

Mobile Phones and Growth of Microenterprises: A Case Study of Safaricom's "Zidisha Biashara" Customers

Geoffrey Wandeto Mwangi
Safaricom Ltd., Nairobi, Kenya
gmwangi@safaricom.co.ke

Freddie R. Acosta
Strathmore Business School, Nairobi, Kenya
facosta@strathmore.edu

The study aimed at establishing the impacts of mobile phones usage on the growth of microenterprises. The study focused on mobile phones (and not telephony or telecommunications in general) because of the speedy adoption and widespread usage of mobile phones witnessed in Kenya over the last 10 years. The objectives of the study were based on three indicators of business growth, that is, income, profitability (cost management), and customer base. The study adopted a descriptive design method since it aimed at discovering and describing if a relationship exists between the variables. The study purposively sampled 100 microenterprises from Safaricom's *Zidisha Biashara* programme. Due to the near ubiquitous nature of mobile phones in Kenya, non-users were not studied. Structured questionnaires were used for collecting data. They were administered using both manual and online methods. Data analysis was carried out using descriptive and inference statistics.

In the findings of the study, a majority (91.3%) of the respondents agreed that the use of mobile phones led to increase in business income, profitability, and customer base. The study concluded that, holding other growth factors constant, the use of mobile phones has a significant influence on the growth of microenterprises.

The study recommended that promoters of microenterprises should incorporate the features and capabilities of the mobile phone as part of the tools they provide to support microenterprises. It also recommended that owners and managers of microenterprises should incorporate a mobile phone strategy in their operations and explore innovative ways of using it as a driver for growth. A final recommendation was made to the ICT community to develop mobile applications to support microenterprises in areas such as mobile advertising, mobile payment platforms, and customer relationship management.

JEL Classifications: O31, O32, O33, P42, O43

Keywords: Mobile Phones, Microenterprises, ICT, Business Growth, Communication

Background of the study

Communication has been identified as key tool in our daily interactions by Guffey and Loewy (2010). They asserted that in today's market place, one of the fastest ways to ensure success is by having excellent communication skills and tools since today's work activities revolve around communication. Additionally, Singla (2009) acknowledged that communication establishes the relationship between different parties connected to any given business. He also noted that for a business to actually exist and prosper, communication between the buyers, suppliers, and the business must not be hindered in any way. The gains of each of the mentioned parties are only realised when communication flows unblocked to the desired end. With communication, an offer can be made and accepted or rejected according to the terms.

However, for communication to be beneficial to the society at large, it must operate within certain principles. Management Study Guide (2011) reckoned that communication is a continuous process. King (2011) on the other hand wrote that for communication to be complete, it must meet certain principles which he called the 7C's of communication. Among these principles, King talked of the medium of communication as being core for communication to be effective. In determining the best medium for communication, one needs to consider several things among them; the intended recipient of the message, the occasion, intention of communication, the expected result/answer, among other things. To get maximum effect, the tool of communication must be considered; for instance whether to use a phone call, an email, or a post mail. (Robbins, 2005).

Singla (2009) wrote that the best communication tool is the one that gives the exact intention of the message sender. He singled out the mobile phone as a very effective tool of communication due to its portability and the fact that it can be used to communicate to different audiences at different times without affecting the end message.

De Bruijn, Nyamnjoh, and Angwafo (2010) concurred by asserting that the use of mobile phones globally, and particularly in Africa, has received widespread adoption in a short period due to its portability, affordability, and availability compared to other forms of communication.

By 2008, global mobile phone subscriptions according to CIA World Factbook (2009) stood at approximately 4 billion, of which Kenya had 11.4 million subscriptions. After lagging behind for years in the telecommunications arena, Kenya today has over 20 million mobile phone users (Communications Commission of Kenya [CCK], 2010). With a population of 38.6 million (Kenya National Bureau of Statistics [KNBS], 2010), teledensity or number of mobile connections per 100 inhabitants is estimated at over 50% in Kenya (CCK, 2010). This is a sign that the interaction and usage of mobile phones among Kenyans in day-to-day activities is very high and cannot be overlooked.

