

The Significance of Information and Communication Technology for SMEs in Rural Communities

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Abstract

This research examines the significance of information communication technology (ICT) to the growth of Small and Medium Scale Enterprises (SMEs) in rural Ghana using a study of some selected SMEs in the Bawku Municipality in the Upper East region of Ghana. One hundred SMEs were sampled using simple random sampling of small businesses operating in the rural areas within the Bawku municipality. The study found out that ICT has contributed to the growth of SMEs by decreasing cost of communication and transaction, and enhancing better relations with customers and suppliers. Though ICT awareness of the benefits of ICT to SMEs is high among SME owners in the Bawku Municipality, its patronage and usage is still low. High cost of hardware and software infrastructure, non-availability of support systems and lack of expertise are some of the barriers to the adoption of ICT among SMEs. The author recommends recruiting and training (or outsourcing) of ICT expertise in SMEs, SMEs should also be encouraged to use mobile money wallets for cash transactions. Educational and institutions should also look at developing cheaper and more accessible ICT applications primarily for SMEs.

Keywords: SMEs, ICT, Bawku, Rural Communities.

1. Introduction

Small and Medium-Scale Enterprises (SMEs) are an integral part of every nation's economic activity. They play an important role in nation building. It is believed that as they grow and expand the economy also grows. SMEs create employment, and serve as a major tool for poverty alleviation and economic development (Adjei et al., 2014). Small and Medium-Scale Enterprises are enterprises that employ relatively small financial and human capital to do businesses of all kinds. In Ghana, owner-managers find it easier to engage in trade businesses than the other forms of businesses. There is growing recognition of the important role SMEs play in economic development. SMEs are often the main driver for a country's economic growth. It is estimated that more than 95% of enterprises across the world are SMEs, accounting for approximately 60% of private sector employment (Ayyagari et al., 2011).

Small Businesses are often found in the sector of trade and commerce, agriculture, ICT, education, health, manufacturing, production, and other service industries. Under the Venture Capital Trust Fund Act, 2004 (Act 680), Small and Medium-Scale Enterprises is characterized as an industry, project undertaking or economic activity whose total asset base, excluding land and building does not exceed the cedi equivalent of US\$1 million in value. Fianu, Ntim and Oteng (2014) stated that there is growing recognition of the important role small and medium scale enterprises (SMEs) play in the economic development of most countries. They are often described as efficient and prolific job creators, the seeds of big businesses and the fuel of national economic engines. It is argued that SMEs are particularly important in supporting economic growth and livelihoods in developing countries. Even in the developed economies, the SME sector is the largest employer of workers.

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SMEs in Ghana have been noted to provide about 85% of manufacturing employment of Ghana. They are also believed to contribute about 70% to Ghana's GDP and account for about 92% of businesses in Ghana (Abor, 2010). The survival and growth of SMEs can be aided by Information and Communication Technology (ICT) tools that are now revolutionising the way business is conducted. According to Gono et al. (2014), ICT in organizations has taken centre stage more so in SMEs where its critical role and emergent challenges has led to increased support from governments and sector organizations alike. The adoption of ICT can provide SMEs with valuable information, increased knowledge, improved performance, and improved relationships with customers and suppliers, increased efficiency, reduced cost of production among others (Akomea-Bonsu & Sampong, 2012).

Big businesses have taken the opportunity of ICT to gain the edge over their competitors unlike the small and medium enterprises. There is strong evidence that ICT is the driver for economic growth and governments all over are driving SMEs to adopt ICT. Business processes such as ordering, transaction, delivery, inventory control and accounting can be streamlined and connected regardless of location through the use of network of computers (UNCTAD, 2005). Also significant within the technology sphere is the trend for large companies to provide support and mentoring to start-up enterprises (e.g. in Tunisia and Egypt INFODEV 2006). These partnerships can be the most efficient way to foster development within a sector without the intervention of donors or governments (UK House of Commons, 2006).

