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An Assessment of E-Procurement Adoption Challenges Facing SMEs in Namibia: A Case Study

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Abstract

Purpose: This study assesses the challenges faced by Small and Medium Enterprises (SMEs) in the adoption of e-procurement frameworks which seemingly influence their competitive advantage and sustainability. This is a Namibian case study using a single organisation in Windhoek. The study examines extensively the challenges faced by this organisation in the adoption and implementation of an e-procurement framework.

Methodology: The study adopts a mixed methods approach, using both qualitative and quantitative methods to comprehensively assess the challenges faced by this organisation in the adoption and implementation of e-procurement. Using a simple random sampling technique, questionnaires were distributed to 100 employees of the selected SME in Namibia. Quantitative data was analyzed using SPSS whilst the qualitative data was analysed through thematic data analysis techniques.

Findings: The study found that e-procurement elements such as e-invoicing, e-tendering, e-auctioning, e-ordering, e-sourcing, e-awarding, catalogue management, e-informing, e-contracting and purchase order integration were very popular amongst its users. The study further found that SMEs face several challenges in the full adoption of e-procurement frameworks such as untrained employees, lack of e-procurement knowledge from business partners or suppliers, lack of ICT infrastructure, lack of expertise and skill to support e-procurement, financial constraints, and lack of support from top management.

Unique contribution to theory, practice and policy*:* The study established a strong relationship between e-procurement practices and business sustainability and thus concluded that the key success factors in propelling e-procurement adoption among SMEs is derived from its benefits which among others include the reduction of paperwork, fairness and transparency of processes, standardization of procurement procedures, reduction of cycle time, competitive advantage, and the reduction of financing costs in the longer run which leads to business sustainability and growth.

Keywords: *Small and Medium Enterprises, E-Procurement, Adoption*

1.0 INTRODUCTION

Namibia has witnessed a phenomenal growth in the number of new SMEs (Kambwale, Chisoro and Karodia, 2015). It is believed that more than 40,000 SMEs are currently registered in Namibia. SMEs contribute to the national economy of Namibia in various ways, such as employment creation, adding value to the gross domestic product of the country, and assisting in the realisation of the government's 2030 vision agenda. However, it has also been observed that most of these businesses experience difficulties in fully adopting e-procurement strategies to achieve competitive advantage. In Namibia, the definition of an SME is based on the number of employees, annual sales turnover as well as the capital base of a business, as the relevant criteria. Small enterprises in Namibia are those with 11 to 30 employees and/or 300,001 to N$ 3,000,000 annual sales turnovers, whereas medium enterprises are those with 31 to 100 employees and/or N$ 3,000,001 to N$ 10,000,000 annual sales turnovers (MTI Policy on MSME, Namibia, 2021)

This research evaluates the challenges of electronic procurement (e-procurement) adoption by Small and Medium Enterprises (SMEs) in Namibia. Williams and Le Billon (2017) suggest that uneven distribution of common assets around the world and the contrasts in geological and climatic conditions are the essential reasons for the e-procurement divide.

For many SMEs in Namibia e-procurement is nothing but a dream, yet some have demonstrated continued resilience in their quest to adopt new technologies that underpin e-procurement such as e-tendering, e-sourcing, and e-informing. Many of such organisation who aspire to become e-procurement compliant are involved with the full process of supply chain management including coordination, transportation, operations administration, material handling, conveyance, administration, to mention but a few. E-procurement is seen as a value-added application of e-commerce arrangement used to encourage, coordinate, and streamline the whole procurement process (Gorla, Chiravuri & Chinta, 2017).

1.1 Problem Statement

In the modern competitive business environment, organisations need to embrace information communications technology to remain competitive; electronic procurement is a significantly important factor for almost all organisations (Callender, 2016). Several analysts have conducted studies on e-procurement, for instance (Tutu, Kissi and Desmond, 2019) considers the basic variables that impact e-procurement selection. Ruth (2018) suggests that if e-procurement activities are to help the advancement of e-procurement in this era, there ought to be more extensive dialog around it. SMEs often face unique challenges when it comes to technology implementation and business growth. In this era of technology, it is imperative that such factors are assessed to mirror the possible solutions already existing elsewhere. This paper assesses e-procurement adoption challenges confronting SMEs in Namibia through a case study.

1.2 Purpose of the Study

The main purpose of this research is to assess e-procurement adoption challenges facing SMEs in Namibia.

1.3 Research Objectives

The objectives of the study are as follows:

- To establish the e-procurement elements adopted by SMEs in Namibia.
- To determine the challenges faced by SMEs in Namibia in the full adoption of e-procurement.
- To investigate key success factors to full implementation of e-procurement by SMEs in Namibia.

2.0 LITERATURE REVIEW

2.1 E-procurement

According to Sharman (2018) e-procurement is defined as a system which enables the employees, procurement officers or end users or buyers, to make a purchase of goods and services indirectly. E-procurement automation encompasses the entire process from the moment a decision is made to make a purchase, through the selection of the goods through a catalogue or other process, the approval of the order, the placing of the order, the raising of the purchase order, the receiving of that order into the supplier's system, through to the invoicing and the delivery/receipt of the goods or services (Jaeger, 2017).

Clindia (2016) highlights that e-procurement or electronic procurement refers to the process of purchase and sale of goods or services through electronic methods, primarily the Internet. It is an alternative to the manual process of procurement and is certainly superior to the latter in many respects. Organisations are increasingly opting for e-procurement platforms, realizing its potential to curb irregularities and unnecessary costs. (Rouse, 2018) defines electronic procurement, (e-procurement) as the business-to-business (B2B) requisitioning ordering and purchasing of goods and services over the internet.

2.1.2 E-procurement Systems and Applications

This refers to a system which automates all activities in a procurement process such as storing requests, approval management, authorization, and interfacing with company financial system (Damavandi, 2018). Joni (2018) defines an e- procurement system as a system based on computer software and technologies. E-procurement includes all the phases of a purchasing process, from the needs of purchasing, to purchasing orders and receiving products.

2.1.3 E-commerce

E-commerce is about doing business electronically. It is based on the process and transmission of data, including text, sound, and video. It encompasses many diverse activities including electronic trading of goods and services, online delivery of digital content, electronic fund transfers, electronic share trading, electronic bills of lading, commercial auctions, online sourcing, public procurement, direct consumer marketing, and after-sales service (Jobodwana, 2015). E-commerce is narrower than e-business and focuses only on the buying and selling of products and services on the internet. There are many types of e-commerce such as business between enterprises (B2B),

business between enterprises and consumers (B2C) and business between consumers performed through customer to customer (C2C) (Naeem & Bashi, 2017). Electronic commerce (e-commerce) has been defined as the wireless transfer of business information and transaction via electronic data interchange (EDI), e-mail, electronic bulletin boards, fax machines and electronic funds transfer (Emmanuel, 2016).

2.1.4 E-business

E-business is defined as internet-enabled tools that facilitate supply chain integration with key suppliers and customers by helping them execute transactions, to coordinate and collaborate for achieving better supply chain performance (Stanislav, 2018). E-business is the application of telecommunication and information technology that work together for conducting businesses (Naeem & Bashi, 2017).

