

Mobile Phone Usage by Micro and Small Scale Enterprises in Semi-Rural Ghana

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ABSTRACT: This work looked at the use of mobile technology among entrepreneurs/managers of micro and small scale businesses in the Akuapem North district of Ghana. The major findings were that entrepreneurs/business managers would use more than one mobile phone and/or subscribed to more than one network in order to make affordable calls, to enjoy excellent service from other network providers, for business purposes, security reasons and to have a place for their many contact numbers. Apart from marketing/sales purposes, the managers/entrepreneurs used phone for the gathering of information, for product delivery/procurement and managing internal affairs among others. A Chi square test confirmed that mobile phone has helped businesses improve customer services, improve communication with suppliers/customers, open up new branch, keep up with competitors and help increase profit. However, the respondents identified a number of occasional challenges such as no reception, poor sound/breaking up of sound and calls ending unexpectedly.

Keywords: Mobile phones; Semi-rural; Ghana; MSEs

JEL Classifications: D83; O18; L3

1. Introduction

Micro and Small enterprises (MSEs) have received a lot of attention in recent times from policy makers, politicians, business and economic analysts. One of the issues addressed has been their importance in the development of an economy. According to Fan (2003), small scale businesses serve as the engine of growth to an economy, they are essential for a competitive and efficient market and they are critical for poverty reduction. Roldan and Wong (2008) have also realised that micro, small and medium enterprises are helpful in creating employment, generating income and the redistribution of economic opportunities. Small scale enterprises are again noted for the support they give to nonagricultural household enterprises (Mazumdar, 2001). The importance of MSEs is arguably, well noted in Ghana. These businesses according to the Social Security & National Insurance Trust (SSNIT) form about 90% of companies in Ghana that employ less than 20 people.

A common scene recently, is the display of mobile contact numbers on the sign post and shops of MSEs in Ghana. Such an observation, in the past, was mainly associated with the medium and large scale businesses in the country and the displayed number was that of the fixed lines predominantly. Thus owners and managers of MSEs seem to be taking advantage of the development in the information and communication technology (ICT) Ghana is experiencing. Studies abound on MSEs and mobile phone usage however; there are certain questions that need to be addressed in the literature. The reason is most studies on mobile phone usage by MSEs as well as medium scale enterprises have focused mainly on the urban centers with little known about the rural and semi-rural areas.

So one may ask questions like, do semi-rural MSEs use mobile phones? If so, how do they use the phone? What factors/reasons may motivate them to use mobile phones? How beneficial has mobile phones been to their businesses? What challenges confront them for using mobile phones? Answers to these questions would go a long way to help bridge the gap in the literature. As a result of this, the

study attempts to find some responses if any to the above questions by using a semi-rural district in Ghana, the Akuapem North district as a case study.

2. Literature Review

The literature mentions some advantages users of mobile phone enjoy. For instance, Kakihara and Sorenson (2002) talked of the key characteristics of interactivity, spatial mobility, temporal mobility and the contextual mobility associated with mobile phones that is not available when using a land line. Mobile phone users again enjoy some flexibility, connectivity, ubiquity (Barnes 2002), and location awareness (Henfridsson and Lindgren, 2003) which in the opinion of (Barnes 2002), facilitates organizations' operations. According to Rayport and Jaworski (2004), mobile phones facilitate more efficient production, help in the distribution and marketing of products and services, and also help to gain an understanding of international markets (Hooper et al. 2010). Madon (2000) and Khalil (2003) have also highlighted that there is a direct link between electronic communication/information access and poverty reduction (Ojukwu, 2006). According to Earl (1988), every organization that commits itself to invest in ICT has the benefits of gaining competitive edge; improving productivity and performance; facilitating new ways of managing and organizing; and of developing new businesses (Ojukwu, 2006). The ease at which one can use mobile phone with little training has not escaped Esselaar et al. (2007).

Roldan and Wong (2008) argued that the importance of mobile phone to micro and small scale business lies in the fact that mobile phone serves as a productive tool, a gatherer and disseminator of information and a tool to create network opportunities. The authors explained that mobile phone provides productive services for business owners when they use the phone to transact business in the form of completing an order or a bid for a stock which helps to save precious time. The role of mobile phone as a gatherer and disseminator of information is also explained by the authors that it removes economic boundary which enables the user to reach business partners or customers. Mobile phone again helps to create network opportunities for the business owners because of the encounter one is likely to have by using phone. Jensen, (2007) also noted that mobile phones can help achieve better prices for services and decrease price dispersion (Rabayah and Qalalwi, 2011).

