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Assessment of Effect on ICT Adoption in Small Medium Enterprises Performance (SMEs): A Case of Tanga District

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Abstract
ICT play a significant role in improvement of Small Medium Enterprise performance in Tanzania as other countries across the global. However the status of ICT use in business limited into the use of mobile phone for business transaction due to limited knowledge on ICT use among SMEs and little is known about effect of ICT adoption in Small Medium Enterprise (SMEs). This study focused on the assessment of effect of ICT adoption in SMEs performance in Tanga, district. The study was guided by Technology Acceptance Model (TAM) developed by Davis in 1989. The study employed quantitative research approach applying a descriptive research design. Total respondents were 100 who included SMEs owners and leaders who were selected through purposive and simple random sampling techniques. Data were gathered through Questionnaires. Statistical Package for Social Sciences (SPSS) 20th version tool coupled with descriptive analysis technique was used in data analysis. The study findings revealed that ICT affect SMEs daily activities positively as it increase access to market, increase productivity and improve sales. On the other hand the study findings revealed that majority 61(61%) of the respondents use mobile phone in advertising their products and few use internet. The study recommends the use of mobile phone for business transaction as majority of the respondents have access on it.
Keywords: ICT use, Effect of ICT, SMEs performance.
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1. Introduction

Information Communication Technology (ICT) is rapidly changing global production, work, business methods, trade and consumption patterns between enterprises and consumers. In the developed countries including Australia and United Kingdom more than half of all business and over half of all Small Medium Enterprises (SMEs) embark into the use of ICT based on the perceived positive impact like organization productivity (Kazi, 2009). However, adoption of information and communications technology in Sub Saharan countries is still lagging behind OECD countries as there is significant heterogeneity on adoption rates across the countries (Cirera et al, 2016). Kenya has the largest adoption rate of computer, software, and Internet usage. The Democratic Republic of Congo and Tanzania experience lower adoption rates (Ibid). Low adoption rate of ICT in Tanzania linked with low knowledge in ICT tools use low level of ICT base in SMEs sector, technical problems of some of ICT tools, high adoption costs and low emphasis of ICT usage from both governmental and non-governmental institutions (Sanga, 2013).

In attempts the government of Tanzania has introduced reforms and strategies to provide support for diverse initiatives aimed at boosting the usage of these tools in various sectors. For example, in 2003 the government approved and implemented an ICT Policy framework which was then subjected to amendments in 2016. The policy stipulates that ICTs are a driving force for the realization of socio-economic growth in all sectors (URT, 2016). Among other things, the National ICT Policy 2016 intends to put in place measures and mechanisms to accelerate broadband penetration and access, strengthen ICT security and standardization, enhance management and efficient utilization of spectrum and other scarce ICT resources, promote business process outsourcing industry and enhance efficiency in e-service and business.

Despite the government's initiatives and reforms to promote the adoption and application of ICTs in all sectors, slow acceptance and implementation of these tools have been registered across the business firms in Tanzania. For example, the usage of software has been found to be insignificant in all types of business firms regardless of their sizes (Mwantimwa, 2019). The study therefore, examines the effect o ICT adoption on SMEs in Tanga, Tanzania. Specifically the study determines the types of ICT tools used and the perceived usefulness of the chosen ICT tools.

The study adopts Technology Acceptance Model (Davis et al., 1989) as it generates a number of variables that used in exemplifying the study variables on the effect of ICT on SMEs performance and the chosen ICT tools to be used in business related matter.

The Technology Acceptance Model Emerging information technology cannot deliver improved organizational effectiveness if it is not accepted and used by potential users. Technology Acceptance Model (TAM) is one of the most successful measurements for computer usage effectively among practitioners and

academics (Davis, 1989). TAM is consistent with (Rogers, 1983) theory on diffusion of innovation where technology adoption is a function of a variety of factors including; relative advantage and ease of use. Two particular beliefs are addressed through TAM; perceived usefulness and perceived ease of use. Perceived usefulness is defined as being the degree to which a person believes that the use of a system will improve his performance.

2. ICT Use

ICT tools such as Tally and quick book in accounting system are commonly used in different countries like Malaysia, Kenya, New Zealand, and Tanzania (Ndekwa, 2015; Tijani and Mohammed, 2013). Also, SMEs use World Wide Web such as Web sites and e-mail to communicate faster and cheaper with both its suppliers and clients (Mwai 2016; Ndekwa, 2015). Mobile phone is another ICT tool that is mostly used in SMEs. Mobile phones offer a quick, efficient and affordable way of communication in SMEs. It includes m-banking, m-payments and mobile money transfer (Kiveu and Ofafa, 2013).

