

Ethiopia: The case of Bahrdar and Gondar cities

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Abstract: The small and medium scale enterprises (SMEs) have been credited with huge contribution to the growth of the developed economies of the world. In the same element, the Information Communication Technology (ICT) has played their own part in those economies.

The main intention of the study was to assess the impact of ICT usage in SME in Ethiopia in the case of BahirDar and Gondar cities. The research look into deep understanding of impact of ICT on the performance of SMEs operation in Ethiopia, moreover this paper attempts to discover the degree to which the enhancement in SMEs operation performance can be practiced to the implementation of ICT. The study was carried out using purposive sampling technique from the two cities, 44 SME respondents were selected from a list of registered small and medium enterprises obtained from Amhara region at the end of March 2015. The researcher were used document analyses, questioner interview and observation. Data collected were coded and analyzed using frequency table and percentage using STATA 16 data analysis package.

The result of the study showed that usage of ICT by SME significantly improve the performance of SME business in term of productivity, time saving, business turnover, and operation expenses reduction and also increase level of the country economy as whole. However the study also find out that while there is an opportunity to use ICT by SME there are challenges of high cost of telecommunications, lack of governmental support from the state, the use of outdated technologies, the overall technological illiteracy, lack of qualified staff, poor communication infrastructure to adopt and to use ICT. Lastly, this study revealed that undersized figure of respondents agreed that ICT structure is complex and not easy to use for SMEs operation in Ethiopia. To this end, it is recommended that there should be ease of use of free professional advice and consulting on ICT at reasonable cost to SMEs, there is need for further research in the area of the impact of ICT on not just SMEs but business enterprises in general to develop in depth the strategic framework of ICT on the development of sustainable SMEs in Ethiopia.

Keywords: Small enterprise, medium enterprise, ICT, mobile phone



1 Introduction and Background of the study

Information and communication technologies (ICT) have tremendous potential to enhance the lives of people in general and, particularly, those in developing countries. Use of ICT can boost business, support education and healthcare systems and also enhance all levels of government in their development processes worldwide. Currently, it is difficult to imagine our lives without computers. They exist in cars, phones, aircrafts, banks, schools, etc. Technology-mediated applications are increasingly popular and have become part of our daily lives (Kuyoro 'Shade O, July 2013). Information and communication have always opened opportunities for the poor to earn income, reduce isolation, and respond resiliently to disasters, conflicts, and emergencies. With mobile phone use exploding across the developing world, even marginalized communities is benefiting from modern communication tools. Some of the world's poorest people now spend substantial portions of their income to make a mobile phone call or go online.

Advances in information and communication technology (ICT) over the last decade have brought dramatic improvements and unprecedented opportunities for Africa's participation in the global

networked economy. The impact of new ICTs has permeated virtually all sectors of society and it is of paramount importance that African countries embrace a common vision and strategy for an information-based society that not only recognizes ICT as a tool for economic innovation but also as a platform for socio-economic development. Access to information and knowledge is a prerequisite to reducing poverty and achieving basic healthcare and education, all part of achieving Millennium Development Goals (MDGs). (Laurent elder, Rohan samarajiva,2013).

Information and communication technology (ICT) connectivity (PCs and Internet) is very widespread in businesses of all sizes. As is the case with all technologies, small businesses are slower than large ones to adopt new ICTs. Potential small business benefits and firm and sector-specific strategies drive the adoption and use of ICTs. Furthermore, sectors are increasingly global and dominated by large firms and the structure of their values chains and operations shape opportunities for small and medium size enterprises (SMEs). SMEs also face generic barriers to adoption including trust and transaction security and IPR (Intellectual Property Rights) concerns, and challenges in areas of management skills, technological capabilities, productivity and competitiveness. The issues for governments are to foster appropriate business environments for e-business and ICT uptake (e.g. to diffuse broadband, enhance competition), and target programs to overcome market failures to the extent that they are needed in particular areas (e.g. skill formation, specialized information). Governments have a range of SME e-business and Internet use programs. However commercial considerations and potential returns are the principal drivers of small business adoption and profitable use. (OECD, June 2004).