Additionally, Aker and Mbiti (2010) have identified five importance of mobile phone usage to both consumers and producers including (a) an improved access to and use of information, thereby reducing search costs, improving coordination among agents and increasing market efficiency, (b) an improved productive efficiency and (c) facilitating communication among social networks in response to shocks, thereby reducing households' exposure to risk. According to Corbett, (2008) the recent development of mobile phone usage in Africa has caused policy makers now to think of the mobile phone as a means of transforming lives through innovative applications and services such that many have hyped its potent in the eradication of poverty on the continent (Aker and Mbiti, 2010).

Meanwhile it is worthy to note that the use of mobile phones by enterprises may be influenced by a number of factors. Zhang and Yuan (2002) have mentioned the cost associated with using mobile phone; (Hooper & Zhou 2007) talked of the personal attributes of the user, the influence of others and the motivation of the user; and Mehrtens et al. (2001) revealed the perceived organizational benefits, and organizational readiness (Hooper et al., 2010).

There have been some empirical studies to confirm the benefits associated with mobile phones. One of such studies is the work by Samuel et al. (2005) which found that about 60% of micro entrepreneurs from South Africa, Tanzania and Egypt reported of an increased in the profitability of the business as a result of mobile phone usage (Donner, 2006). Again, Jensen (2007) studied the impact of mobile on the fishing industry in the Indian district of Kerala, and observed mobile phone coverage led to among others, a reduction in the dispersion of fish prices across markets and a 8% increment in fishermen's profits (Rabayah and Qalalwi, 2011). More so, Esselaar et al. (2007) carried out a survey in 14 African countries and found that entrepreneurs who had mobile phones used them more often for keeping in contact with customers and clients compared to any other form of communication. In Ghana, Boadi et al. (2008) studied the impact of mobile use on farmers and fishermen and found that mobile or m-commerce facilitated cost reduction for farmers and fishermen, and offered them opportunities for deepening internal and external business relationships.

Muto and Yamano (2009) similarly estimated the impact of mobile phones on agricultural markets in Uganda. Using a panel dataset on farm households between 2003 and 2005, they found that

mobile phone coverage is associated with a 10 percent increase in farmers' probability of market participation for bananas, than maize, thereby suggesting that mobile phones are more useful for perishable crops (Aker and Mbiti, 2010). In another study, Rabayah and Qalalwi (2011) found in Palestine that from 2007 to 2009, the mobile phone penetration rate was higher than all other ICT indicator. Other findings were that, 84% of all enterprises used mobiles for information related issues valuable for their businesses; 38% of respondents used their mobiles to administrate their internal operations and another 84.4% feel enhancement in their response to customers. Enterprises however showed less concern about other importance of mobile such as lowering operational cost, improvement of product and service quality, keeping up with competitors, and by passing middle man.

3. Methodology and Data

3.1. Study Area

The Akuapem North District was established in 1988 by Legislative Instrument (LI) 1430. Until then, it was part of the erstwhile Akuapem District Council which was established in 1975. Akropong is the District Capital. Other major towns are Mampong, Adukrom, Larteh, Abiriw, Awukugua, Mamfe and Dawu. The district is located in the south-eastern part of the eastern region and is about 58km from Accra, the capital city of Ghana. The District covers a land area of about 450 sq. km representing 2.3% of the total area of the Eastern Region.

Farming is the major occupation of the populace. Major crops grown in the District are cassava, maize, yam, plantain, potatoes, fruits and vegetables. Non-traditional products, particularly snails and mushrooms, are also being produced and their production is raising providing avenues for investors to exploit emerging export markets and reap significant foreign currency earnings. The arts and crafts industry is also very vibrant in the district, having artisans who are highly skilled in making ceramic products and wood carvings. A critical observation of the industrial sector of the district shows that the manufacturing industry is the one which employs most of the people engaged in that sector employing over 50%. It involves carpentry, bakery, pottery and blacksmithing. The agro-industry includes oil palm production, rice mill, com mill, floor mill, mushroom cultivation, beekeeping and carbolic soap production.