The Bawku Municipality which is of concern for this study is one of the Municipalities located in the northern part of Ghana that houses a large number and a variety of the SMEs. Most of the indigenes live in rural areas, and there are numerous small scale and family businesses dotted around these rural communities serving as convenient access to the people who buy items and patronise services in limited quantities. It is against this background that the researcher seeks to assess how Information and Communication Technology (ICT) is helping the growth of Small and Medium-Scale Enterprises (SMEs) in Rural Areas, using the Bawku Municipality in the Upper East Region as a study area.

2 Literature Review

2.1 Nature of Small and Medium Scale Enterprises

There is no single, universally acceptable definition of small and medium scale enterprises (Apulu & Latham, 2011). It varies from country to country which is often based on where some define them in terms of their total revenue, while others use the number of employees, assets or a combination of those factors in their definition. Thus, the definition of small businesses varies and is dependent upon whose point of view (Adair & Taylor, 1994; Apulu & Latham, 2011). The Ghana Statistical Service (GSS) defines SMEs as enterprises that employ less than 10 persons while those that employ more than 10 people are classified as Medium and Large Scale Enterprises (Amoak et al., 2014). Alternatively, the National Board for Small Scale Industries (NBSSI) in Ghana combines both the fixed asset and number of employees' criteria to define Small and Medium Scale Enterprises. Thus small enterprises employ between six and 29 people or with fixed assets not exceeding US\$100,000 excluding land and building. However, those with between 30 and 100 employees are classified as medium sized firms (Amoako et al, 2014). These are the two operational definitions adopted by the researcher for this project work. That is, small businesses are businesses that employ less than six persons and medium enterprises are those that employ between six and 30 employees.

The nature of small businesses in Ghana is that, they are often simply registered with the Metropolitan/District Assembly, the Internal Revenue Service and where applicable, the VAT Service. Also, the well-established ones are also registered with the Registrar General's Department. The owner or manager who often doubles as the financial manager is charged with the day-to-day management of cash (Attom & Mbroh, 2012). Adjei et al (2014) noted that small scale enterprise sector lacks funding because the banks and the securities markets shy away from it which seems to be a high risk investments area because the sector is noted for bad accounting practices and also the entities in the sector fail to produce financial reports for better assessment.

Underscoring their indispensability in economic development, SMEs create opportunities for income generation and distribution, capital accumulation, poverty reduction and empowerment of people especially women (Ojo, 2003; World Bank, 2010; Babajide, 2012). SMEs advance the creation of a new class of small entrepreneurs leading to the expansion of the middle class and a wider distribution of income. At the rural level, SMEs have the potential to thrive owing to their location flexibility, low infrastructure and technology requirement, and the capacity to serve small markets. Experiences at the rural communities reveal that SMEs can contribute to increase household incomes, diversify household income sources, and reduce household poverty and vulnerability levels (Anane et al., 2013).

2.2 Concept of Information Communication Technology (ICT)

The 21st century has embraced itself with Information Communication Technology (ICT) as one of the driving forces behind accelerated business growth and development in the world as it is evident that ICT has brought immense innovations, improvements and advanced ways of doing business in a speedily manner in the most developed economies and have provided society with a vast array of new communication capabilities (Acquah, 2012; Attom, 2013).

Anigbogu et al. (2014) defined ICT as an umbrella term that covers all technical means for processing and communicating information. This involves all digital technology including the computer, the different electronic applications, digital media, broadband technology, laptops, handheld devices (mobile telephony), wired or wireless intranet, business productivity software such as text editor and spreadsheets, enterprise software, data storage and security, network security and others (Abdullah, 2014).

According to Dudhe (2013), the evolution and use of ICT has simplify business processes and transactions and has also improves information and knowledge management for better decision making in businesses. On the other hand, Frempong (2005) stated that in the past, most political and development planners classified ICT as a luxury service, and therefore, ICT did not feature prominently in the national strategies for socioeconomic development. But recently ICTs are increasingly seen as key elements to general economic development of any nation.