2 Related work

2.1 ICT and Poverty Reduction

ICTs are fundamental to the improvement of all aspects of developing economies and their entry into the global marketplace and are critical components of poverty alleviation strategies. While ICTs are not a panacea for all development problems, they offer enormous opportunities to narrow social and economic inequalities and thus help achieve broader development goals, such as those set by the United Nations' Millennium Development Goals (MDGs). ICTs can spur growth, create jobs opportunities for the poor, improve market access, contribute to income generation and enhance rural productivity. Through ICT's, enterprises are able to capture economic opportunities, increase process efficiency, expanded economic networks, and creating opportunities for employment. (ECA and NEPAD, 7-8 April, 2008, Tokyo, Japan)

2.2 ICT solution to Small and Medium Scale Enterprises (SMEs) in Nigeria

Information and Communication Technology (ICT) is one of the main forces driving the present day business environment. ICT is dramatically informing business practices as well as the outcome of business engagements. The adoption of ICT in Nigerian SMEs is relatively low; hence there are still many factors that need to be considered. In order to have a better understanding of the benefits associated with ICT adoption in developing countries there will be a need for extensive research and meeting with the small business owners in Nigeria to find out how they have been carrying out their business, the level of ICT solution they have adopted so far and how to further improve business growth and sustainability for SMEs in different sectors. The development of the ICT solution taking into account the peculiarities of developing countries, additional research in order to examine the existing problems, the peculiarities of micro and macro environment and other strategies will help to boost the SMEs of

developing countries thereby enhancing the sustainable economic growth. In order to have a better understanding of the benefits associated with ICT adoption in developing countries there will be a need for extensive research and meeting with the small business owners in Nigeria to find out how they have been carrying out their business, the level of ICT solution they have adopted so far and how to further improve business growth and sustainability for SMEs in different sectors. The development of the ICT solution taking into account the peculiarities of developing countries, additional research in order to examine the existing problems, the peculiarities of micro and macro environment and other strategies will help to boost the SMEs of developing countries thereby enhancing the sustainable economic growth. (Kuyoro 'Shade O, July 2013)

2.3 Access and use of ICT and its contribution to poverty reduction in Kenya

According to (Timothy M. Waema, Obadia Okinda Miroro)" research conclusions: ICTs play a very critical role in poverty reduction in both urban and rural areas in Kenya. All people, including those from households classified as poor, access and use ICTs, although the extent of use varies. For example, while ownership of radio and television was higher in non-poor households, there was no variation in use of public phone and internet among individuals from these households. This is evidence of the willingness and ability to use ICTs, which might be interpreted to mean that they find ICTs useful in their day-to-day socio-economic and political livelihood strategies. It also means that ICTs are no longer the preserve of a certain social or economic group.

Despite this, disparities in access and use of ICTs remain prevalent between the poor and non-poor, whereby the poor are worse off in terms of access and use of most ICTs.

Although there has been a lot of investment to promote 'modern ICTs' like internet and mobile phones, use of the 'traditional ICTs', like radio and television, remains widespread. This implies that in terms of ICTs and poverty reduction, appropriateness of an ICT in terms of the people's context is crucial, although it is also evident that people combine different forms of ICTs. It is not simply about traditional or modern ICTs, but the appropriateness in terms of what they mean to people, which influences which ICT or combination of ICTs they use. This is probably the reason that although internet has been touted to contribute to people's lives, in the areas covered, it did not feature as contributing to people's lives. This is unlike mobile phones, which have evolved and become pervasive as evident in their diverse uses.

Mobile phones are no longer simply a tool for voice calls or text messages, but are increasingly being used as a sort of bank to deposit cash, a security gadget, a tool for mobilizing group members, and so on. With the decrease in the price of smart phones, it is likely that mobile phones have become essential in people's day-to-day social, economic, and political lives. This offers application developers an opportunity to come up with applications relevant to people's socio-economic and political needs.

Poverty reduction is multidimensional, and ICTs contribute to poverty reduction in terms of enhancing people's ability to undertake activities important in improving their lives and by these activities actually leading to improvement of their lives. Specifically, use of ICTs contributed to improvement of people's lives through enhanced human capital in terms of valuable knowledge and skills, increase in income, reduction in vulnerability, and having a voice in how they are governed."