3.2. Study population and Sampling Technique

Three towns Akropong, the district capital, Adukrom and Mampong were purposely selected for the study. The selection was based on the fact that comparatively, these towns are the largest towns in the district and they appear to have a number of MSEs that would assist in this research. With no official data of the registered small scale business in the district, the study targeted 100 respondents (businesses) belonging to any of the following four groups:

- (i) Accommodation/ Catering
- (ii) Tailoring/carpentry
- (iii) Retailing
- (iv) Printing /communication

3.3. Data Collection

A questionnaire was the major instrument used to collect the data. The questionnaire was used in order to get a standard form of answers or response. To get accurate information for the study the questionnaire was given to the owners/managers or other people who occupy position that will enable them answer the questions. Two research assistants were dispatched to these towns to data collection from the 20th December, 2011 to 28th January 2012. Out of the 100 respondents targeted 94 questionnaires were completely and well answered and that was used for the analysis of the study. All data collected was then analyzed using statistical software SPSS 16.0.

4. Results and Discussions

The issues discussed here include the demography, the number of mobile phones one has, the number of network one has registered, the uses of mobile phone, the benefits of mobile phones to business and the challenges businesses face for using mobile phone. The result from the study was helpful in drawing of conclusions and policy implications on the use of mobile phone by micro and small scale entrepreneurs/managers.

Demographics

As far as the sex distribution is concerned, males respondents were 47.9% and 52.1% females telling us that majority of the respondents who were business owners or managers were females. Also, majority of the respondents (44.7%) were aged between 26-35 years. This was followed by those between 16-25 years and 36-45 years tying at 19.1%. Those between 46-55 years followed with 12.8% and the 55 years plus formed 4.3% of the respondents. What one can make up of this is we had majority of business owners/managers who were young and energetic.

The minimum, maximum and mean ages of the business were 7 months, 36 years and 8.37 years respectively. A detailed look at the ages of business revealed that 41.3% of business were below 6 years, 40.2% between 6-12 years, 13% between 13-19 years and 5.5% were between 20 and 36 years. On the business classification it was found that a majority 39% belonged to tailoring/carpentry, followed by wholesale/retail with 23.4%, accommodation/catering having 19.2% and printing/communication with 18.2%. The minimum number of workers employed in the business was one worker, 15 as the maximum number of employees and the mean has 2.76 workers. Again, those who have been using mobile phones for 1-3 years were 35.5% of respondents while 46.2% belonged to those who have been using mobile phones between 4-7 years and the remaining 18.3% have used mobile phones for 8 years and above.

Number of Mobile Phones and Sim cards

The research sought to find out the number of phones used by entrepreneurs or managers as well as the number of sim cards or the number networks they had subscribed to. The findings presented in table 1 shows that majority of the respondents (73.4%) used one mobile phone while 22.3% used two phones and 2.1% used three phones and another 2.1% had four phones. On the number of sim cards used or network subscribed by respondents, a majority of 51.1% subscribed to one network, followed by 37.2% who had subscribed to two networks. 1.1% of the respondents had all the five networks in the country. As of the time of doing the research there were five mobile telecommunication networks operating in the Ghana although six had been licensed. The operational ones were Tigo Ghana Limited, MTN Ghana, Vodafone Ghana, Expresso and Airtel Ghana. The sixth one Glo mobile was not operational then. Thus 51.1% of our respondents used one of these networks, 37.2% used two of the networks and 6.1% used three. 4.3% used 4 networks while 1.1% used all the five networks.

Table 1. Number of Mobile Phone and Sim cards usage

Mobile Phones		
Number of Phones	Frequency	Percentage
1	69	73.4
2	21	22.3
3	2	2.1
4	2	2.1
Sim Cards/network		
Number of sim cards/ network	Frequency	Percentage
1	48	51.1
2	35	37.2
3	6	6.4
4	4	4.3
5	1	1.1

Source: Field Survey

When asked to state why they were using more than one phone or subscribing to more than one network, the commonly cited reason was the need to make affordable cost since it is cheaper to call a number on the same network compared to calling someone on a different network. The second reason had to do with poor services and conditions of services received from network providers. The third was for business purposes the fourth was low phone book capacity and the last point raised was to secure their contacts against phone lost.

Factors considered in the selection of a network

Having identified the possible reasons why respondents may be using more than one network for their operations the study sought to find out the criteria they used in selecting a network. The results of the factors they considered in choosing a network can be seen from table 2 below.

Table 2. Factors considered in the choice of a network

Indicator	Percentages
Coverage	61.7
Cost of using phone	44.7
Phone functionality	20.2
Business activity	45.5
Reception	74.5
Customer services	33.3

Source: Field Survey

The factors that more than half of the respondents considered in their choice of a network were reception (74.5%) and coverage (61.7%). Reception and coverage are very necessary for entrepreneurs/managers as they would be communicating with one business partner or customer. It is not a wonder that more than half of the respondents would consider them. The third important factor considered was the kind of business activity they engaged in. That had 45.5% of the respondents. Thus, the network which offers the kind of services that would be of interest to businesses is likely to have a number of entrepreneurs/managers who will subscribe to that. The least factor considered was the phone functionality which had 20.2% of respondents regarding it. This was after customer service factor with 33.3%.