De Bruijn et al. (2009) affirmed that mobile phones are not just tools of communication but are also involved in complex practices of exchange and processes of acquisition, appropriation, abandonment, and selling that influence the phone's different meanings and role of mobility. Alexander (2008) noted that mobile phones come with many more features that not only support communication but also entertainment through music and video, they help one to manage time through the calendar function, and they help to store documents. He also said that mobile phones have recently gained a greater recognition in mobile banking as well as in the stock market business. According to Hanz (2011), mobile phones are used almost in every activity of a business, particularly in developing nations where access to mobile phones is higher than access to computers. He argued that mobile phones can be used to advertise, enhance communication, and share ideas amongst employees. Internet enabled phones can even be used as a source of information on how best to handle challenges the business goes through, as well as how to better manage the resources of the business to achieve

highest output. "Mobile Phones in Business" (2010) on the other hand noted the increasing use of mobile phones in payment of goods and services. Mobile phones also reduce the time consumed when performing different business processes since they reduce the movements one needs to make from one point to the other (Huurdean, 2003).

The other important part of this study is the microenterprise. Two themes about microenterprises are relevant to this study. First, there are more microenterprises in the developing world than any other kind of non-farm business (Donner, 2006). Although it is difficult to give precise numbers since most of these businesses are informal, it is estimated that about 25% of Kenyans derive their livelihood from microenterprises. Indeed, small and medium enterprises are identified as the key engine of economic growth and job creation in Kenya's Vision 2030 (Government of Kenya [GOK], 2007). Secondly, among the economic development practitioners and government policymakers, there is enthusiasm surrounding the potential of mobile phone in particular and ICTs in general, to increase the productivity and vitality of the microenterprise segment (Barton & Bear, 1999). Given the vast number of households involved in the segment, and given the seemingly intractable persistence of poverty in which many of these households find themselves, this hope for a transformational power of the mobile phone is understandable. For example, stories abound of rural artisans (United Nations Development Programme [UNDP], 2005) using the Internet phones to sell products to American suburbanites, and of farmers using text messages to check crop prices (King, 2004).

The study took its sample from the microenterprise customers of Safaricom's *Zidisha Biashara* programme. According to publicly available marketing collateral from Safaricom, *Zidisha Biashara*, which is Swahili for "grow your business" is a package of bundled voice and data propositions aimed at assisting Safaricom's small business customers increase revenue, advertise,

increase availability, and reduce the cost of business by investing in the right technology; thus providing a total communication solution. *Zidisha Biashara's* key value propositions include: discounted voice, SMS and data, special network features like call hunting and bundle sharing, a hosted website and *Kuza Biashara* capacity building forums (Safaricom, 2011a).

Statement of the Problem

From the background of the study above, several advantages of the mobile phone have been identified. Although there is a general sense of application areas for mobile phones in business environments, little is known about the requirements to enhance business processes, about the actual implications of mobile phones, or about how to measure the impacts. Such knowledge is important, however, for a realistic determination of opportunities and requirements presented by the mobile phone.

The study therefore seeks to describe the extent of impact, or lack of it, that the mobile phone has had on the growth of one of the most important segments of the economy—microenterprises.

There are several antagonists in this debate and a few of them are presented here. De Bruijn et al. (2009) argued that the mobile phone, like other technology goods, keeps changing with time. They put across the point that though we may be satisfied that the use of phones in business enhances growth, it may only have a beneficial value at present time. Since people move with technology, in case the technology shifts to a course that slightly deviates from business promotion, then the use of phones in business will likely decline. From this argument, we can deduce that the use of mobile phones at present promotes business but in the future this benefit is likely to be altered.

Shinder (2007) on the other hand explained that the use of mobile phones only promotes small businesses who have a limited market geography. When it comes to widespread markets, phones cannot be depended on and in case that is done,

the business is likely to suffer consequences. She added that in large businesses, alternative methods of performing business services are important; an instance given is the use of SMS to order for goods or make purchases. It is only best applied when small businesses are involved. In a large business, hard copy orders or faxes need to be provided for any transaction to be cleared. Mobile telephones therefore have this inadequacy, which may affect the profitability of the enterprise. Walkup and McKee (2011), in supporting the idea that mobile phones have limitations, argued that the use of mobile phone while striking a business deal with a client or when advertising to a listening customer can be very frustrating due to network fluctuations during the conversation. They also mentioned that mobile phones are not installed with better dictionary programs and, therefore, when used in sending texting messages they can look unofficial and would scare away potential clients.

