



## Challenges limiting small and medium scale enterprises from adopting electronic commerce in Tanzania

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### Suggested Citation:

Nikundiwe, E. A. (2022). Challenges limiting small and medium scale enterprises from adopting electronic commerce in Tanzania. *Global Journal of Business, Economics, and Management: Current Issues*. 12(2), 180-189. <https://doi.org/10.18844/gjbem.v12i2.6249>

Received from January 02, 2022; revised from April 20, 2022; accepted from May 12, 2022.

Selection and peer-review under the responsibility of Prof. Dr. Andreea Claudia Serban, Bucharest University of Economic Studies, Romania

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### Abstract

The paper describes the challenges of SMEs in the adoption of e-commerce technology in Tanzania. Dar es Salaam city-Ilala Municipal was chosen as a case study because SMEs found in Dar es Salaam are more likely to be using e-commerce since Dar es Salaam is among regions where most SMEs are connected to the internet are found in Tanzania. The researcher collected data from 30 SMEs found in Ilala Municipality. The data collected were then subjected to analysis using Quantitative methods and content analysis. Frequency and percentage were used in data presentation, where questions on technical challenges, Technological challenges, and management attitudes were answered. The results indicate that there are Technical, technological challenges, and management reasons that limit SMEs from adopting e-commerce. It was concluded that building any kind of electronic commerce system requires a strategy, that is the vision of the goal to achieve, a clear rationale of the business value, and a picture of the process to achieve such a goal and avoid a common pitfall.

**Keywords:** Challenges; E-Commerce; SMEs; Tanzania.

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## 1. Introduction

The use of electronic devices, systems, and infrastructures to conduct business operations around the world has significantly improved the way most organizations have been operating. Electronic commerce is rapidly growing at a global level, and it has affected all industries with the inclusion of SMEs and has changed how organizations conduct business (Millita 2015). The positive impact of E-Commerce has been felt from all angles, from Large Enterprises to Small and Medium Scale Enterprises (SMEs).

Due to the services offered by the internet, it is now regarded as one of the most crucial networking tools and techniques. It plays a big role in the dissemination of knowledge globally and it is responsible for the sharing of experiences and knowledge, the dissemination of culture, and the creation of communication bridges between emerging and developed economies. The Internet is a vital tool for many SMEs, both in developed and developing economies (Mainardes et al. 2019). The web has played a vital task in the flourishing broadcasting of new technologies and the realization of the modern method of internet commerce. Amid the improvement and growth of Internet technology over several decades, e-commerce, conducted via the Internet, has become an essential channel for many businesses (Turban et al., 2018).

As observed in many economies around the world, especially among the developed countries, e-commerce is an indispensable business tool in the field of ICT and the technology is now moving to develop countries where SMEs are playing a vital role in the development of the business sector. In Tanzania, SMEs make up to 70% of the existing business operations. Business activities in the present world value the transition to e-commerce and have become essential pillars in the growth of many economies. As a result of this progress, businesses seek to maximize the growth of e-commerce at a high intensity and to take full advantage of technology that will help increase e-commerce efficiency and improve business processes, performance, and productivity (Kartiwi et al., 2018).

### 1.1. Related Studies

The common principle is that, in this century, e-commerce through the Internet will create many opportunities for small and medium enterprises (SMEs) and individuals to conduct online transactions worldwide. However, Mainardes et al. (2019) say that most SMEs, in the context of emerging economies, are still not aware of the benefits of e-commerce.

Furthermore, the uneven adoption and diffusion of various ICT resources, goods, and services between emerging and developed economies - and between urban and rural SMEs - similarly show how e-commerce is valued and how it functions in organizations (Kurnia et al., 2015). Many researchers have further concluded that the accessibility of e-commerce resources in developed economies has contributed significantly to e-commerce adoption and its integration as an innovation in the business processes of those organizations (MacGregor & Kartiwi, 2010). They also found, however, that emerging economies experience a challenge in obtaining e-commerce resources and using them successfully, and the overall cost of acquiring e-commerce projects is extremely high. This is the case for many SMEs in emerging economies (Kartiwi et al., 2018). The collapse of various e-commerce projects in developing countries has been attributed to problems of "poor understanding of the context" and has led to the closure of e-commerce businesses.

Different studies have mentioned the importance of E-Commerce among Small businesses regardless of the challenges they encounter in the adoption process. According to (Zhankang & Davis, 2015), different models have been developed to check the challenges facing SMEs in the adoption of E-Commerce. Some of these models are those by, relative advantage, enhanced cash flow & productivity, ability to compete and grasp new customers, improved customer service, enhanced potential efficiency, information gathering and building the image of the firm and promotion, sales increase, and getting new partners,

competitive edge, and organizational-wide support, the productivity of the managerial function of the firm, and Strategic decision aid (Grandon & Pearson, 2012).