A majority of the SMEs in the literature have reported a positive performance and other benefits by utilizing ICTs in their businesses (Agboh, 2015). Overall, the following main drivers have repeatedly appear in the literature in both developing and developed nations: perceived benefits and increased sale (Dubelaar et al., 2005; Scupola, 2009), and improved customer services (Scupola 2009; Osmonbekov, 2010; Tan et al., 2010). A study by Akomea-Bonsu and Sampong (2012) found that most of the SMEs in Kumasi reported a positive performance and other benefits of ICT adoption.

Generally, ICTs provides numerous benefits across a wide range of business operations and transactions. Managers of SMEs have pointed out the benefits of ICTs to their businesses, which include increased sales, better communication with stakeholders and effective processes due to their utilization in their organizations. With ICT use, businesses can interact more efficiently and become digitally networked (Buhalis, 2003). Spanos et al. (2002) stated that ICT eliminates distance and time constraints in accessing required information flows and hence improves coordination of activities within organizational boundaries.

There are however, a number of challenges facing SMEs in adopting ICT; the most frequently cited challenges are poor telecommunications infrastructure, lack of skilled or limited ICT personnel, ineffective integration ICT into business processes, high costs of ICT equipment, and government regulations for e-commerce (Tan, et al., 2010). Other studies have determined that technology constraints due to unskilled technicians, including ignorance on the worth of ICTs and return on investment have been the major reasons for lower rate of adoption (Duan et al., 2002). Other challenges include nongovernmental support, expensive initiative, risk, complex procedure, managerial leadership, costs and benefits, security, legal issues, business complexity, human capital deficiency, turnover of technical staff, and customer services (Chong et al., 2001)

Information and Communication Technology has currently occupied a very strategic place in the running of most businesses with the evolving global village phenomenon while ICT costs still remain a recurring dilemma, its use and importance to small businesses in rural areas makes a strong case in this research.

3 Materials and Methods

3.1 Research Design

Descriptive survey was selected because it provides an accurate portrayal or account of the characteristics of the population; for example, behavior, opinions, abilities, beliefs, and knowledge of a particular situation, or group.

3.2 Profile of Study Area

The Bawku Municipal is one of the nine (9) districts in the Upper East Region of north Ghana. The capital is Bawku. The Kusasis (Kusaal) are the indigenous inhabitant population of the Bawku area. There are however large immigrant populations from other locations in northern and southern Ghana as well as from Burkina Faso, Ivory Coast, Togo, Niger and Nigeria. The district is characterized by agriculture, with tomatoes, soya beans and onions being amongst the main crops.

The district contains the following towns and villages: Bawku, Pusiga, Denugu/Danvorga, Kongo Zorsi, Wuriyanga, Narango, Mognori (Gumbo) Widana, Yabrago, Missiga, Bugri-Bulpielse, Manga Basyonde, Binduri Natinga, Kulugungu, Gozesi, and Bugri.

3.3 Population

A population consists of all the subjects a researcher wants to study (Yount, 2006). The target population of this study was the SMEs operating in rural settings in the Bawku Municipality. The study population encompassed all surveyed owners of SMEs, managers or any person involved with the decision making process of SMEs in the Municipality since they can be easily accessed. However, there is no reliable data on the number of SMEs in the municipality. In view of this, the entire municipality was taken for the research. The Municipal houses varieties of small businesses that gave a reasonable number of subjects for the purpose of this study. The population was used as the respondents for this study to offer information mainly about how businesses in rural areas use ICT. Since enterprises can be managed by managers employed to do so by the owners of the enterprise, they were seen as most appropriate to give out the required information by this research.

3.4 Sampling and Sampling Technique

The sample frame for this study consisted of a list of SMEs that are employing at least one ICT tool in their everyday business operation and who are situated in Bawku Municipality. The sample size for the study consisted of 100 respondents. This comprised of SMEs in the areas of finance, hardware, retail, manufacturing, clothing, trade and commerce and service. The researcher chose this sample size of 100 in order to get a fair reflection of the attitude of rural entrepreneurs towards ICT usage for business activities. The sampling technique used was the purposive sampling. This enabled the researcher to select respondents who would be able to provide the needed information.