2.2 Key Features to Successful Full Implementation of E-Procurement by SMEs

Most of the projects and business processes adoption seem to fail due to poor analysis of the factors to be taken into consideration when implementing a certain system or project. This section explains key factors that may assist an SME to fully implement an e-procurement set up:

2.2.1 Analysis of the purchasing behaviour of end users

Analysing a firm's spend patterns calls for aggregating, cleansing, and analysing corporate spending data to reduce costs and improve operational performance (Aberdeen Group, 2017). As of late, e-procurement software vendors have incorporated analytical tools to track how much firms spend on certain product categories, how much they have purchased from vendors, and how efficient the procurement process has been across the entire enterprise (Foster, 2018). With these software tools, a firm can identify areas of spending with the highest product and administrative costs, all of which, if dealt with critically, promise high savings levels (Hope-Ross & Reilly, 2018).

2.2.2 Involve preferred and strategic suppliers in planning for e-procurement

Angeles and Nath (2005) state that vital providers of buyers' firms ordinarily constitute 20-40 percent of their supply base. These providers offer the buyer firm the most prominent chances of e-procurement success. Buyer firms ought to advance limit down the list of candidate providers for e-procurement activities by considering those providers with past e-procurement engagements with other clients, those interested in emerging developments, and those that have the local decision-making authority to endorse the investments and business process changes the buyer might require.

2.3.3 Select e-procurement software and services following the development of a solid business case

Angeles and Nath (2015) state that firms need to develop a solid business case for subscribing to e-procurement software and services through cost benefit analyses. There is a wide variability in the price of e-procurement applications from Trilogy software at the low end to Commerce One

solution at the high end. Firms may have to deal with multiple vendors, each specializing in different e-procurement functionalities.

2.2.4 Understand preferred supplier technology plans and their ability to support e-procurement initiatives

Buyers will increasingly and significantly rely on the ability of their suppliers to connect with them electronically and support the catalogue creation and maintenance issues involved in e-procurement. Thus, buyers will need to review their suppliers and choose those who are in the best position to respond to their e-procurement deployment plans (Hope-Ross, 2017; Rajkumar, 2017). Supplier readiness to respond to such buyer initiatives differ by firm and by industry (Hannon, 2011).

Buyers, therefore, should have a clear understanding of the technology plans of their suppliers and their subsequent ability to support e-procurement initiatives. Suppliers may prefer one e-procurement system over another on account of transaction fees being charged by e-marketplaces or catalogue managers. Also, there will be situations where suppliers will not be able to keep up with the technology requirements of the e-procurement initiatives of the buyers, much less with the requirements to continually update their catalogues designed to serve different buyers (Hope-Ross, 2016). Where the buyers are the hub firms or channel masters, it behoves them to initially cover the costs of enabling supplier involvement in managing catalogue data.

2.2.5 Consolidate suppliers and contracts

Rationalizing procurement practice also requires the identification of which products or services should be sourced from specific suppliers and thus, the consolidation of suppliers and contracts (Hope-Ross, 2017). Lion Nathan, an Australian-based beverage firm, discovered that with operations in New Zealand, China, and Australia, it was a major user of international sea freight service in these geographic regions (Bushell, 2018). The firm consolidated its sea freight spending and contracts with a single service provider and consequently, gained significant savings.

2.2.6 Centralize control of contracts, product data, catalogues, and price updates for indirect procurement

Firms usually begin their e-procurement efforts by sourcing indirect goods and/or services (also referred to as maintenance, repair, and operations goods/services or MRO) first (Orr, 2018; Kyte, 2018). Another recommended practice is for a firm to centralize the control of its contracts, product data, catalogs, and price updates for indirect procurement (Hope-Ross & Reilly, 2016 Hope-Ross, Luebbers, Purchase, & Reilly, 2017). Studies have shown that Web-enabled procurement enables the firm to centralize purchasing business processes and enables it to: (1) spread its administrative costs over a larger volume of purchases; (2) negotiate more favourable prices and terms for goods/services purchased; and (3) motivate end users to use the new system to eliminate off contract buying (Subramaniam & Shaw, 2016). Croom's study of procurement practices in the U.K., continental Europe, and the U.S. reveals that centralization allows firms to gain greater control over sources of supply, purchase price, and inventory policies (Croom, 2018).

2.2.7 Reengineer all affected business applications effectively

Changes in a firm's purchasing business processes in its relationships with suppliers can bring significant benefits (Attaran & Attaran, 2016; Anonymous, 2006; Rajkumar, 2006; Hope-Ross & Reilly, 2017).

2.2.8 Position a balanced catalogue range strategy (i.e., choosing from buyer-managed, seller-managed, and electronic marketplace-managed catalogues)

Firms need to make a portfolio approach to overseeing their connections with exchanging partners (Hope-Ross, et al., 2015). No single e-procurement arrangement can satisfactorily address the requirements of a firm (Rajkumar, 2015; Hope-Ross, et al., 2017). Firms will have to consider three distinctive electronic situations inside which to conduct e-procurement exercises: buy-side applications, sell-side applications, and commercial centre administrations (Kyte, September 14, 2015).

Buyer firms assessing marketplaces need to consider the following: marketplace's exchange volume and income; the type, profundity, and geographic reach of administrations offered; commercial centre innovation partners and union connections; long-term money related practicality; arrangements for buyer and vender namelessness; ownership of a basic mass of dealers to ensure a consistent stream of merchandise and administrations; notice method for buyers; nature of the data uncovered in a sell off; future plans and prospects; the administrative and compliance environment; and other extra administrations such as credit and coordination administrations (Furlonger & Landry, 2015; Andren & Knight, 2010).

2.2.9 Development of experts on e-procurement

The implementation of e-procurement strategies requires staff who are specialists with respect to the e-procurement issues (2016). Thus, to be successful within the application of e-procurement there is a need to have satisfactory e-procurement specialists at PPRA, and provider organizations and PEs who will oversee the day-to-day usage exercises and harmonization of the e-procurement framework.

2.3 E-Procurement System Elements Adopted by SMEs

For e-procurement to be fully functioning, there are certain elements that are required. These include but are not limited to; e-sourcing, e-tendering, e-auctioning, e-ordering and web-based ERP and e-informing. These elements serve as a cornerstone of e-procurement. The elements are discussed in detail below.

2.3.1 E-sourcing

E -sourcing or contract administration includes all aspects of the commercial preparation from advertisement investigation, promoting, offering counting barters, assessment, to contract transaction, grant, and administration (MoD, 2010 -2015). E-sourcing is one of the obtainment exercises which can be characterized as "the preparation of deciding long-term request necessities

in products or administrations, finding sources to satisfy those necessities through a quicker and more effective way, selecting providers to supply the necessities, arranging the buyer understandings through a web-based stage and overseeing the supplier's ensuing performance (Mandela, 2007, Paulo, 2015, Damavandi, 2015).