Grandon (2012) E-Commerce challenges are relatively higher for SMEs operating in most developing countries. However, there has been positive development of e-commerce in all sectors despite the challenges encountered especially in developing countries. Since the 1990s, the development of the telecommunication sector, which has increased the accessibility of the internet among societies have been one of the important aspects in the adoption of E-Commerce by most SMEs. Global System for Mobile Communications (GSMA) Mobile 360 series' general director has reported that smartphone penetration in 2020 will triple that in 2014, rising from 226 million in the report time of 2015 to 720 million by 2020 (Okonji, 2016). As a result, the development of the telecommunication industry has seen a significant increase in the number of subscribers, which has also affected innovation and entrepreneurship development.

The GSMA also claimed that at the end of 2020, 90% of the mobile growth will be led by the developing countries; as the mobile technology is already the principal platform for access to the internet in many parts of the globe, bearing in mind the absence of substitute infrastructure (GSMA, 2016). Due to the development of telecommunication, the use of mobile phones and e-payment systems has started receiving attention among users. Some businesses have seen the use of e-payment systems as an effective means of conducting business. Security, time management, and simplification brought about by the e-payment systems make it acceptable and effective to some businesses.

Several studies including Shney and Hurasha (2016) have mentioned that E-Commerce can enhance most small businesses to sharpen their competitive advantages in the global market. In view of the importance of small businesses in Africa and the available business opportunities, the development of ICT enhances and improves the competitive advantage of most SMEs. SMEs use the advantages of ICT in enhancing E-Commerce adoption. According to Millita (2011) despite ICT's importance in creating business opportunities, E-Commerce adoption among small businesses in Africa remains exceptionally low. The study further mentioned that understanding the reasons for this is especially important in enhancing SMEs' business opportunities and increasing SMEs' competitive advantage. Still, the standing literature on E-Commerce adoption challenges amongst SMEs in third-world countries had some gaps, as most of them do not fully reflect the existing actual situation in Africa. This paper covers the previous research done on barriers to E-Commerce adoption in third-world countries, taking Ilala District in Tanzania as the case.

The slothful pace of e-commerce dispersion in the SME sector has led to a variety of studies from various researchers around different parts of the world. These studies have revealed that SMEs are in general lagging behind in comparison to larger organizations as far as the adoption and usage of e-commerce is concerned. Wagner & Ian (2003) studied the adoption of e-commerce by SMEs and found that SMEs could gain a cutthroat advantage through adopting e-commerce as it can advance their market performance by having better access to the market. A recent study by Nazir and Zhu (2019) and Rahayu and Day (2017) further revealed that high dependence on email services, lack of government support, lack of ICT specialists, and lack of financial resources were all obstacles to the low adoption of e-commerce services by SMEs in Pakistan and Indonesia.

Salehi (2013) also argued that economic and cultural poverty and low awareness of information technology hinder the adoption of e-commerce in Iran. In line with the findings of other studies, Santhosh (2019) studied SMEs and found several obstacles and difficulties in adopting technology,

internationalization, and financial performance. Financial systems were seen as significant hurdles for SMEs and need to be restructured to allow for online payment mechanisms and credit facilities.

Awiagah et al. (2016) identified regulatory conditions that also play a crucial role in stimulating SMEs and have a more significant impact on the adoption of e-commerce in developing countries. This study shows; that inadequate infrastructure is a significant barrier to e-business adoption by SMEs in developing countries, and this situation is drawing the attention of many parties with the inclusion of researchers given the critical role that SMEs play in improving economies through job creation and poverty reduction. The expansion of e-commerce technologies for SMEs in any developing country like Tanzania would have a positive impact on the commercial and economic progress of the country (Makiwa & Steyn, 2019; Rahayu & Day, 2017).

SMEs adopting e-commerce in developing countries including Tanzania face challenges such as lack of telecommunications infrastructure, lack of or inadequately qualified staff to develop and support e-commerce sites, and lack of or limited skills among customers and business partners needed to use the Internet, lack of timely and reliable systems for the delivery of physical goods, low bank account and credit card penetration, low income, and low computer and Internet penetration (Kabanda & Brown, 2015; Santhosh 2019).