Study by Msuya et al (2018) entitled Assessment of ICT Adoption and Use in Tanzania SMES show that: (i) By year 2014, adoption of ICTs in SMEs had grown from almost nonexistence in year 2004 to 80.1% computer, and over 56.6% for Internet technologies; (ii) More than 53% of the SMEs were using ICTs as a strategic communication and marketing tool; (iii) 47% of the SMEs were competitive due to use of ICTs.

2.1 Effect of ICT adoption on SMEs performance

Ollo-Lopez and Aramendia-Muneta, (2012) argued that, ICT adoption resulted into positive effect on organization productivity and has great potential to support a sustainable development. The use of e-mail, e-commerce, and social media network for example has significantly cut down on the physical transportation involved in sending mail, banking, advertising and buying goods. Studies by Manochahri and Ashraff, (2012) revealed that investments in ICT had a considerable effect on the productivity of the labor force and on economic growth. that investments in ICT had a considerable effect on the productivity of the labor force and on economic growth. (Manochehri, Al-Esmail & Ashrafi, 2012, Sabbagh, Friedrich, El-Darwiche, Singh & Ganediwalla, 2012 that investments in ICT had a considerable effect on the productivity of the labor force and on economic growth. (Manochehri, Al-Esmail & Ashrafi, 2012, Sabbagh, Friedrich, El-Darwiche, Singh & Ganediwalla, 2012

Study by Alshubiri, et al (2019), on the impact of ICT on financial development: Empirical evidence from the Gulf Cooperation Council countries indicated that an increase in fixed broadband has a statistically significant and positive effect on both proxies of financial development. In terms of domestic credit, percentage of the GDP proxy, the positive effects of ICT (broadband) are greater than the one from Internet users. A 1% increase in fixed broadband leads to approximately 2% increase in financial development, but the Internet user variable resulted in about a 0.09% increase.

Study by Mwantimwa, (2019), on ICT usage to enhance firms' business processes in Tanzania shows that the nature of firm ownership does not guarantee maximum exploitation of ICTs to enhance business processes, hence the need to avoid underestimating other determinants such as knowledge investments, regulatory frameworks, and ICT acceptance and motivation to use them.

Apparently, there is limited comprehensive study that has been specifically done regarding the effect of ICT adoption in SMEs in Tanga, Tanzania as other studies like that of Mwantimwa (2019), Msuya (2016) focused on the effect of ICT adoption in Manufacturing firms and neglect SMEs. This study therefore fills the emerging research gap by assessing the impact of ICT adoption in SMEs performance in Tanga Urban.

2.2 Materials and Methods: The study employ descriptive design coupled with quantitative approach in data collection and analysis. Descriptive study designed used to obtain relevant and precise information concerning the effect of ICT adoption and the types of ICT tools used on SMEs performance. The choice of the design based on the research objectives and the fact that data and information was obtained using the method without changing the environment (Deyrup, 2013).

3. Population of the Study

Population in which the study sample obtained consists of all SMEs owners from four marketing center of Mgandini, Ngamiani, Uzunguni and Mkwabi supermarket in Tanga Urban district. The four market centers were selected purposely as it allows the researcher to obtain respondents within material time and provide reliable information pertaining to effect of ICT adoption on SMEs performance.

3.1 Procedures

Procedures used in obtaining the sampled population. In this study simple random sampling procedures were used to obtain the total of 100 SMEs owners from four marketing centers. Purposive sampling was used to select

the study area.

3.2 Data collection
The study makes the use of questionnaire in collecting quantitative data. Questionnaire was self administered to a total of 100 SMEs owners of four marketing center where the study was conducted.

3.3 Data analysis
Quantitative data were analyzed using Statistical Products for Service Solutions (SPSS, 22nd Version) to generate descriptive results. Descriptive statistics such as frequency and percentage was successful employed.

4. Results and discussion
4.1 Types of ICT tools used in performance of SMEs
The researcher was interested to know the types of ICT tools used in performance of SMEs. Respondents were asked to indicate the types of ICT tools mostly used in performance of their daily basis activities. The responses presented into three categories of: mobile phone, internet and computer.