According to Ahlmann (2015) E-sourcing is associated with the following benefits:

- Reduced time
- Transparent and fair negotiation process
- Clearly defined SOW and project requirements
- Accessibility and global coverage
- Well-documented objectivity in the supplier selection
- Offers a simple format for submitting information online
- Quicker assessment process
- Cost saving associated with a paperless process

2.3.2 E-tendering

Perera (2015) elaborates the determination stage of e-tendering. Tailor (2017) posits e-tendering as an enabler. Tailor (2017) further suggests that through e-tendering, the whole bidding process is handled from the initial publicity through to the presentation of the contract. This is said to incorporate the trading of all significant information in electronic format. Thus, e-tendering is described as the method of sending Requests For x (RFX) to providers and getting the replies utilizing the Web. The information concerning the e- offering is centered on the item or benefit. Daniel (2013) expounds e-tendering as the capability for the organisation to get detailed entries from potential providers and Comparative terms: RFQ (request for quotation), RFT (request for tender), e-bidding. E-tendering offers the following benefits to an organisation:

- Reduced tender cycle-time
- Fast and accurate pre-qualification and evaluation, which enables the rejection of suppliers that fail to meet the tender specification
- Faster response to questions and points of clarification during the tender period
- Reduction in the labour-intensive tasks of receipt, recording and distribution of tender submissions
- Reduction of the paper trail on tendering exercise, reducing cost to both councils and suppliers.
- Improved audit trail increasing integrity and transparency of the tendering process
- Improved quality of tender specification and supplier response
- Provision of quality management information

2.3.3 E-Awarding

This involves the electronic opening of secure tenders; for example, being only able to open tenders which had been submitted by the closing date and time. Tender evaluation and tender award can be facilitated by an electronic procurement system (Daniel, 2013)

2.3.4 E-Contracting

This involves the establishment of an agreement with suppliers and can be the result of the e-tendering and e-award stages (Daniel, 2013). E-contracting is often used as a blanket term for any process involving electronic documents in the office, but there are different levels and purposes for digital and electronic operations (Hannah 2015).

2.3.5 E-Auctioning

According to Hartley (2012) the electronic auction (e-auction) is an e-business between auctioneers and bidders, which takes place on an electronic marketplace. It is an electronic commerce which occurs business to business (B2B), business to consumer (B2C), or consumer-to-consumer (C2C). E-Auction, also known as a 'reverse auction' is an electronic auction where suppliers bid online against each other for contracts against a published specification. Wouter (2014). According to Hartley (2015) E-auctioning has the following benefits:

- On-line tendering is a method of standardizing the procurement process
- It allows all the preferred bidders to be contained within a single database
- Good control of bidders' submissions
- Bidders can be monitored easily
- Easy comparison of bids
- Confidence in validity and integrity of contractual documentation.
- Time benefits, reduction in paperwork, postage, and photocopying
- Ease and speed of communication to multiple bidders
- Audit trail for documentation
- Secure bidding environment
- Better efficiency in the process
- Potential for access to competitors' bids
- The ability to submit more than one bid

2.3.6 E-ordering and web-based ERP Enterprise Resource Planning

According to Perera (2015) this is the method of making and choosing procurement orders, submitting buy orders, as well as accepting merchandise and services ordered, by employing a computer code based on the web. The method of creating, endorsing, and obtaining demands, setting buy orders and getting the products or administrations requested through a package based on web innovation, including e-MRO bargains maintenance, repair and operations (MRO), and web-based ERP bargains with product-related things (De Boer, Harink & Heijboer, 2012).

According to Griffin (2017), most of the businesses that have employed the concept of on-line ordering are reaping the following benefits:

- Ownership – ease of management and set up
- Low Setup Costs
- Speed and Efficiency
- Competitiveness
- Security – secured software available give peace of mind

2.3.7 E-informing

This concept permits dependable, valuable and on time information and data to be shared between the parties, especially, trade exchanges concerning installments data, modern item advancement, sourcing data as well as unused commerce techniques improvement. The minute the data is solid and steady between the trade partners, it helps companies to identify any potential hazard concerned with trade operations and it helps directors to create opportunities and make well-informed choices (Allan, 2016)

2.4 Challenges Faced by SMEs in the Full Adoption of E-Procurement

Technology adoption has been a challenge to many businesses of which SMEs are not the exception. To implement a system e.g. SAP for an organisation, it requires sound capital, a willingness to change the organisation culture, skills, and expertise as well to measuring the preferred benefits after the implementation of software. There are various Organisational and technical challenges on the ground that can limit the full integration and adoption of e-procurement in SME's procurement. Duru (2018) discusses challenges confronting e-procurement adoption as follow:

2.4.1 Technological Factors

The technology context represents the pool of technologies available to a firm for adoption. These can be both the technologies available on the marketplace and the firms' current equipment (Scupola, 2014). The most vital elements that will influence an organisation to adopt e-procurement are: Perceived benefits, Technological Infrastructures, Technological Complexity, and Technological Compatibility.

2.4.1.1 Inadequacy of Information Technology infrastructure (ICT)

ICT Infrastructure refers to technologies that enable internet-related businesses. ICT Infrastructure has had an influence on the volume of a nation's Internet transactions or on the number of e-business websites in a country. A better ICT Infrastructure can enhance e-business development (Kim, 2013). The ICT barriers to suppliers include lack of understanding, no commitment to specialist software and the start-up fee.

2.4.1.2 Technological Complexity

Complexity relates to the level of ease with which the e-commerce technology can be understood by the firms (Vanderslice, 2015). Basically, the easier the technology and its application are to understand, the faster and more immediate the adoption process can take place and vice versa, but it takes time and costs money for employees to understand and learn the technology (Almoawi & Rosli, 2014).

2.4.2 Organisation Size

Firm size is one of the most influential factors of internet adoption among SMEs (Karakaya and Khalil, 2010). According to Uliveira and Martin, (2010), three major arguments support the positive role of firm size in determining ICT adoption: the benefits of the new ICT, the greater availability of funds and the quicker capture of economies of scale. Thus, larger firms tend to adopt technology at higher levels, while smaller firms are inclined to adopt technology at lower levels (Cragg & Mills, 2016) due to size limitation.

2.4.3 Management Attitudes

Sarkar (2017) argues that support from top management facilitates the adoption and implementation of information systems. Almoawi and Rosli, (2012) add that the need for commitment and support from the owners or top management during the process of assessment of the innovation or technology, is of utmost importance. This commitment and support ensure that there is an obligation within the resources, which in turn will create a conducive environment within the firm for the adoption process of the technology. In most SME's, management might seem to have a negative attitude towards the implementation of e-procurement.

2.4.4 Financial constraint

Wanjohi (2016) states that lack of access to credit is universally a key issue for SMEs. This influences innovation choice by restricting the number of choices that can be considered. Numerous SMEs may utilize an inappropriate innovation since it is the one they can afford.

Credit constraints work in an assortment of ways around the globe where undeveloped capital markets force business people to depend on self-financing or borrowing from friends or relatives. The need of access to long-term credit for small undertakings forces them to depend on high interest short term funding. There are different other budgetary challenges that confront small undertakings. They incorporate the high fess of credit, high] bank charges and expenses.

2.4.5 Lack of expertise and technical skills

Wanjohi (2016) states that an adequate business skill, especially in the informal sector, has proved to be a factor that can boost economic growth around the globe. In this sector, practical skills are being developed at low cost and with financial support; various types of small-scale technology could be developed for labour-intensive enterprises that could absorb hundreds of young job seekers. However, those who run the businesses in this sector lack adequate business skills mainly

attributed to low levels of education. It is not sufficient to know how to produce a high-quality product. The technological knowledge of the owner can influence the adoption of ecommerce (Dubelaar, 2018). Conversely lack of technological knowledge on the owner's part can also inhibit the adoption of e-procurement (Almoawi, 2017).