Most international economies depend mainly on the role of SMEs in supporting the national economy in different countries. SMEs contribute significantly to the economic development of the country, representing Tanzania around 70% of all businesses, and providing the main source of jobs and income for the Tanzanian people. SMEs account for a greater proportion of economic activity and international development organizations are active (Makiwa and Steyn, 2019). In Tanzania, SMEs historically played a relatively significant role in the process of economic development.

The Tanzanian Ministry of Industry (MOI) classified SMEs based on labor and investment costs criteria. Based on Tanzania MOI, Small and medium enterprises are defined as those businesses having 4-50 workers, respectively. As to the ceilings for investment costs, they are set at Tshs 5 million and Tshs10 million for small and medium enterprises respectively (Ministry of Industry and Trade, 2010). E-commerce Electronic commerce refers to piloting business transactions over the Internet, which includes the exchange of information of value in the form of products and services as well as expenditures, using web-based technologies (Fraser, Fraser & McDonald, 2000). Eurostat, (2004) defined e-commerce as transactions conducted over Internet Protocol-based (IP) networks or over other computer-mediated networks (e.g., EDI if not carried out via IP). The Internet and e-commerce are transforming the way firms function by redefining how back-end operations are conducted.

Studies of e-commerce issues in industrialized countries indicate that issues faced by SMEs in emerging countries can be different (Mainardes et al. 2019). Many SMEs in emerging countries are not accomplishing even minimal levels of e-commerce adoption, also the adoption of web-enabled transaction processing by small businesses has not been as widespread as would be expected (Kurnia et al., 2015). It has been revealed previously that the rate of e-commerce adoption in SMEs has been low. Although research indicates that e-commerce offers feasible and practical solutions for organizations to meet the challenges of a predominantly changing environment, the available studies related to SMEs in developing countries reveal a delay or failure of SMEs in adopting e-commerce.

According to the United Republic of Tanzania (2013), SMEs contribute about 70% of the national GDP, they constitute about 80% of all employment and also contribute over 80% of manufactured goods output. Despite the importance of SMEs to economic growth, the performance of SMEs and their survival remain exceptionally low and questionable among stakeholders (Asiimwe, 2017). According to the Ministry of Trade Tanzania (2017), about 60% of the small businesses just fail in the first year of their

operations. Several factors have been contributing to this; poor saving culture, deficiency of entrepreneurial skills, and incompetence in exploiting new growth opportunities have been underscored as some of the main factors for the low survival rate (Nangoli et al, 2013).

The emerging world shares some common complex challenges: to improve education; promote competition, and establish regulations to develop a high value-added service for the SME business sector. This paper, therefore, contributes to the knowledge of e-commerce and emerging economies, by highlighting the barriers associated with SMEs' adoption of e-commerce in businesses, in emerging economies, since it is believed that the emerging world has an economic deficiency, technological deficit, and both chaos and potential (Asiimwe, 2017).

Despite these efforts to stimulate E-Commerce, most SMEs in Tanzania have not reached the phase of having a fully interactive, transactive, or integrated E-Commerce capability (Molla & Licker, 2005). Several factors have been linked with poor adoption of E-Commerce by SMEs, these factors have been grouped into different 5 areas as SMEs' characteristics or behaviors, economic factors, legal-related factors, culturally related factors, and technical and infrastructural factors. (Kartiwi et al., 2018). The study by Kabanda and Brown (2015) and also study by Molla (Licker, 2005) mentioned SMEs' related factors and also surrounding factors being the main challenges that make most the SMEs fail to adopt E-Commerce in most the developing countries. According to the study, the SMEs' related factors that hinder the adoption of E-Commerce included management of SMEs, level of awareness, financial resources, technology, and expertise to adopt and use E-Commerce. In addition, factors of the environment that have an effect on the adoption of E-Commerce among SMEs include 'government laws and regulations, social structures, national policies, technical change and the natural environment that directly impact the companies' (Nazir & Zhu, 2018; 2019).

### **1.2. Purpose of study**

According to Green (2013), other factors are Technical related factors such as internet security, legal and regulatory barriers, and limited use of E-Commerce as an obstacle. Even though the various highlighted studies have done an investigation of the E-Commerce phenomena in the context of a developing country like Tanzania, not even one has presented a theoretical analysis of their findings that is grounded in this context. This study dwells on making a thorough assessment of the critical impediments facing Tanzanian SMEs in their quest to adopt E-Commerce, and in the end, it puts forward strategic propositions that will enlighten policymakers and other business practitioners alike on the best ways of mitigating the impediments through learning how to prioritize the resources that are available in the country.