Table 1 Types of ICT tools mostly used in performance of SMEs

Variable	Frequency	Percentage
Mobile phone	61	61
Internet	16	16
Computer	23	23
Total	100	100

Source: Field data, 2021

Table 1 above presents the findings about the types of ICT tools used mostly in performance of SMEs. The results shows that majority 61 (61%) of the respondents use mobile phone, 23 (23%) use computer and few 16 (16%) of the respondents use internet to ran their business. This signifies that mobile phone is mostly preferred because the technology spread in wider area and provide customer with business transaction service with minimum cost through the use of Tigo pesa, Airtel Money and M-Pesa. Equally study by Njau and Njuga (2015) on mobile phone usage and its impact on micro enterprise performance in Tanzania revealed that mobile phone services contribute positively to micro enterprises business performance. 87% of the respondents used mobile phones services mainly for business purposes. Furthermore, findings revealed that the more the use of mobile phone services by micro entrepreneurs the more the business successes. However, for wholesaler may opt to the use of other types of ICT tool like internet and computer to improve communication with their customer in a distant place.

4.2 Level in which SMEs owners satisfied with the use of the chosen ICT tools
The respondents were requested to indicate the level of satisfaction with the use of ICT tools chosen to run their business. The responses presented in three levels as shown in table 2 below.

Table 2 Level of satisfaction with the use of the chosen ICT tool

Variable	Frequency	Percentage
Highly satisfied	42	42
Satisfied	44	44
Undecided	14	14
Total	100	100

Source: Field data, 2021

Table 2 presents the findings about the level of satisfaction with the use of ICT tool chosen in performance of SMEs. The results showed that many 44 (44%) of the respondents were satisfied with the chosen ICT tools, 42 (42%) were highly satisfied. However, few 14 (14%) of the respondents were undecided. This attributed by the accessibility and perceived usefulness of the chosen ICT tool like mobile phone, computer and internet. Kate (2018) on his study entitled Mobile phone usage and it impact revealed that the usage of mobile phones in business has a significant effect on sales of Micro and Small Enterprises in Kenya.

4.4 Ways in which mobile phone used in performance of SMEs
The researcher also investigated the ways in which mobile phone used in performance of SMEs. The respondents were asked to state clearly the way in which mobile phone used. The study findings showed that many 49 (39.8%) of the respondents use mobile phone in calling, 45 (36.6%) for ordering products and 29 (23.6%) use mobile phone for advertising product (Table 3). This signifies that almost all respondents use mobile phone for the sake of improving productivity and increase efficiency and extending market of their product.

Table 3 Ways in which mobile phone used in SMEs performance

Variable	Frequency	Percentage
Calling	49	39.8
Ordering product	45	36.6
Advertising	29	23.6
Total	123	100

Source: Field data, 2021

4.1 Effect of ICT adoption on performance of SMEs

In examining cumulative effect of ICT adoption on performance of SMEs, the respondents were asked whether the adoption of ICT had any effect on SMEs performance or not. Their responses categorized into yes or no.