2.4.6 Poor networking structure for international marketing

According to Kazimoto (2016) the reasons given for the threatening internationalisation of small firms in Africa are: unsaturated residential markets, little or no reputation in spite of the fact that quality items are produced. The weak linkage between large, small, and medium ventures could be an issue for future trade advancement. Building inter-firm linkages in African nations will require government arrangements that make an empowering venture environment through assess motivating forces and other measures that have a positive effect on the overall economy.

2.4.7 Setting customer services and needs satisfaction

Kazimoto (2016) stresses that expansive buyers are imperative drivers of innovative advancement in worldwide value chains. Semente (2017) posits that customer service is the backbone to customer satisfaction and that technology adoption improves customer satisfaction and loyalty.

3.0 RESEARCH METHODOLOGY

This section covers the research methodology of the study:

3.1 Research Design

The study uses a cross-sectional research design. A mixed methodology approach is used, both quantitative and qualitative approaches. Conclusive evidence is gathered through the application of the models selected in the literature review, through data collection from the selected participants.

3.2 Population

The target population of the study consists of all the employees of the selected SME organisation in Namibia. In total, this organisation employs 134 staff distributed amongst their different job categories.

3.3 Sample

Questionnaires were distributed to 100 employees of the selected SME in Namibia. This sample size was calculated using the raosoft.com sample size calculator, the margin of error used is 5 %, the confidence level is 95%. The sampling technique that was used for this study was the simple random sampling technique based on the probability sampling approach (Fearon, 2017).

3.4 Data Collection, Presentation and Analysis

The research instruments for this study were questionnaires containing both closed-ended and open-ended questions. Since the researcher used structured questionnaires, the SPSS version 28 was used to analyse the quantitative data, which was further presented through bar graphs, tables

and pie charts so that the data could be easily understood. The quantitative data was analysed through thematic data analysis techniques.

4.0 RESULTS

This section presents the results of the study for both the quantitative and the qualitative analysis.

4.1 Response Rate and Participant's Characteristics

A response rate of 100% was achieved. The characteristics of the participants in this study are described by age range, department, and gender as well educational level.

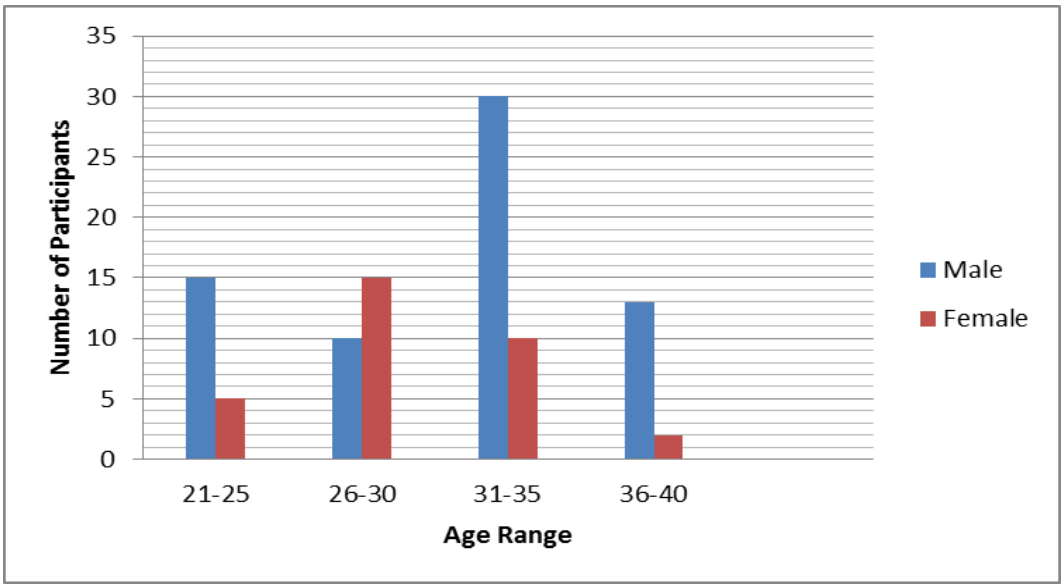

Figure 2: Age of respondents

Figure 2 above shows that most of the participants are in their early thirties.

4.1.2 Departments

The table presents the department, number of male and female participants from every department and the percentage of participant from each department.

Table 1: Participants vs gender

Departments	Male	Female	Total	Percentage
Administration	5	8	13	13%
Finance	10	9	19	19%
Engineering	32	8	40	40%
Quantity Surveyor	8	4	12	12%
Labourers	13	3	16	16%
Total	**68**	**32**	**100**	**100%**

Table 1 above shows the number of participants in the study; the majority of the participants are from the Engineering department which comprised 40% of the total respondents, followed by the Finance department which comprised 19% of the total respondents, followed by the Labourers department which encompassed 16% of the total respondents of the study, followed by the Administration department which included 13% of the total respondents of the study and lastly the Quantity surveyor department which comprised only 12% of the total respondents. The chosen SME organisation is male dominated in its employment structures.

4.1.3 Educational Level

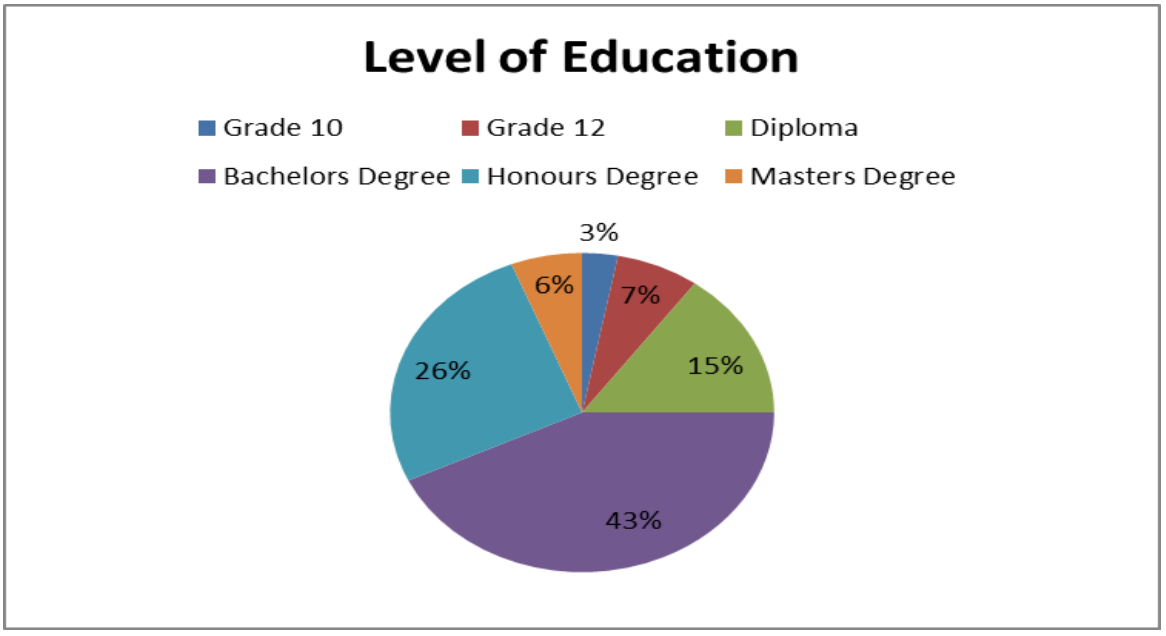

Figure 3: Educational levels of participants

Figure 3 above displays the educational level of the participants of the current study. The results show that 43% of the participants have Bachelor's degrees, 26% of the participants have Honors degrees, 15% of the participants have Diplomas degrees, 7% of the participants only have Grade 12, 6% of the participants have Masters Degrees, and 3% of the participants have Grade 10.