Mobile Phone Usages

Another important issue looked at was the usage of phones relating to business activities. The result is presented in the table 3 below.

Table 3. Mobile Phone Usage relating to business activities

Usage	Percentage
Data Processing	7.4
Marketing/sales	56.4
Product delivery/procurement	47.9
Managing internal operations	39.4
Banking services	12.8
Gathering information	57.4
Internet access	27.7

Source: Field Survey

It is discernible from table 3 that majority (57.4%) of the respondents used their mobile phones for gathering information relating to their activities supporting Roldan and Wong's (2008) argument that among other things mobile phones is used as a gatherer and disseminator of information. Thus the problem of information deficiency faced in the past by entrepreneurs/managers may be reduced with the advent of mobile phones. Additionally, 56.4% of the respondents used their phones for marketing/sales activities and 47.9% used their mobile phones for product delivery/procurement. This outcome corroborates Rabayah and Qalalwi (2011). With mobile phone one is able to communicate with customers or suppliers, make arrangement and comfortably deliver their products. Among the possible use of mobile by enterprises, is its use in managing internal operations within the enterprise. 39.4% of respondents used their mobiles to manage their internal affairs. What mobile phone has come to help is the ease with which managers are able to communicate with workers and leave important messages helpful for the smooth running of business. When it comes to accessing the internet, 27.7% of the respondents said they used their phones to access the internet for some information relevant to them. Using mobile phones for banking services and data processing had the least response from respondents with 12.8% and 7.4% respectively.

Frequency of service usage

The study again sought to find out how respondents often used the following services on their mobile phones: voice calls, sending text message, accessing internet, accessing emails and video calls.

Table 4. Frequency of services usage

Service	Frequently (%)	Occasionally (%)	Never(%)
Voice calls	96.8	3.2	0.0
Send text message	44.7	37.2	18.1
Access the internet	27.7	5.6	66.7
Access email	18.9	8.9	72.2
Video calls	6.7	10.0	83.3

Source: Field Survey

Table 4 displaying the results tells us that the most frequently service used by respondents was voice calls which received the highest votes of about 97% of the respondents. 3.2% of respondents said they made voice calls occasionally. Making voice calls does not entail any complex procedure. All that one needs to do is to enter the number and then press the “send” button and as such those with low level of education can easily learn and use. It is thus user friendly to those who are afraid of technicalities. This may explain why close to 100% of the respondents would frequently use this service.

Next to voice calls was sending of text message which was frequently used by 44.7% of the respondents, occasionally used by 37.2% and 18.1% never sent text message. Sending text lengthy message may take time do so, although it may be cost effective. As a result those who may want to carry their message across can comfortably do so by pressing the “key board” on their phones. However, there are some challenges for using text messages to communicate. One challenge with sending a text message is the fact that it is not user friendly to illiterate and this may deter such people from doing so. Also, the concern that the message one wants to put across may not be grasped well by the receiver, may force others to make voice calls rather. This concern arises probably because more often than not, the messages sent are short hands and that makes reading difficult. The third challenge about sending text message is the fear that it may not get to the recipient on time and the cost associated with that may be more than the cost associated with voice calls.

Accessing the internet took the third place with 27.7% as those that frequently used the service compared to 66.7% that had never accessed the internet on their phone and the 5.6% who occasionally would use that service. Video calling had the least number of respondents (6.7%) using that service frequently. The low usage of these services can be attributed to the technicalities involved.

Benefit for using Mobile phone

Another question of interest was to find out how the use of mobile phone has helped the business activities of respondents. The possible benefits listed included lowering operational cost and increasing savings, improved customer services and improved communication with suppliers/customers. The rest were opening up of new branch, improved service/product delivery, keeping up with competitors and increased profit.

From table 5 we see that majority of the respondents perceived that the use of mobile phone has helped improved communication with suppliers/customers such that close to 70% of respondents agreed that their communication with their “partners” in business had improved. This result is similar to what Rabayah and Qalalwi (2011) found in Palestine. Once the entrepreneur/manager, the customer and the supplier have mobile phones they are able to call each whenever the need arises for a specific action to be taken. Thus there is the ability to call at any time to make enquiries, seek clarification or make an order within the shortest possible time.