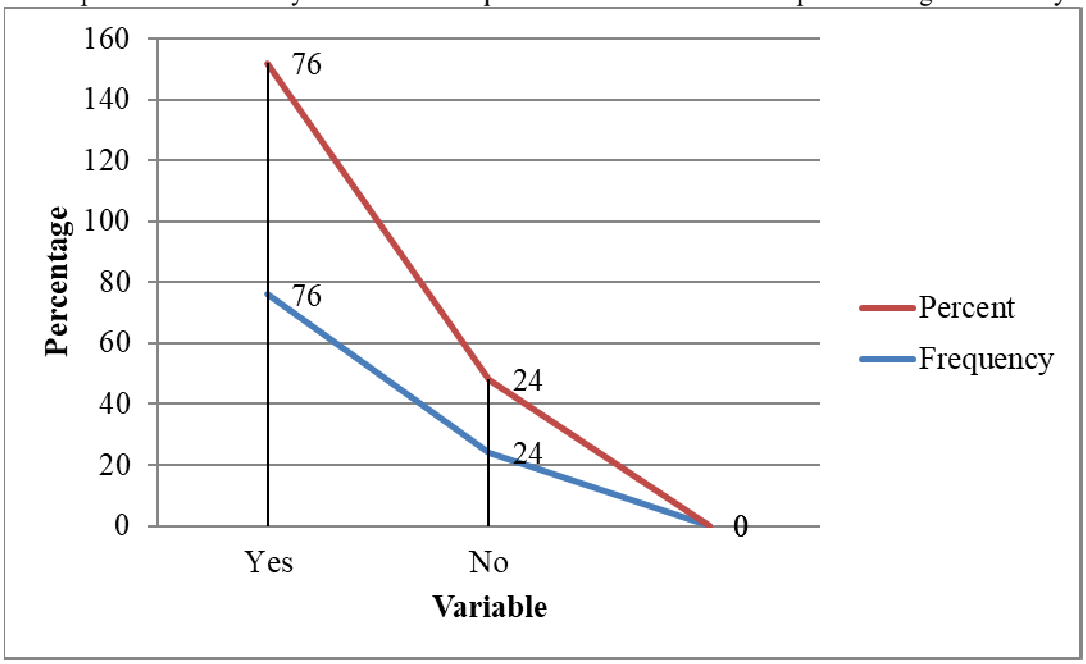

Figure 1: Respondents responses on the effect of ICT adoption

Source: Field data, 2021

The results from Figure 1 above showed that majority 76 (76%) of the respondents commented that ICT had positive impact on SMEs performance. However, few 24 (24%) of the respondents commented that ICT had no any effect on SMEs performance. The effect of ICT adoption in SMEs performance include: Increase market share and profit, increased in sales, online marketing increase productivity, customer satisfaction, enhance access to market, promote flexibility of SMEs and useful in advertising and buying goods as rated in five likert scale.

Table 4. Adoption of ICT helps to increase market share and profit

Variable	Frequency	Percentage
Agree	58	58
Strongly agree	22	22
Disagree	15	15
Strongly disagree	2	2
Not sure	3	3
Total	100	100

Source: Field data, 2021

Table 4 present finding on the effect of ICT adoption on SMEs performance. The results revealed that many 58 (58%) of the respondent agreed that adoption of ICT help to increase market share and profit, 22 (22%) strongly agreed, 15 (15%) of the respondents disagree, 2 (2%) strongly disagree with the assertion, 3 (3%) were neither agree nor disagree. The findings signifies that majority 80 (80%) of the respondents agreed that with the use of ICT contribute positively to the performance of SMEs.

Table 5 ICT adoption help increase sale

Variable	Frequency	Percentage
Agree	43	43
Strongly agree	31	31
Disagree	15	15
Strongly disagree	9	9
Not sure	2	2
Total	100	100

Source: Field data, 2021

The findings from Table 5 indicated that many 43 (43%) of the respondents agreed that the use of ICT increased in sales, 31 (31%) strongly agreed, 15 (15%) of the respondents disagree with the assertion, 9 (9%) of the respondents strongly disagreed and few 2 (2%) were not sure. It is clearly noticed that majority 74 (74%) of the respondents were in agreement that with the use of ICT in their business contributed positively to an increase in sale as they are able to advertise their product through internet and use ICT tools like mobile phone in strengthening communication with their customers.

Table 6 ICT adoptions helps to increase online marketing products

Variable	Frequency	Percentage
Agree	27	27
Strongly agree	40	40
Disagree	18	18
Strongly disagree	12	12
Not sure	3	3
Total	100	100

Source: Field data, 2021

Data from Table 6 above indicated most 40 (40%) of the respondents strongly agreed that with the use of ICT contributed to an increase online marketing products. 27 (27%) agreed with the statement, 18 (18%) disagreed, 12 (12%) of the respondents strongly disagree and few 3 (3%) were neither agree nor disagree.

Table 7 ICT help to increase customer satisfaction

Variable	Frequency	Percentage
Agree	21	21
Strongly agree	30	30
Disagree	25	25
Strongly disagree	15	15
Not sure	9	9
Total	100	100

Source: Field data, 2021

The result further showed that 30 (30%) of the respondents were strongly in agreement that ICT help to increase customer satisfaction, 25 (25%) disagreed, 21 (21%) of the respondents agreed. 15 (15%) of the respondents strongly disagreed with the statement while 9 (9%) were neither agree nor disagree (Table 7). It is clearly noticed that many 51 (51%) of the respondents strongly agreed that the use of ICT had great impact business as it contributed positively to the improvement of SMEs firms productivity.

Table 8 ICT enhance access to markets

Variable	Frequency	Percentage
Agree	27	27
Strongly agree	20	20
Disagree	15	15
Strongly disagree	22	22
Not sure	16	16
Total	100	100

Source: Field data, 2021

The study findings showed that 27 (27%) agreed with the statement that ICT enhance access to markets in making customer place order, 22(22%) strongly disagreed, 20 (20%) of the respondents strongly agreed with the statement, 16 (16%) were neither agree nor disagree, 15(15%) were in disagreement with the assertion (Table 8).

Table 9. ICT help to promote flexibility of SMEs

Variable	Frequency	Percentage
Agree	20	20
Strongly agree	13	13
Disagree	27	27
Strongly disagree	32	32
Not sure	8	8
Total	100	100

Source: Field data, 2021

The findings from Table 9 above indicated that 32 (32%) of the respondents strongly disagree that ICT adoption cannot promote flexibility of SMEs, 27 (27%) disagree with the assertion, 20 (20%) agreed, 13 (13%) of the respondents strongly agree. Few 8 (8%) were neither agree nor disagree. It signifies that many 57 (57%) of the respondents strongly disagreed with the assertion. This is attributed by training and weak management support.