4.2 E-Procurement Elements Adopted by the Selected SME

The first objective of the study was to establish the e-procurement elements adopted by the selected SME. In order to achieve the objective participants were asked to mention all e-procurement elements that they felt were adopted by the selected SME, below are the results:

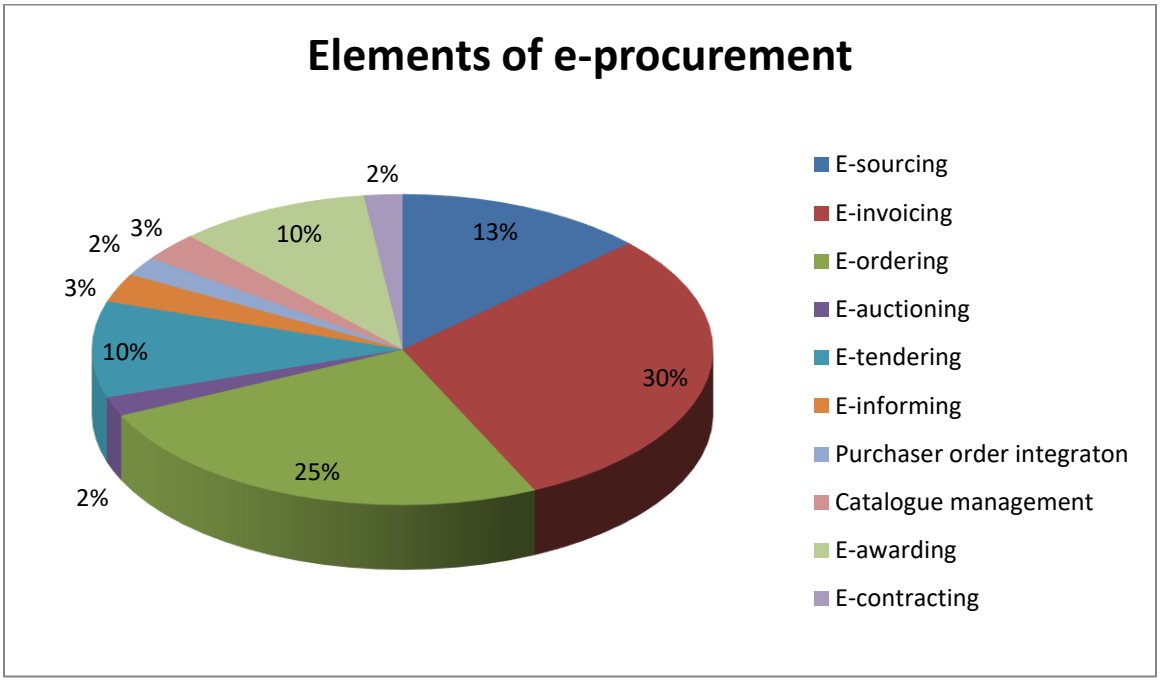

Figure 4: Shows the elements of e-procurement

Based on the view of the participants of the study, the results show that 30% of the employees were familiar with E-invoicing, E-ordering with 25% of the total respondents,13% that were familiar with E-sourcing,10% that were familiar with E-awarding, 10% that were familiar with E-tendering, 3% that were familiar with catalogue management, 3% that were familiar with E-informing, 2% that were familiar with E-contracting, 2% that were familiar with E-auctioning and lastly 2% that were familiar with purchaser order integration.

Table 2: Ranking of e-procurement elements

Rank	Elements	Percentage
1	E-invoicing	30%
2	E-ordering	25%
3	E-sourcing	13%
4	E-awarding	10%
5	E-tendering	10%
6	Catalogue management	3%
7	E-informing	3%
8	Purchaser order integration	2%
9	E-contracting	2%
10	E-auctioning	2%
		100%

Table 2 shows the results of ranking e-procurement elements from the highest to the lowest usage. E-invoicing was ranked first with 30%, E-ordering was ranked second with 25%, E-sourcing was ranked third with 13%, E-awarding was ranked fourth with 10%, E-tendering was ranked fifth with 10%, Catalogue management was ranked sixth with 3%, E-informing was ranked seventh with 3%, Purchase order integration was ranked eighth with 2%, E-contracting was ranked ninth with 2% and lastly E-auctioning was ranked tenth with 2%.

4.3 Challenges Faced by the Selected SME in the Full Adoption of E-Procurement

The second objective of the study was to determine the challenges faced by the selected SME while striving to achieve full adoption of e-procurement. The data was collected using a 5 point Likert scale as follows: **SD**-Strongly disagreed, **D**-Disagree, **N**-Neutral**, A**-Agree, **SA**-Strongly agree

Table 3: Challenges associated with implementation of e-procurement system

No	Items	SD		D		N		A		SA	
1	Using e-procurement fits well with the way our firm does business	57	57%	29	29%	7	7%	7	7%	0	0%
2	Using e-procurement fits well with the existing information system at our company	50	50%	36	36%	14	14%	0	0%	0	0%
3	Using e-procurement is easy for our employees	29	29%	21	21%	29	29%	21	21%	0	0%
4	Using e-procurement technology is clear and understandable to our business partner	50	50%	29	29%	21	21%	0	0%	0	0%
5	Our firm has already enough computers to enhance the adoption of e-procurement	43	43%	36	36%	14	14%	7	7%	0	0%
6	Our firm existing ICT Infrastructure is sufficient to enhance the use of e-procurement in tendering process	29	29%	21	21%	29	29%	21	21%	0	0%
7	Our firm has already existing in-house ICT infrastructure , expertise and skill to support e-procurement	36	36%	29	29%	21	21%	0	0%	14	14%
8	The firm has enough financial resources to support adoption of e-procurement	21	21%	14	14%	43	43%	21	21%	0	0%
9	Top management allocated resources to support e-procurement	57	57%	29	29%	14	14%	0	0%	0	0%
10	Top management is aware of the benefits of e-procurement	71	71%	29	29%	0	0%	0	0%	0	0%

4.4.1 Using e-procurement fits well with the way our firm does business

The findings from the respondents indicate that 57% strongly disagreed, 29% disagreed, 7% were neutral and 7% agree that using e-procurements fits well with the way the firm does business. This shows that current business operations and systems are not fit to implement e-procurement, simply because of financial constraint.

4.4.2 Using e-procurement fits well with the existing information system

The findings indicate that 50% strongly disagree, 36% disagreed, and 14% were neutral that using e-procurement fits well with the existing information system at the selected SME. This shows that the organisation does not have capacity and capability to accommodate the adoption of e-procurement.