With an improved communication it is not surprise that 55.9% stated that it has led to a reduction in their operational cost and increased savings. Improved customer services with 39.8% follows as another benefit from using mobile phones and the benefit with the least number of respondents (11.8%) was opening up of new branches. The chi square test also confirms that the benefits distribution as indicated by respondents are not due to chance with the exception of the reduction in operational cost and increased savings.

Table 5. Benefit from using mobile phones

Benefit	Percentages	Chi square test
Lower operational cost/increased savings	55.9	1.301
Improved customer services	39.8	3.882**
Improved communication with suppliers/customers	68.8	13.172***
Open up new branch	9.7	60.484***
Improved product/service delivery	16.1	42.677***
Keep up with competitors	20.4	32.527***
Increased profit	11.8	54.204***

** , *** indicate level of significance at 5% and 1% respectively

Challenges from network providers

Users of mobile phones are faced with a number of challenges including no reception at some point in time, poor sound or breaking up of sound, calls ending unexpectedly, difficulty in sending and receiving late text messages. Respondents were first asked to identify the challenges they faced and were later asked to state frequency of occurrences of such challenges. The results of these challenges as identified by respondents are shown in table 6 below.

Table 6. Challenges in using mobile phone

Challenge	Over all percentage	Regular Percentage	Occasionally percentage
No reception	94.6	34.4	65.6
Calls end unexpectedly	82.6	19.2	80.8
Poor sound quality/breaking up of sound	88.0	18.3	81.7
Unable to send text message	65.9	16.9	83.1
Unable to receive text message	60.4	27.0	73.0

Source: Field Survey

“No reception” had the highest number of respondents saying that is a challenge they faced in their bid to communicate with business partners. About 94.6% of respondents stated that. This was followed by poor sound/breaking up of voices with 88.0% and an abrupt end of calls with 82.6%. Receiving text messages late was identified as the challenge with the least percentage of 60.4. A careful look at the frequency of these challenges shows that respondents experienced these challenges not on regular basis but occasionally.

Efforts to deal with the challenge

When asked whether they make any attempt to deal with the challenges they faced, a majority 69.9% said no as against the 30.1% who said yes (table 7). And the efforts they made included contacting the network providers, through phone calls or personally visiting their office, and switching to other network they thought would provide them with a better quality of service.

Table 7. Respondents that have made efforts to deal with challenges

Number of respondents	Percentage
Yes	30.1
No	69.9

5. Conclusion and Recommendations

This work has looked at the use of mobile technology among entrepreneurs/managers of MSEs in a semi-rural district, Akuapem North district of Ghana. The findings were that majority of the respondents used one mobile and had subscribed to only one network out of the five mobile telecommunication operators in the country. The few who had two, three or four phones and/or had subscribed to more than one network said they had done so for reasons like the need to make

affordable calls and to avoid the poor services they received from the network providers. Other reasons were for business purpose, security reasons and lastly to have enough phone book to keep contact numbers. According to the respondents, they regarded reception, coverage and their own business activity as the top most factors considered in selecting a particular type of network. The other factors taken into consideration were the cost of using phone, customer services and phone functionality.

Regarding their business activities and mobile phone usage, more than half respondents said they used their phones for marketing/sales purposes and for the gathering of information. The other usages of mobile phone identified were for product delivery/procurement, managing internal affairs, accessing the internet, for banking services and data processing. Again it was found that close to 97% of respondents used their phones to make voice calls, followed by sending text messages and accessing the internet. Video calling was the least service used by respondents. The use of mobile has been of great help to MSEs in the Akuapem North district of Ghana. From the study MSEs have benefitted from the use of mobile because it has helped lower operational cost and increased savings. It has also improved customer services, improved communication with suppliers/customers, open up new branch, keep up with competitors and it has helped increased profit.

Despite the benefit MSEs enjoy from mobile phone usage, the respondents identified a number of challenges. The top most three identified challenges were no reception, poor sound/breaking up of sound and calls ending unexpectedly. The rest were unable to send text messages and receive text messages. However, these challenges according to respondents were experienced occasionally. It is therefore not surprise that only 30.1% of respondents would make an effort to deal with any of the challenges they faced. The efforts they used to tackle their challenges included contacting the network providers call phone calls or personally visiting their office, and switching to other network they thought would provide them with a better quality of service.

Following the above revelation and discussion it is recommended that other business that do not use mobile phones should start to equally benefit from it. Also further investigations can be made to ascertain how the challenges identified by respondents may affect business activities.

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