3 Statement of the problem

There is an increasing awareness of the importance of small, medium enterprises (SMEs) for socio-economic growth in the developing economies (Duncombe and Heeks, 2005; URT, 2003; Bothelho and da Silva Alves, 2007; Kotelnikov, 2007; Ilavarasan and Levy, 2010). For instance, Duncombe and Heeks (2005) argue that SMEs have the potential to contribute most directly to poverty reduction in three main ways: 1) income generation and diversified livelihood opportunities; 2) more secure employment opportunities for the poor of developing countries; 3) provision of other social benefits to the poor – for example, enhancement of skills, increased self-confidence, increased participation of women, empowerment, and security against income loss. With the explosive growth of ICTs, especially of mobile telephony, in the last two decades in all regions of the world, there is a corresponding increasing interest in the role of information and communication technology (ICTs) in enhancing the potential of SMEs.

The literature on this discussion can be divided into two main categories: 1) the use of ICTs by SMEs and the benefits and constraints experienced in its use; and 2) the link of such use with growth in the business and corresponding poverty reduction in the households of the SME users of the ICTs. A number of studies have been carried out on the use of ICTs by SMEs Heeks (2002) and Kotelnikov (2007) for Asia Pacific; Botelho, RIA and da Silva Alves (2007) for Latin America; Nielinger (2003) and Souter et al. (2005) for India, Mozambique, and Tanzania; Molony (2005) for Tanzania; Munyua (2009) for Kenya; and Lal (2002) for India, to give just a few examples. These studies found that telephony, especially mobile phones, is particularly popular among these enterprises and can have positive results. For instance, Heeks (2002) argues that information technology has the potential to be an enabler of organizational changes among SMEs that can lead to additional productivity gains. A study of women entrepreneurs in Nairobi found that the use of mobile phones had indeed enhanced the effectiveness and efficiency of female-owned businesses (Munyua, 2009).

However, there is no prior studies undertaken in Ethiopia and the role of ICTs in growth and poverty reduction among SMEs is not clear. Kotelnikov (2007), focusing on Southeast Asia, found that while ICT can benefit small and medium enterprises (SMEs) in multiple ways, SMEs have been slow to adopt ICT as they face major constraints. A growing area of concern in some of the literature is the de-linking of the use of ICTs by small and medium enterprises with growth and poverty reduction (Flor, 2001; McNamara, 2003, Arunachalam, 2004; Chaco and Harris, 2007), particularly the wider definition of poverty which goes beyond absence of money and encompasses aspects such as vulnerability, exclusion, gender discrimination, lack of equitable access to essential assets, and opportunities. As Mathison (2003) states, impact analysis is crucial. Unless an initiative can demonstrate positive impact, there is little point in allocating resources to expand or replicate it. However, there were no prior studies that have used rigorous methods to assess the impact of ICT in SME in Ethiopia: the case of Bahrdar and Gondar.

The conclusion from this brief review of the literature is that while there are opportunities for ICTs to enhance small and medium enterprises and improve livelihoods, there are still gaps in understanding, adoption, usage and impacts of ICT on SMEs in Ethiopia which can contribute to the sustainable development of the enterprises as well as economic performance of the owners of these enterprises.

It is against this background that this study proposed to assess the impact of ICT usage on small and medium enterprises of Ethiopia with particular reference to two urban cities of Amhara region Gondar and Bahrdar.

3.1 Objectives of the study

The study has the following general and specific objectives

3.2 General objective

The main objective of this research was to assess the impact of ICTs usage on small and medium enterprises of Ethiopia with particular reference to two urban cities of Amhara region Gondar and Bahrdar.

3.3 Specific objectives

- To identify small and medium enterprises
- To list out users of Information and Communication Technologies
- To investigate the awareness of Information and Communication Technologies on small and medium enterprises owners
- To find out the relationship between Information Technology and economic performance of small and medium enterprises
- To give recommendation for small and medium enterprises, further researchers and policy makers at large

3.4 Scope of the study

This study was carried out in two selected cities of Amhara region, Bahrdar and Gondar. The study had focused on the impact of ICT on small and medium enterprise and their business operations.

3.5 Limitation of the study

In view of the fact that the study area was focused on two particular urban cities the result may not be convinced to generalize the whole region and the country in general. Moreover, the researcher couldn't get prior studies in relation with the small and medium enterprise and Information Communication and Technologies.