4.4.3 Using e-procurement is easy for our employees

The results reflect that 29% strongly disagreed, 21% disagreed, 29% were neutral and 31% agree since employees need training on how to approach e-procurement. This show that 50% of the participants disagree with this statement, because employees still need to go through training and gain skills on how to use e-procurement. In reference to the literature review (Almoawi, 2017) states that lack of technological knowledge can also inhibit the adoption of e-procurement.

4.4.4 Using e-procurement technology is clear and understandable to our business partners

The findings from the respondents indicate that 50% strongly disagreed, 21% disagreed and 29% were neutral. This states that 71% of the participants strongly disagree with the statement that e-procurement technology is clear to their suppliers or partners.

4.4.5 Our firm has already enough computers to enhance the adoption of e-procurement

The findings from the respondents indicate that 43% strongly disagreed, 36% disagreed, 14% neutral and 7% agreed. This concludes that 79% of the participants disagreed that the selected SME has enough computers to enhance the adoption of e-procurement. This is also supported in the literature review as (Scupola,2017) states that the technology equipment represents the pool of technological challenges to a firm in detriment of e-procurement adoption.

4.4.6 Our firm's existing ICT Infrastructure is sufficient to enhance the use of e-procurement in tendering process

The findings from the respondents indicate that 29% strongly disagreed, 21% agreed, 29% neutral and 21% agree on there being sufficient ICT infrastructure to enhance e-procurement.

4.4.7 Our firm has existing in-house ICT infrastructure, expertise and skill to support e-procurement

The findings from the respondents indicate that 50% strongly disagreed, 29% disagreed and 21% are neutral that the firm has ICT expertise and skill on e-procurement application. This shows that 79% respondents feel that the firm does not have ICT expertise to support an e-procurement application. In reference to literature review section, Wanjohi (2018) states that most of the SMEs around the globe are faced with inadequate business and technological skill.

4.4.8 The firm has enough financial resources to support adoption of e-procurement

The findings from the respondents indicate that 50% strongly disagree, 25% disagreed, 25% neutral, and 21% agree that the firm has enough financial resources to support adoption of e-

procurement. This shows that most of the participants are aware that the selected SME has limited financial resources to support the adoption of e-procurement. Based on the literature reviewed, Wanjohi (2016) states that lack of access to credit is almost universally indicated as a key problem for SME's.

4.4.9 Top Management allocated resources to support e-procurement technology adoption at our Company

The findings from the respondents indicate that 57% strongly disagreed, 29% disagree, and the other 14% are neutral. This show that 86% disagree that that top management allocates resources to support e-procurement technology adoption at the selected SME. The result concurs with the literature reviewed that most top management of SMEs may seem to have negative attitudes towards the adoption of e-procurement.

4.4.10 Top Management is aware of the benefits of e-procurement

The findings from the respondents indicate that 14% strongly disagreed, 29% disagreed and 57% strongly agree that top management at the selected SME is aware of the benefits of e-procurement. Sarkar (2017) argues that top management support facilitates the adoption and implementation of information system, however, the aware of benefits seems not to translate into positive action such as the adoption of e-procurement which seems to be a paradox in this case.

4.4.11 Further challenges on implementation of e-procurement (Qualitative Results)

The respondents were further asked of any other likely challenge of implementation of e-procurement. The following were some of the main other challenges noted by the participants:

- Power supply problem
- E-Procurement policies/law
- Level of technology
- Cost of software,
- Lack of awareness of practitioners
- Digital signatures
- Lack of Computer knowledge, application and usage
- Lack of Familiarity with electronic procurement

4.5 Key Success Factors to Full Implementation of E-Procurement

The last objective of the current study was to investigate the key success factors to full implementation of e-procurement. Participants were required to rate those statements using the scale coded with **SD**-Strongly disagreed, **D**-Disagree, **N**-Neutral**, A**-Agree, **SA**-Strongly agree

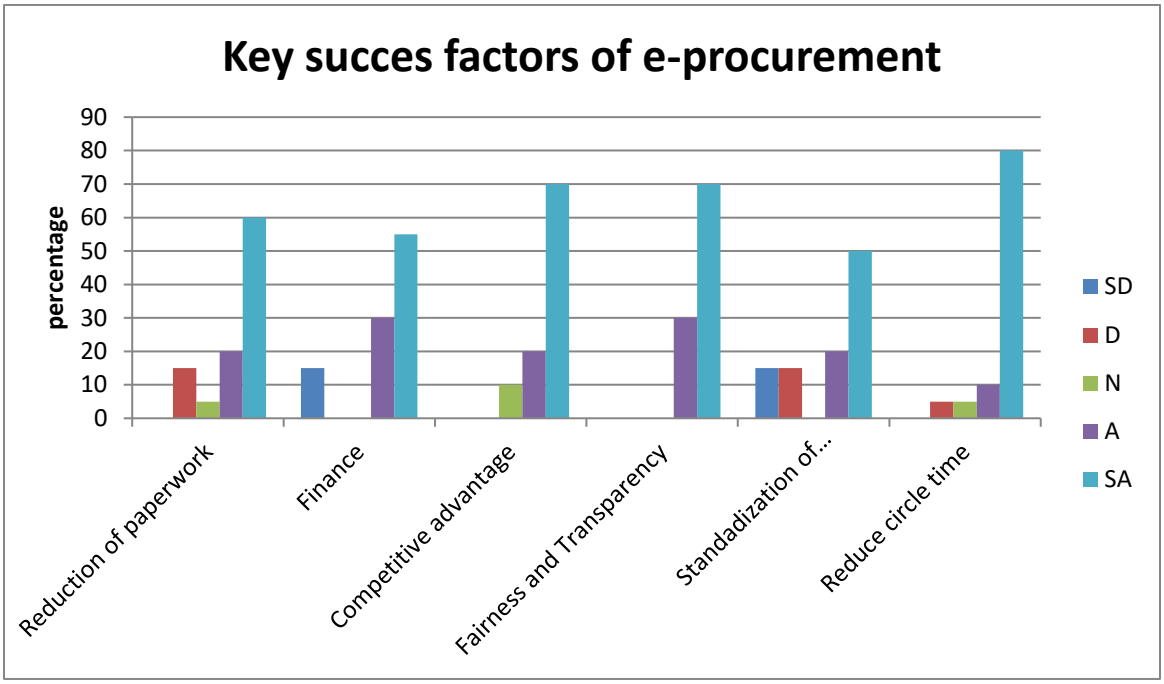

Figure 5: Shows the benefits of e-procurement

4.6.1 Reduction of paperwork

The results show that 60% strongly agreed, 20% agree mean while 5% were neutral and 15% disagree. This shows that 70% of the participants agreed that e-procurement reduces the use of paperwork. With e-procurement, everything can be saved and stored electronically. This not only saves you from needing more room, it also makes the process of finding older tenders simpler. With reference to Hartley (2017) E-procurement reduces paperwork.

4.6.2 Finance

Result show that 55% strongly agreed, 30%agree and 15% strongly disagree that e-procurement reduces costs. This shows that 85% agreed that e-procurement reduces costs as e-procurement saves you money by preventing duplicate spending, leveraging volume buying, and saving you costs associated with paper-based systems (for example, the cost of stamps to mail your paperwork). Also, this is supported by the literature review as (Hope-Rose & Reilly,2017) states that with these software tools a firm could identify areas of spending associated with the highest product and administrative costs, all of which promise high savings levels.