## **2. Materials and Methods**

This study employed a mixed methodology in collecting and analyzing the data. The selected methodology was considered appropriate to generate desirable and relevant data. The strategy employed methods of data collection that would capture the in-depth and detailed data depending on the purpose of the study, manageable sample size, and affordable costs .

### **2.1. Data collection instrument**

Two types of qualitative methods, namely semi-structured interview and focus group discussion supported by documentary analysis have been used. Data was collected through questionnaires, interviews, and documentary reviews. These two methods were applied because the interest was to identify the challenges of SMEs in the adoption of e-commerce.

### **2.2. Participants**

Specifically, the challenges were examined through the views of SMEs Ilala- Dar es salaam. In this study, the researcher adopted a case study research design concerning the study's objectives. A sample of 30 SMEs was selected to represent others who were not easily established because of a shortage of time and unavailability of reliable information from visited government agencies.

### **2.3. Data analysis**

Quantitative data was carefully organized and analyzed through tables, graphs, bar charts, percentages, and frequencies while qualitative data was analyzed through the content analysis method while qualitative data were analyzed through content analysis.

### **3. Results**

**Lack of ICT Expertise:** Evidence in this study showed that SMEs at the initial stage of adoption and institutionalization stated that most of their employees generally did not have basic ICT skills with basic computer literacy and technical networking skills. However, these employees – and the Organisation as a whole – lacked software-specific related skills necessary for E-Commerce, as SME explained: We do not have the expertise we need to perform E-commerce, therefore, we usually outsource technicians with vast experience.

One of the participants stated as follows;

*Most of the things are outsourced especially in IT. Our website is maintained by one IT person from outside - why should I pay for an IT person to sit around when I can outsource the service...remember these guys are expensive. So, he comes once in a while for maintenance or to address technical faults. Contractual is cheaper than having them here permanently because you will have to pay their salary, their pension, their transport fare allowances, etc. which we as small as we are we cannot afford and sometimes for them doing nothing. Yeah, this is how most of us [SMEs] survive.*

The results indicate that the majority of SME owners thought that their Organisation lacked sufficient expertise to implement and maintain E-Commerce – due mostly to the presumed expense of acquiring an ICT expert. A lack of technological resources was reported by the majority of SMEs as a hindrance to E-Commerce.

SME 25 explained: *Having an interactive website would require us to upgrade our technology facilities. Where will we get the money to do that? That is why we decided not to go beyond the standard expectation of having a website. Besides, most of our clients prefer contact via the mobile its less hassle.*

The general perception was that the lack of reliable, accessible Internet services was the main hindrance to e-commerce institutionalization. SMEs that did not report technological resource scarcity indicated that they were able to enjoy the same advantages as SMEs that would have institutionalized E-Commerce because they were able to transact using their mobile phones. They did not feel inadequate technologically. SMEs in the Tourism and Entertainment reported high occurrences of a lack of technological resources required to adopt and institutionalize E-Commerce because of the nature of the industry.

As SME23 indicated: *We need to be on the Internet – all the time if possible. But we cannot because of this bandwidth issue. This disrupts everything, especially for customers who want to order from abroad. It is a problem...most of our customers are from there and so we would like to be on the Internet, but you see, we cannot.*

The study revealed that many SMEs have e-mail addresses; however, a good number of them are still in traditional ways of doing business. As regards the use of the internet which supports electronic commerce,

most SMEs do not use this facility for business purposes, It is universally used for e-mail, which is used as a normal communication medium, and least used for product/suppliers' search/market opportunities. Also, many SMEs hooked up to Internet service providers(ISP) are those of dial-up link compared to other types of connections like leased lines, and wireless connections, this is because is the cheapest method and affordable by most SMEs. This supports the explanation that the internet which supports e-commerce is mainly used for communication purposes as web use would require a higher capacity link than dial-up and a permanent link.

Furthermore, most SMEs have shown that their market target for their product/service is within the region (i.e., Dar es salaam) and within the country (Tanzania) very few indicated that they think of widening the market to overseas countries and the world. It is debatable here whether the slow pace of adoption of electronic commerce is a result of SMEs not considering widening their market reach to the outside world. Management attitude of not budgeting or setting aside very few resources on IT-related issues contribute greatly to SMEs not adopting e-commerce because it is regarded as not an integral part of the business activities.

The data analysis result confirmed that technical challenges such as High cost of equipment and installation, Poor communication infrastructure, unfavorable tariffs by Internet service providers, lack of funds to employ computer experts, other are high electricity tariffs and computer illiteracy of employees. Lack of awareness of the technology on the part of management contributes greatly to the slow adoption of e-commerce by SMEs. Like any other business item, management has to be fully aware of the benefits before fully committing resources to it. This will help to reduce the problem of technophobia. The infancy of the technology, cost-effective electronic commerce-enabled software, lack of simple knowledge to operate, and lack of funds to employ computer experts to train; are technological challenges that limit the adoption of electronic commerce.