3.6 Material and Methods (methodology)

3.6.1 Method of sampling

The study made use of cross-sectional survey design. The study area was Bahrdar and Gondar, Ethiopia. Using multi-stage probability sampling technique, a sample of 44 SMEs were selected from a list of registered SMEs in Bahir Dar and Gondar at the end of March 2015 all which constitute the study population of the research. The sample of small and medium scale enterprises were drawn through the purposive sampling procedure. The selected enterprises consist of manufacturing, printing business, hotel and restaurants and service deliverable enterprises, with relation to their employment capacity and total assets. This was done in such a way that two of the cities were represented with each having twenty (22) SMEs each. No random sampling procedure was used, but the SME were selected based on their profile that the researcher collected from the office of SME organizations found in two cities. Forty four (44) questionnaires were administered and distributed to the members of small and medium scale enterprises across the two cities. All of the questionnaires were found useful for the purpose of the study representing 44(100%) of the total questionnaire distributed.

3.6.2 Method of data collection

The researchers used document analysis, questioner, observation and interview to collect data from the participants of the study. The researchers used experts of SME organization because gathering financial information from SMEs were not an easy task. It required experts to build up trust with the enterprises and an understanding of how businesses operate that is why the researchers prefer to use experts. Several control questions were built into the survey to check for consistency of responses while the interviews were conducted. This allowed experts to find out wrong or inaccurate information. Reasons that led enterprises to provide inaccurate information other than fear of higher taxation or competition was the absence of record keeping. The experts were trained to assist SMEs without financial records to estimate the values of taxed assets and other financial figures.

The major mechanism used in the collection of data for this research work is questionnaire and interviews. The questionnaire consists of questions that are related to Information Communication Technology structure and SMEs operation as identified in the literature. Liker five point scales ranging from 1-5 (5=strongly agree & 1=strongly disagree) were used as a basis of the questions.

3.6.3 Method of analysis

The researcher used an expert analysis that was supported by statistical software's. Descriptive statistics were used to describe and summarize the properties of the mass of data collected from the respondents. The data collected was analyzed using frequency table, percentage using STATA 16 data analysis package/software.

3.6.4 Method of presenting the outcome

Findings of this research have a contribution towards the current discussion on the impact of ICT usages on small, medium enterprises (MSEs) and draw conclusions for the general debate on the impact of ICTs on poverty reduction in Ethiopia.

4 Result of the study

As we see from Table 1: the research is concerned 20 (45.5%) of them are small enterprises and 24 (54.5%) are medium enterprises. This is categorized by their capital and employee numbers.

Table 1: Type of the Business involved in this research

Enterprise type	Frequency	Percent
Small	20	45.5%
Medium	24	54.5%
Total	44	100%

Table 2: shows that the type of business involved on the research are manufacturing 6 (13.6%), hotel and restaurants 11 (25%), printing business 2 (4.5%), services deliverables and others 7 (15.9%). The study showed that most of the respondents 41 (93.2%) are used Computer, Internet, Mobile phone and cash register, while minor respondents 3 (6.8%) are used mobile only. Additionally 36 (81.8%) enterprise are used ICT for exchanging of information, making business report, calculating business transaction and for entertainment, while 8 (18.2%) of the respondents were used ICT for exchanging of information only.

Table 2: ICT Usage and business category

		frequency	percent
If you are an ICT user for what purpose you use it?	To exchange information	8	118.2
	all	36	81.8
	total	44	100.0
Have you ever used ICT? And if yes which of them?	mobile	3	6.8
	all	41	93.2
	total	44	100.0
What is your type of business category?	manufacturing	6	13.6
	hotel and restaurant	11	25.0
	printing business	2	4.5
	services	7	15.9
	another	18	40.9
	total	44	100.0

As we indicate from table 3 the study has revealed that the vast majority of the respondents, that is about 88.6% of the total respondents agreed, while 11% respondents were undecided to the Information Communication Technology structure improve the performance of SME operation in Ethiopia, more over 99.9% of the respondents agreed that great understanding Information Communication Technology can serve as a key determinant of sustainable economic development. This shows that good structure of ICT and great understanding of ICT serve as a key determinant of sustainable economic development in Ethiopia.

Table 3: Information Technology Impact on SMEs enterprises

		frequency	percent
ICT structure improve the performance of SMEs operation in Ethiopia	undecided	5	11.4
	agree	17	38.6
	strongly agree	22	50.0
	total	44	100.0
Great understanding of ICT serve as a key determinant of sustainable economic development	agree	18	40.9
	strongly agree	26	59.1
	total	44	100.0

Table 4 of the study shows that 23 (52.3%) of the total respondents were strongly agreed and 21 (47.7%) of the respondents where agreed on ICT exposure will improve the performance of SMEs in Ethiopia. 15 (34.1%) were strongly agreed and 29 (65.9%) of the respondents were agreed on, ICT have the capacity of developing the economy in a positive manner. Moreover 1 (2.3%) strongly disagreed, 9 (20.5%) were agreed, 32 (72.7%) were agreed and 2(4.5%) were strongly agreed on the achievement of poverty eradication in Ethiopia will be influenced positively with ICT exposure of SMEs. This showed that majority of the respondents are agreed on ICT have a positive effect on economic performance of small and medium enterprises.