4.6.3 Competitive Advantage

The results show that 70% strongly agreed and 20% agreed that e-procurement gives a company a great competitive advantage while 10% are neutral. This shows that 90% agreed that e-procurement gives a company a great competitive advantage as not many SMEs use e-procurement which puts them at a disadvantaged in terms of e-tendering-ordering and all types of e-procurement. with reference to the literature review (Perera, 2018) states that the internet is the

greatest equalizer, as the online customers are focused on getting the product or services quickly and accurately.

4.6.4 Fairness and transparency

The results show that 70% strongly agreed and 30% agree. This explain further that 100% of the participants agreed that one of the successful factors of e-procurement is that it gives fairness and transparency across the entire organization as electronically conducting your procurement makes it easier to write and analyse reports on your procurement systems, meaning you can ensure that your procurement procedures conform to your policies.

4.6.5 Standardization of procurement procedures

The result show that 50% strongly agreed, 20% agreed that e-procurement standardizes procurement procedures while 15% were neutral and 15% disagree. This concludes that 70% agreed that e-procurement standardizes procurement procedures, as when you have various departments making procurement decisions, there can be differences in what and how they purchase. Conducting purchasing electronically makes it easier for every department to conform to company procurement standards.

4.6.6 Reduce circle time

The results appear that 80% unequivocally concur and 10% concur, however on the other hand, 5% were impartial and 5% oppose this idea. This appears that 90% of the respondents concurred that e-procurement decreases circle e-procurement time, because it is less time-consuming than conventional acquirement. Having your records put away electronically makes it less difficult to generate reusable tenders. Moreover, having e-enabled connections with providers, means that acquirement cycle times speed up. The e-procurement process kills pointless exercises, permitting you to centre on more important tasks as suggested by Daniel (2018). E-procurement has been demonstrated to be viable with respect to administration, including those related to human capital. A well-planned and executed workforce administration technique, one that combines innovation and nonstop collaboration with able suppliers can contribute to efficiency.

4.6.7 Respondents were further asked what they think could be done to enhance the full adoption of e-procurement by SMEs in Namibia (Qualitative Results)

- Involve Key Stakeholders
- Focus on Segments
- Identify Useful Measures
- Reengineer the Procurement Processes
- Manage Expectations
- Promote the importance of SMEs for growth
- Computer and application knowledge Training of Staff
- Internet services Speed improvement
- Familiarity with electronic procurement systems training

5.0 DISCUSSION & CONCLUSIONS

5.1 E-Procurement Elements Adopted by SMEs In Namibia

E- invoicing seemed to enjoy preference as this is required in the paying of invoices, via electronic funds transfer (EFT) especially. E-invoicing has benefits that are quite valuable to any enterprise, for example, cost savings, automated accounting procedures and increased efficiency of the workforce. E-invoicing was followed by E-ordering, this is supported in the reviewed literature (Griffin, 2017) who states that online ordering processes, payments and order in real time are faster and cheaper than human work. The other elements received less preference, however there is room for improvement in the use of other e-procurement tools if training and financing is sourced. Therefore, it is advised that SMEs in Namibia, like their counterparts elsewhere, include other forms of e-procurement such as e-tendering, e-auctioning, e-ordering, e-awarding, catalogue management, e-informing, e-contracting and purchase order integration, as they offer several advantages to SME performance and competitive advantage.

5.2 Challenges Faced by SMEs in Full Adoption Of E-Procurement

The study concluded that like the selected SME, most SMEs in Namibia are facing similar challenges when it comes to e-procurement adoption. That includes their inability to fully implement e-procurement. Among the key challenges are untrained employees, lack of e-procurement knowledge from business partners, insufficient ICT infrastructure, lack of expertise and skill to support e-procurement, lack of financial resources to support the adoption of e-procurement, and lack of support from top management.

The issue of financial resources has long been described in the literature as a key hindrance to full implementation of e-procurement tools as the cost of technology rises which in turn hinders adoption, this is supported by (Almoawi, 2017) who suggests that lack of technological knowledge can inhibit the adoption of e-procurement. With reference to the reviewed literature, Wanjohi (2018) states that the key problem for SMEs is that most of them around the globe are faced with inadequate business and technological skills. The challenge is further exacerbated by what seems to be top management's resolve not to support technology when it comes to cost cutting measures. Hence, due to limited funding, SMEs in Namibia find it difficult to recruit qualified staff or to provide the required training. Therefore, they find it difficult to adapt at a fast enough pace. Other challenges such as e-Procurement policies not fully developed at Organisational level, the lack of ICT infrastructure and lack of familiarity with electronic procurement are among the key challenges.

5.3 Key Success Factors to Full Implementation of E-Procurement

The study concluded that the key success factors that will likely propel the use of e-procurement among SMEs in Namibia rest heavily on their benefits which include chiefly: the potential for reduction of paperwork, fairness and transparency of processes, standardization of procurement procedures, reduction of cycle time, competitive advantage, and the reduction of financing costs in the longer run thus leading to business sustainability and growth.

5.4 Myriad of e-Procurement Adoption vis a vis Low Adoption Rate by SMEs in Namibia Explained

The findings show that although e-procurement brings a host of benefits, still a low adoption rate is witnessed among SMEs. The main reason behind low adoption is identified as the SMEs failure to adapt due to a fear of upfront costs involved, as SMEs seem to find it difficult to get the initial investment required to form the basic e-procurement infrastructure, which is high. Further, a lack of skilled professionals who may demand high pay packages to be hired, the fear of development time, fear of customized e-solutions which is costly, employees lack of training seems to outweigh the benefits of e-procurement adoption among SMEs in Namibia.

6.0 RECOMMENDATIONS

Based on the above conclusions, the following recommendations are made:

6.1 Top Management support

Management ought to supply the essential assets to support the implementation of ICT application aimed at e-procurement full adoption.

6.2 Invest in Information and Communications Infrastructure

Investment in ICT infrastructure is paramount. SMEs in Namibia need to prioritise such investment as part of their business plan and funding proposals.

6.3 Reengineering

Business reengineering is critical and should be part and parcel of the SME's strategic business plan. The value of e-procurement lies in its capacity to convert inflexible, wasteful bureaucracies into more proficient, responsive organizations by updating workflows and decision-making procedures. Reengineering maintains a strategic distance from duplicating improper, wasteful procedures within the modern framework.

6.4 Continuous Training to employees

Employee training makes a difference. All possible training needs are to be explored and implemented from time to time, hence training budgeting is essential.

6.5 Develop Supplier Capabilities

For e-procurement to be viably connected within the country, there ought to be a common framework that will be harmonizing the obtainment exchanges between the buying organisations and the offering organisations. Such supply chain networks are critical for the efficient delivery of goods and services, hence exploring ways to enhance this relationship is critical for SMEs too.

6.6 Capital Investment on Information Technological Infrastructure

E-procurement application requires great and steady funding. Therefore, an adequate funding sourcing strategy should be implemented.

6.7 Recommendation for Further Study

Since the nature of e-procurement needs may vary from one industry to another, it is imperative that industry specific studies of this nature are conducted from time to time.

7.0 REFERENCES

Aberdeen Group. (2017). Best Practices in e-Procurement: The Abridged Report, December 2017. Retrieved on December 5, 2020, from http://www.aberdeen.com.