3.5 Data Collection

3.5.1 Secondary Data

Secondary data was used to complement the information solicited by the researcher to discuss the topic under study and to draw valid conclusions. Sources for the secondary data was obtained from existing journals, articles, internet, newspapers, published and non-published works of scholars in the area of study.

3.5.2 Primary Data

Primary data for this study was solicited from respondents within Bawku Municipality. Their responses formed the basis for the analysis and subsequent discussions. Data was solicited through the distribution of self-administered questionnaires to contacted respondents from the municipality. However, when the need arose, the researcher offered face-to-face interviews especially with respondents who experienced constraints in answering the questionnaires.

3.6 Research Instrument

In order to ascertain data relevant for the research, questionnaires were designed and administered to the respondents. The questionnaires which comprised of both open-ended and closed-ended questions were designed for the respondents to provide answers to it. The open-ended questions allowed respondents to use their own discretion to define a complex issue by giving unlimited chance in answering. The closed-ended questions gave the respondents a set of responses from which they chose the one which suited their understanding and thought of the question asked. The questionnaires were given to 100 contacted owners or managers of these SMEs in the municipality to provide answers to them.

4 Results and Discussions

4.1 Nature of SME Business Activities

Small and medium scale enterprises were selected randomly from the survey area to find out their nature of business operations in the municipal. Table 1 shows the nature of small businesses operated by the respondents in the sampled study.

Table 1: Responses on business nature

Business nature	Frequency	Percentage
Retail	40	40
Services	10	10
Production	5	5
Tailoring/Clothing	15	15
Beauty salons	15	15
Construction	5	5
Supermarket/Mart	4	4
Education	6	6
Total	100	100

Source: Author's construct

Table 1 reveals a typical characteristic of rural settings in developing countries where most businesses are small retail outlets dotted throughout small towns and villages. Those that are classified as services mostly do repairs of electronic gadgets, mobile money transfer, secretarial service and photography. A relatively low figure of five percent (5%) each of production and construction points to the fact that these are very limited activities in rural settings; those that were interviewed are mostly into food production, soap and small construction firms. Same can be said about supermarkets and small educational institutions. Government schools continue to dominate the educational sector in areas such as this. Other significant numbers of small businesses are the beauty salons and tailoring shops. These play a very significant role in rural areas, most men and women patronize these when it comes to appearance and the clothes they put on.

4.2 Educational Level of Owner/Managers

Data on the educational background (as shown in Table 2) of owners and managers of these small businesses shows there is very low formal education among these entrepreneurs. Those who own/manage retail outlets either have no education at all or only had some basic education, those who work in the educational institutions showed strongly when it comes to formal education with about 80% of those interviewed been educated to the tertiary level. On the whole, small scale businesses in these rural areas are owned and managed mostly by people who had basic education (up to Junior High School).

Table 2: Highest level of Education by Business Owners/Managers

Type of Business	Number selected	Highest Level of Education						
		None	Primary	Junior High	Senior High	Vocational	Tertiary	
Retail	40	5	23	4	2	6	0	
Service	10	0	0	3	5	0	2	
Production	5	0	0	2	0	3	0	
Clothing	15	0	7	3	3	2	0	
Beauty Salons	15	0	5	8	2	0	0	
Construction	5	0	0	0	1	3	1	
Supermarket	4	0	0	1	4	0	0	
Education	6	0	0	0	2	0	4	

Source: Author’s construct

4.3 ICT Tools Used by SMEs

ICT usage in the areas of other ICT tools such as the mobile phone, fixed lines, the internet and personal computers were investigated to know the possession of these facilities by SMEs, and the preferred tool for doing business, and communicating with customers and suppliers in the country. Table 3 shows the three common ICT tools possessed or employed by SMEs in Ghana.

Table 3: Preferred ICT tool use by SMEs

Communication Tool	Mostly used	(%)	Seldom used (%)	Not used (%)
Telephone	5		25	70
Cell-phone	98		1	1
Personal Computer	8		25	67

Source: Author’s construct

From Table 3, mobile phone was popular with all the SMEs. The reason for this phenomenon is not farfetched; the use of other ICT services required a more permanent, secured business structures and premises. However, most of the informal operators (especially the SMEs) operate in temporary and make shift structures, most often sited at unauthorized places. Therefore, the temporary nature of such structures give credence to the use of more flexible communication gadgets which one can easily carry along when the business has to relocate. This and in addition to others, have made mobile telephones attractive to the enterprises in the informal category.