Other limiting factors as per the literature review, are legal complications involving parties trading electronically, complications of tax matters, and Cultural issues, these were not given much weight by the respondents partly because the technology is still in infancy in our country and users have not encountered legal battles and complications in tax matters and experiencing cultural hassles.

#### **4. Discussion**

A limited resource was one of the reasons that SMEs had as one of the main obstacles affecting SMEs in adopting E-Commerce; this was agreed by 85% of all respondents from the study. These findings are in line with a study by Ngoasong (2017), which also stated similar results that in developing economies most small businesses fail to adopt E-Commerce due to limited availability of resources. These findings also imply that SMEs need to have adequate resources for them to be able to effectively adopt E-Commerce. Furthermore, the study found out that the cost of acquisition is yet another factor that affects SMEs when it comes to the adoption of E-Commerce. The analysis revealed that 62% of all respondents agreed either strongly or just agreed. These findings relate to the findings in the study conducted by Eddy, (2020) revealing a positive relationship that exists between the E-Commerce acquisition cost and the adoption of e-commerce among SMEs.

Furthermore, the study found out that maintenance of E-Commerce after the adoption is another challenge that most SMEs are facing and hence decide not to adopt it. The analysis further revealed that more than half of the respondents (majority) constituting 66% of all respondents agreed on this, of which 20.0% strongly agreed and 46.0% just agreed. Also, during the study, one of the respondents mentioned: "Most of us fear the post-adoption cost, as you mentioned, the adoption in some cases is very easy but I am afraid this could just be a bait to lure me in, but once I adopt there will be a lot of extra cost for maintenance, which I cannot afford". These findings are similar to the study conducted by Tarofder, Azam,

& Jalal, (2017), which revealed that most SMEs fail to adopt or maintain their E-Commerce adoption due to operational costs. The study mentioned that SMEs need to constantly pay some amount each month, such as internet costs to stay online; this had affected most the businesses and hence these businesses decided not to opt for E-Commerce adoption.

Accessibility to the internet had also been found to be another factor that affects most SMEs from adopting E-Commerce. The analysis discloses that 81% of those who responded also were in line with these findings, and respondents mentioned that in most cases the internet had been particularly challenging to most SMEs. These findings imply that there is a need for the Government and other stakeholders to develop good infrastructure to enhance E-Commerce adoption among small and medium businesses.

## 5. Conclusion

From the study, it could be concluded that high equipment and installation costs, lack of funds to employ computer experts, and lack of awareness of the technology on the part of management are the significant factors that limit the adoption of electronic commerce in SMEs, however, there are some other factors were also part of the cause to challenges encountered by SMEs like poor communication infrastructure which can support mainly e-mail, Unfavorable tariff charged by services providers and communication Infrastructure, Lack of relevant skills and expertise within the companies, absence of enabling infrastructure like internet exchange, credit cards systems or other means of payment schemes and unclear policy framework. The policy framework is seen also as one of the key factors for e-commerce development; therefore, to accelerate the development of e-commerce the government in consultation with various stakeholders must improve the policy environment.

Tax laws that govern the adoption of E-Commerce and the associated activities need to be reviewed regarding the adoption of E-Commerce by SMEs. Most small business operators complained that tax is too high for SMEs in such a way that it affects their quest to adopt E-Commerce. The tax authorities should review taxes from both sides of the E-Commerce perspective. This will be an important milestone because reducing taxes translates into a significant reduction of the burden of operating costs to SMEs, which will result in ease of adoption of E-Commerce by most SMEs since the cost has been a common complaint in almost all discussions with the business operators.

The importance of E-Commerce must never be ignored by SMEs because adopting E-Commerce, increases their competitive advantage. The analysis further reveals that the cost of acquisition and some operational and maintenance costs are among the challenges that hinder these SMEs from adopting E-Commerce. This implies that institutions need to have a special set budget for this, and later will have more profitability. The study further recommends that SMEs need to consider E-Commerce as one of the important aspects of their daily operations.

The Government needs to improve all infrastructures that will enhance the adoption of E-Commerce by SMEs. Currently, the situation is not so good, of the availability of internet, power supply, and other supporting infrastructure. Improving the infrastructure will create a favorable condition that will attract many more SMEs to invest in the adoption of E-Commerce, bearing in mind the advantages of E-Commerce that most SMEs do not know about.

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