Almoawi, A. R. N. A., & Mahmood, R. (2012). Applying the OTE model in determining the e-commerce adoption on SMEs in Saudi Arabia. *Asian Journal of Business and Management Sciences*, *1*(7), 12-24.

Andren, E., & Knight, L. (2014). E-Marketplaces: Is the Bloom Off the Rose. *Strategic Analysis Report*.

Angeles, R., & Nath, R. (2005). *Critical Success Factors for the Adoption of Business*: *To Business Electronic Procurement*. Communications of the IIMA, 5(1)

Attaran, M., & Attaran, S. (2015). Catch the wave of e-procurement. *INDUSTRIAL MANAGEMENT-CHICAGO THEN ATLANTA-*, 16-21.

Bushell, S. (2004). *Getting a grip on spending*. CIO Magazine, Retrieved from www.cio.com.

Cagliano, R. F., Caniato, & Spina, G. (2003). E-business strategy: How companies are shaping their supply chain through the internet. *International Journal of Operations and Production Management, (25)*1309-1327.

Cragg, B. P., & Mills, M. A. (2016), *Internet adoption by small firms*. NZ: University of Canterbury.

Croom, Simon R. "The impact of web-based procurement on the management of operating resources supply." *Journal of Supply Chain Management* 36, no. 4 (2015): 4-13.

Crossan, Frank.*Nurse Researcher (through 2013); London Vol. 11, Iss. 1, (2003): 46-55*

Damavandi, M. R. (2017). Implementation of E-procurement and its performance effect on ship management companies: Case study of IRISL.

Daniel, J. (2018). *An analysis into the factors affecting the uptake of applications of e-procurement, within the UK public sector* (Doctoral dissertation, Loughborough University).

Davila, A., Gupta, M., & Palmer, R. (2003). Moving procurement systems to the internet: The adoption and use of e-procurement technology models. *European management journal*, *21*(1), 11-23.

De Boer, L., Harink, J., Heijboer, G. (2012), A conceptual model for assessing the impact of electronic procurement, *European Journal of Purchasing & Supply Management*, *Vol. 8 No.1*, pp.25-33

Dobler, D. W., & Burt, D. N. (1996). *Purchasing and supply management*. New York: USA.

Dubelaar, C., Sohal, A., & Savic, V. (2005). Benefits, impediments and critical success factors in B2C E-business adoption. *Technovation*, *25*(11), 1251-1262.

Emmanuel, A. (2016). Adoption of E-commerce in Nigerian Businesses: A change from traditional to e-commerce business model in Richbol Environmental Services Limited.

Foster, T.A. (2018, April 2). *A bigger footprint for online purchasing: Supply chain e-business*. Retrieved on September 15, 2020, from www.supplychainbrain.com

Furlonger, D., & Landry, S. (2015). *Questions to ask potential b2b marketplace partners: Best practices and case studies.* Retrieved August 15, 2017, from http://www.gartnergroup.com.

Gebauer, J., & Shaw, M. J. (2002). *Introduction to the special section: Business-to Business.* London: UK.

Handfield, R. B., Nichols, E. L. (2002). Introduction to supply chain management. *International Journal of Production Economics. (9),* 1, 79-102.

Hannon, D. (2001). 'Unready'suppliers slow move to e-procurement. *Purchasing*, *130*(23), S10-S10.

Hope-Ross, D. (2016). *E-procurement odyssey: 2002 and beyond*. Retrieved on September 17,2017, from http://www.gartnergroup.com.

Hope-Ross, D., & Reilly, B. (2018). *CEO and CIO update: Examining the business case for e-procurement.* Retrieved on September 19, 2020, from http://www.gartnergroup.com.

Hope-Ross, D., Luebbers, J., Purchase, E., & Reilly, B. (2017). *E-procurement: A blueprint for revolution or hype*. Retrieved on July 22, 2017, from http://www.gartnergroup.com.

Jobodwana, Z.N., (2015). E-commerce and mobile commerce in South Africa: regulatory challenges. *J. Int'l Com. L. & Tech.*, *4*, p.287.

Joni, T. (2018). *Benefits and implementation challenges of an electronic procurement system*. Retrieved on 20 August 2019, from http://www.doria.fi/bitstream/handle/10024/59168/nbnfi-fe201002111363.pdf

Kalakota, R., & Robison, M. (2010). *E-business, roadmap for success*. Addison Wesley: Longman.

Kambwale, J. N., Chisoro, C., & Karodia, A. M. (2015). Investigation into the causes of small and medium enterprise failures in Windhoek, Namibia. *Oman Chapter of Arabian Journal of Business and Management Review*, *34*(2603), 1-30.

Karakaya, F., & Khalil, O. (2010). Determinants of internet adoption in small and medium sized enterprises. *International Journal of Internet and Enterprise Management, (2),* 4, 1-11.

Kim, D. J. (2013). E-business for nations: a study of national level e-business adoption factors using country characteristics-business-technology-government framework.

Kothari, C. R. (2011). *Research methodology: Methods and techniques.* New Delhi, India: New Age International.

Kyte, A. (2000). *E-Procurement: Yet another three-tier architecture.* Retrieved on June 5, 2017, from http://www.gartnergroup.com

Mandela, N. (2014). Education is the most powerful weapon which you can use to change the world. *Computer, 8,* 45pm.

Mbokane, A. (2009). *Research design, research methodology and population*. Retrieved on April 29, 2017 from http://www.uir.unisa.ac.za

Min, H., & Galle, W. P. (2003). *E-purchasing: Profiles of adopters and non-adopters*. *Industrial Marketing Management*. Prentice Hall: USA.

Ministry of Defence. (2008). E-Procurement Strategy and Plan.

Ministy of Trade and Industrialisatin National Policy on Micro, Small and Medium Eterprises in Namibia, (2021).

Mrope, N., & Mayage, E. (2002). *Understanding International purchasing: Mzumbe book Project*. Tanzania.

Naeem, M., & Bashi, O. (2017). RDF as semantic markup and web visibility.

Neuman, W. L. (2000). *Social research methods: Qualitative and Quantitative approaches*. (6th ed.). Boston: Allyn & Bacon.

Paulo, A. (2015). *Electronic procurement: Dealing with supplier adoption*. Lisbon University Institute.

Premkumar, G., & Roberts, M. (1999). Adoption of new information technologies in rural small businesses. *Omega*, *27*(4), 467-484.

Rajkumar, T. M. (2010). E-Procurement: Business and Technical Issues. *Journal of Information Systems Management, (4),* 18, 52-61.

Sanders, N. R. (2005). IT alignment in supply chain relationships: A study of supplier benefits. *Journal of Supply Chain Management*, *41*(2), 4-13.

Uliveira, T. & Martin, M. (2010). Firms patterns of e-business adoption: Evidence for the European Union Orr, B. The case for web-based procurement. *ABA Banking Journal, (4),* 94, 59.

Vanderslice, S. (2015). Listening to Everett Rogers: diffusion of innovations and WAC. *Language and Learning Across the Disciplines*, *4*(1), 22-29.

Whyte, C. K. (2000). E-procurement: the new competitive weapon. Purch Today April 2000.\lk

Zeng, A. Z., & Pathak, B. K. (2010). Achieving information integration in supply chain management through B2B e-hubs: concepts and analyses. *Industrial Management & Data Systems*.