by ensuring all the gaps, bugs are corrected promptly and adequately. However much this study proposed the applicability and the adoption of IS innovations and practices by the organizations, there is still an alarming concern with respect to how certain humanitarian organizations incorporate the application of these systems into their mainstream processes.

Technological Factors:

Information security risk showed more weights in comparison to other technological factors studied, IT infrastructure and technological changes, in regard to the influence on e-procurement adoption. However, with the trend in which the humanitarian organizations are currently adopting, we understand that they are recognizing the necessity for them to stay cognizant of contemporary technological applications in operation and procurement systems.

Management Factors:

Organizations reluctance to invest more funding on information system, setting aside enough budgets for system implementation may take too long or even fail in the system implementation. A budget plan should also be made for staff development to ensure an effective adoption of e-procurement. From the research, it was established that these organizations despite been unable to fully adopt some of these systems, they had a sense of their appreciation, with some respondents denoting how NRC organization is in the path towards adopting and appreciating the benefits they may bring.

6. RECOMMENDATIONS**General Recommendations:**

Humanitarian organizations and Donors: The study recommends that the humanitarian organization directs some efforts in the direction of improving technological infrastructure exposure such as fiber optics, and satellite disks to mitigate problems of inadequate technological infrastructure and concerns of information security risks through government involvement. The flexibility of information systems can be enhanced enabling adaptability to technological changes which may be helpful to donors who are ardent in tracking donor funds. Improvement on use of systems could also be achieved through skills development of the staff in-house.

Policy makers: This study recommends to the policy makers the creation of vendor partnerships to enable integration among trading partners and the government should form a policy to improve the application of technology in organizations. The challenge of insufficient vendor's support and poor policy to sustenance the use of technology in organizations could be resolved by better planning' designing and operation of a comprehensive e procurement policy in the humanitarian procurement system in Kenya. These may expedite the influence of e-procurement adoption in humanitarian organizations.

Academicians and scholars: The study recommends future researchers to conduct research on other predictor variables that were not covered within the scope of this research. It could also be a base to enhance policy creation and supervision in the humanitarian sectors.

Specific Recommendations:

Norwegian Refugee Council: From the findings of the study, lack of an adequate organization policy or one that doesn't support e-procurement, poor organization structure were some of the issues that contributed against successful adoption of e-procurement. To resolve this, restructuring and realignment of the organization procurement policy will have a positive impact on success of e-procurement adoption by NRC as a humanitarian organization.

Lack of budget allocation and inadequate staff training were some of the issues that came out as working against successful e-procurement adoption at NRC. Staff development/training together with budgetary allocation should be emphasized. Close attention to these issues is likely to improve the level of successful e-procurement adoption by NRC.

Areas for Further Study:

This research is not exhaustive by any means and future researchers can conduct research on other predictor variables that were not covered within the scope of this research. Additionally, future researchers should conduct this research using other research designs such as qualitative research design to triangulate the findings of this research. Also, a similar research should be conducted but using different population such as Non-Governmental Organizations and government agencies.

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