Table 10 ICT useful in advertising and buying goods

Variable	Frequency	Percentage
Agree	25	25
Strongly agree	43	43
Disagree	14	14
Strongly disagree	7	7
Not sure	11	11
Total	100	100

Source: Field data, 2021

The findings from Table 10 above indicated that 43 (43%) of the respondents strongly agreed that ICT is useful in advertising and buying goods, 25 (25%) agreed with the assertion, 14 (14%) disagree, 11 (11%) were not sure while 7 (7%) were strongly disagree. This implies majority 68 (68%) of the respondents acknowledge that with the use of ICT they are able to advertise their product and buying goods through the use of internet and mobile phones.

4.5 Perceived usefulness of internet in SMEs performance

In examining the status of ICT use in SMEs performance the researcher was also interested to know the way in which respondents perceive the use of internet in facilitating business.

Table 11 Perceived usefulness of internet in SMEs performance

Variable	Frequency	Percentage
Facilitate online marketing	16	14
Facilitate marketing research	36	31
Communication purpose	40	35
Extending networking in customer services	23	20
Total	115	100

Source: Field data, 2021

The study findings revealed various usefulness of internet in performance of SMEs. 40 (35%) of the respondents use internet for communication purpose, 36 (31%) argued on facilitation of marketing research, 23 (20%) believe on extending networking in customer services and 16 (14%) reported on online marketing (Table 11).

4.6 Discussion of the Findings

The study findings indicate that ICT adoption had numerous effects on performance of SMEs. Among the effect raised were: Increase of market share and profit, increase sales, increase online marketing product, and advertising and buying goods. It is clearly revealed that many respondents were in agreement that adoption of ICT contributes to an increase of market share and profit by opening the business to many customers and suppliers. This is attributed by the use of mobile phone and internet in communication and ordering products. Similarly study by Nyangarika and Zacharia (2020) on Role of ICT usage in marketing Accessibility of SMEs in Tanzania revealed that, 62.5% of the respondents agreed that ICT widens marketing coverage

The study further revealed that ICT help to increase sales. This is linked to the wide use Tigo pesa, M-pesa and Airtel money to reduce transaction costs and increasing the speed and reliability of transaction. On the other hand few respondents strongly disagreed that ICT use does not contribute to an increase of sales. This is because most of them were reluctant to accept technology in their business. Contrary to this almost all respondents agreed that adoption of ICT contributed to an increase in customer satisfaction. The finding is in line with

Masenge (2014) who argued that to a great extent use of information and communication technology has led to better quality of goods and services of business by customer satisfaction as expressed by a mean score of 3.734.

The study findings observed that adoption of ICT enhance access to market. This is attributed to the wide use of mobile phone and internet to advertise their product. In doing so SMEs owners are able to improve their business productivity more efficient. Fernando (2007) argued that the use of ICT can improve business competitiveness with internet providing numerous opportunities for SMEs to compete equally with large corporations.

The study findings further revealed that majority of the respondents were satisfied with the chosen ICT tool (Mobile phone) as it is useful to communicate with their customer, ordering product and advertising their product. This is because most of the respondents had smart phone which is more efficient and effective in advertising their product in a distant manner. The use of mobile phone associated with the perceived usefulness like communication purpose. The findings correlate to Technological Acceptance Model single out that acceptance of any kind of technology influenced by the two premises of perceived ease and perceived usefulness. On the other hand the use of internet linked to the extension of marketing in customer services, facilitating online marketing as well as marketing research, though this is adopted by few respondents with skills and access to internet services. Similarly, the study by BMG et al (2015) on Digital Capabilities in SMEs: Evidence Review and Re-survey of 2014 Small Business Survey, Durhan University find out that, 67% of SMEs use smart phones.

5. Conclusion

Performance of SMEs is largely affected by ICT adoption as majority of the respondents agreed that positively ICT enhance market share and profit as there would be competition in running business, increase online marketing product, increase customer satisfaction as well as enhance access to market. These and other contribution linked to the wide acceptance and use of mobile phone to simplify business transaction and requesting product from customers as it demand little knowledge to use compare to other ICT software that demand skilled personnel.

The study recommends further studies to be done on the area of effectiveness of ICT adoption on SMEs performance and examine perception of SMEs owner on the use of ICT.

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