Table 4: ICT have an effect on Economic performance

		frequency	percent
ICT exposure will improve the performance of SMEs in Ethiopia	agree	21	38.6
	strongly agree	23	50.0
	total	44	100.0
ICT have the capacity of developing the economy in a positive manner	agree	29	40.9
	strongly agree	15	59.1
	total	44	100.0
Achievement of poverty eradication in Ethiopia will be influenced positively with ICT	undecided	9	20.5
	strongly disagree	1	2.3
	agree	32	72.7
	strongly agree	2	4.5
	total	44	100.0

Table 5 of the research has shown that a large number of respondents 37 (84.1%) of the respondents disagreed that Information Communication Technology does not positively impact on the performance of small and medium enterprises, while 7 (15.9%) of them are undecided.

Moreover, the study has confirmed that a majority of respondents 44 (100%) of the respondents disagreed that ICT does not helps entrepreneurs in attaining personal satisfaction in business operation. Hence this shows that a majority of respondents believed that Information Communication Technology will facilitate improvement to small and medium business operation and serve as a poverty reduction mechanism to the nation as a whole. Furthermore, the study revealed that a great number of respondents 30 (68.2%) of the respondents) disagreed that ICT is complex and not easy to use for SMEs operation in Ethiopia while 14 (31.8%) of them are agreed.

Table 5: ICT and SME

		frequency	percent
ICT does not positively impact on the performance of SMEs operation in Ethiopia	undecided	7	15.9
	strongly disagree	10	22.7
	disagree	27	61.4
	total	44	100.0
ICT does not helps entrepreneurs in attaining personal satisfaction in business operation	strongly disagree	23	52.3
	disagree	21	47.7
	total	44	100.0
ICT is complex and not easy to use for SMEs operation in Ethiopia	strongly disagree	10	22.7
	disagree	20	45.5
	agree	11	25.0
	strongly agree	3	6.8
	total	44	100.0

Table 6 of the study revealed that all of the respondents which is 44 (100%) of the respondents answered that high cost of telecommunications, lack of legislative support from the state, the use of obsolete

technologies, The overall technological illiteracy, lack of qualified staff, poor communication infrastructure are challenges when they use ICT for your their businesses.

Table 6: Do you have challenges when you use ICT for your business?

	frequency	percent
all	44	100.0

5 Conclusion

Findings from the study showed clearly that ICT plays an important role in the increase of productivity and economic activities. Generally small and medium enterprises enter into business to make profit and ICT help in increasing productivity but also quality and make the way business operate less complicated, time saving, and disclose the new trends of business and how business are supposed to address such change. The study concludes that Information Communication Technology positively impact on the performance of SMEs operation in Ethiopia, in a different way the study showed that even if ICT-Solutions help SMEs to increase their productivity and achieve higher business performance the percentage of ICT implementation by SMEs in the proper use and efficiency is very low. This can be explained due to the fact that SMEs are faced challenges like high cost of telecommunications, the use of obsolete technologies, the overall technological illiteracy, lack of qualified staff, and poor communication infrastructure for ICT usage by SME in Ethiopia.

6 Recommendations

In view of the above conclusion the following recommendations were made by the researcher:

- There should be ease of use of free professional advice and consulting on ICT at reasonable cost to SMEs.
- Since ICT can bring unbeaten potential to deliver information, to save time, to exchange experiences from another SME, to provide links to markets locally and internationally and much more, there should be policy to put together SME and ICT.
- SMEs are the main driver for a country's economic growth, proper use of ICT is mandatory in order to experience and compute themselves with international SMEs.
- The paper recommends that more research be carried out to develop in depth the strategic framework of Information communication Technology on the development of sustainable SMEs in Ethiopia.
- This paper recommends that there is also the need for further research in the area of the impact of ICT on not just SMEs but business enterprises in general. Such efforts might assist policy makers in both government and commerce to plan more positively for the general good of the society.

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