However, one cannot discount the issue of high cost in accessing the other ICT services such as computers, internet and fax, among others. The investments in these facilities are relatively higher and this may discourage many of the informal operators from acquiring them. This shows how popular and important mobile phones are among SMEs in Ghana and how the postal system and fixed line has lost its grips in the market as tool for communication among SMEs.

4.4 Main Uses of ICT

This section is to find out the main use of the ICT facility they employed in their business. Table 4 shows the main uses of the facility among the respondents who use computers.

Table 4: Main Uses of ICT Tools

Main use of ICT	Very often (%)	Quite often (%)	Not at all (%)
Secretarial and Book Keeping	21	0	79
Business Promotion	10	10	80
Payroll Management	20	5	75
Customer Relationship Management	78	15	7
Contacting Suppliers	89	8	3
Mobile Money Transaction	10	34	54

Source: Author's Construct

As shown in Table 3, customer relationship management and contacting suppliers were some of the most common use of any computer tool by the SMEs. A lot of small business owners use communication technology to contact suppliers and stay in touch with customers. A relatively few of them use these tools for promotion and payroll management. It is obvious that most of them use the cell-phone to call for supplies, what is more enlightening is that these businesses in rural areas are getting more proactive; calling customers to inform them of new products and services instead waiting for them to come to the shop. Electronic book keeping was found to more popular with the super markets, construction firms, and educational institutions; these are more stable and have more educated people working in these roles.

Cash transaction through mobile phones (mobile money) is very popular among rural folks; they send and receive money through this means with relatives who live in other areas of the country. However, they do not feel it is safe for them to use same facility to do cash transfers between them and suppliers and/or suppliers. This author's view is that this mode of cash transaction can help reduce the cost of doing business since small business managers in these rural areas travel long distances just to deposit money, pay suppliers and go after debtors to pay up their debts.

4.5 Perceived Benefits of ICT to SMEs

On identifying the benefits of ICT to SMEs, from the review of the relevant literature, respondents were asked to specify their level of agreement on how ICT has contributed in the growth and development of SMEs in terms of lowering transaction cost, improving communication among customers and suppliers, information acquisition on time, wider presence and increase in market share, and better relationship with suppliers and customers. Table 5 represents the responses from the respondents.

Table 5: Perceived Benefits of ICT to SMEs

Perceived Benefits of ICT	Strongly Agree (%)	Agree (%)	Neutral (%)	Disagree (%)	Strongly Disagree (%)
Decreased cost of transaction	40	55	4	1	0
Enhanced Business Communication	50	34	15	1	0
Enhanced Customer Relationship	80	19	0	1	0
Business Growth	40	58	1	1	0
Encourage Repeat Purchase	76	22	1	1	0

Source: Author's construct

From Table 5 most of the respondents agree that ICT has decreased the cost of contacting suppliers and customers. It can be deduced that decrease in the cost of contacting customers, improvement in business communication, reach to new customers and better relationship with existing customers, and better relationship with existing suppliers and other SMEs are the areas in which ICT has significantly contributed to the growth of SMEs in the rural areas.

4.6 Barriers to ICT Usage among SMEs

ICT usage among SMEs is still low compared to the population of SMEs in the study area. Reasons were sought on why SMEs are not using ICT and the result is represented in Table 6 below.

Table 6: Barrier to ICT usage among SMEs

Barriers to using ICT for SMEs	Strongly Agree (%)	Agree (%)	Neutral (%)	Disagree (%)	Strongly Disagree (%)
Lack of access to ICT tool	40	55	4	1	0
Security concerns	50	34	15	1	0
Lack of expertise	80	19	0	1	0
Cost of using ICT tools	40	58	1	1	0
Non applicability to business	76	22	1	1	0
Non availability of supporting systems	76	20	0	4	0

Source: Author's construct

From Table 6, it is obvious a lot of the people managing the businesses in these areas do not have much expertise in the area of ICT. As noted earlier, most of those who own and manage these small businesses have basic formal education; this has great impact on them not being able to use some ICT tools to facilitate business transactions. Most of them also believed that these modern technologies do not either apply to their business or that the support systems for such technology is not present to aid their use. Internet connectivity is the scarcest support system identified in this research; its availability, reliability and even where it is available, the cost of using it is very high for businesses like these. Most owners did not even think it was worth even considering the use of e-mails and other internet operations, to them even their customers and suppliers do not use any internet facilities, so acquiring such tools would be a bad investment for them. Security concerns mainly stemmed from the use of money transfer through of mobile communication networks (popularly referred to as mobile money). Even though mobile money is very popular among rural folks in Ghana, small business managers are still not convinced that their money is safe with this facility, hence transferring money to suppliers and receiving money from customers is deemed unsecured. As noted earlier, most of these entrepreneurs use the cell-phone to transact business with customers and suppliers, but not cash transactions.

Summary

Most small business owner in rural areas have either a little or no formal education; those who are educated mostly go up to the Junior High and in a few instances, Senior High School. Most SMEs in rural areas are employing at least one ICT tool in their business, mobile phones are the most popular, accounting for about 98% of all small businesses surveyed in this research. While mobile phone usage seems to be high, PCs and fixed lines usage are still low. Mobile phones popularity could be attributed to its mobile nature and easiness of use. Most of these SMEs use these mobile phones primarily for making voice communications and short messaging service (SMS). However, the use of computer and the internet by SMEs are still low as only 13% among the respondents use computers in their business. On the basis of relationships among SMEs and how ICT has facilitated that, most of the respondents strongly agreed that ICT especially mobile phone has enhanced relationships with their customers as well as suppliers. ICT has contributed enormously to the growth of SMEs by lowering transaction cost, increasing employee efficiency, decreasing the cost of communication between SMEs and their customers, and improving business communication.

These responses varied among individuals but over 70% of the respondents agreed that ICT has contributed to the growth of their businesses. In finding the barriers that impede the usage of ICT among SMEs in Ghana, it was found out that high cost of software and hardware, low formal education by owners/managers, non-availability of the support systems, lack of applicability to their business, and security issues were confirmed to be militating factors against the use of ICT by SMEs.

5. Conclusions

Information Communication Technology is an enormous subject which covers, amongst others, normal telephones, cell phones, mobile technologies, point-of-sale systems, the Internet, PCs and networks. ICT is an enabler for global networking and can be used in different ways, such as: the general usage mainly for administrative purposes such as secretarial and book keeping, in supporting business processes and the production of goods and services, and for marketing purposes.

Small firms play an important role in the global economy; they contribute to the GDP and reduction of unemployment, especially in developing countries. Many governments around the world are pushing for SMEs to adopt ICT in order for them to survive in the knowledge economy which Ghana is no exception. The need for SMEs to adopt ICT is driven by governments, globalization, innovation, flexibility and competitive advantage. The adoption of ICT should take into consideration that SMEs are different and thus have different needs for ICT. It is important for an SME to adopt ICT solutions that are specific to its needs. However, a number of barriers make it difficult for SMEs to adopt ICT, such as a lack of knowledge about the use of ICT, a lack of necessary IT skills, and high setup cost among others.

6. Recommendations

The researcher recommends that SMEs should invest in educating their staff and management about ICT and its benefits, or by investing in the recruitment or outsourcing of knowledgeable ICT specialists. SMEs in rural areas should be encouraged to use mobile money wallets and do cash transactions through such medium in order to reduce cost of travelling to pay or deposit moneys, and the risk involved in carrying such cash. The study further recommends that software developers should develop applications that are compatible with mobile phones (which are mostly used by SMEs) that can help them grow their businesses. Also, SMEs and their owners (management) should build a culture that is favorable to technology and innovation.

Finally the government, universities, and other institutions in the country must devise a mechanism for coming out cheaper software and computers but of durable quality to support these SMEs.

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