Other writers like Hanz (2011) also acknowledged the importance of mobile phones in business as to increasing revenues, customer loyalty, as well as enhance business growth. However, some authors like De Maagd and Moore (2009) had a totally different opinion by asserting that in the short term mobile phones decrease productivity while in the long term they increase or reduce, depending on the country—whether developing or developed. They wrote that in developing countries mobile phone usage does not lead to any significant improvement in production.

These varied opinions on whether the use of mobile phones promotes business growth was therefore the justification for this study. The study aimed at addressing this gap, specifically revealing whether the use of mobile phones by microenterprises in Kenya has led to the growth of these businesses.

Objectives

The general objective of the study was to establish if and to what extent the use of mobile phones enhances the growth of microenterprises. In the study, growth was measured by (though not

limited to) increase in income, profitability, and customer base. To be able to achieve this, the study focused on the following specific objectives;

1. to establish whether the usage of mobile phones has impacted on the income of microenterprises;
2. to establish whether the usage of mobile phones has impacted on the profitability of microenterprises; and
3. to find out how mobile phone use affects the customer base among the microenterprises.

Scope and Limitation of the Study

The study focused on microenterprises and not enterprises or businesses in general. Several factors led to the selection of this area of study. First, microenterprises lack the conventional means of communication available to larger companies such as fixed line telephony, facsimile, internet through computers, and call centers. Second, most microenterprises do not have formal business premises, or they operate from premises that are sometimes remote to be used as an office or shop front. Third, some of these enterprises do not have a fixed timeframe of operation or a fixed location and therefore the only better way with which they can be reached is through the mobile phone. Fourth, most microenterprises operate on very limited finances which may not buy them better communication and marketing tools. They may also not be able to afford the cost for diverse advertising methods; hence the only better method at their disposal remains the use of mobile phone. Lastly, a large part of the customers of these microenterprises share a similar fate and are only accessible through mobile phones. The study therefore limits itself to microenterprises for these reasons.

The choice of Safaricom's Zidisha Biashara customers was due to the need to provide detailed insights by studying a group with a much deeper engagement with the mobile phone. The researchers worked for Safaricom Limited at the time of the study and this made access to data

easier. However, the researchers were not in any way involved in the development, operations, or marketing of the *Zidisha Biashara* product; hence, the risk of personal bias was minimal in the study.

LITERATURE REVIEW & CONCEPTUAL FRAMEWORK

Introduction and Context

This literature review, by no means exhaustive, aims to establish context to the study by considering the existing literature that is related to the relationship of mobile phones usage with businesses growth, specifically on microenterprises. The objective here was to understand to what extent the use of mobile phone can influence the growth of a microenterprise. Since growth is measured based on (but not limited to) income, profits, and customer base of a business over time, they are the variables that the literature review dwells on.

As discussed in the previous chapter, this study focuses on microenterprises and not large and medium enterprises. The industry-standard definition of microenterprise adopted in this study is a firm with five or fewer employees (Severens & Kays, 1997). To make it relevant to a Kenyan setting, microenterprises are further defined to include more broad categories. According to Donner (2005), in African urban areas, microenterprises include trading stalls and retail stores, small manufacturers, transport providers, and services such as tailors and plumbers. In rural areas, microenterprises are both agricultural and non-agricultural. The degree of permanence, productivity, and formality varies considerably between micro-entrepreneurs. Indeed, some are 'entrepreneurial', growing, firms with skilled owners and productive business models (Duncombe & Heeks, 2001), but the majority are simply self-employed and often struggling to get by, and will never grow their businesses into larger enterprises (Mead & Leidholm, 1998). Barriers to starting these enterprises are generally

low, thus households or individuals may engage in more than one microenterprise, or may use a microenterprise to augment or temporarily replace wage salaries. Nevertheless, even if the majority of microenterprises are not sources for phenomenal growth, any gains in productivity, profitability, and even basic stability are of the utmost importance to the livelihoods of the households involved.

Influence of the Mobile Phone on the Income of a Microenterprise

Mobile Phones in Agricultural Microenterprises

Agriculture is the mainstay of the Kenyan economy, representing 24% of GDP with about five million smallholders engaged in different types of agricultural activities in the country (GOK, 2007). Any little transformation in how mobile phones can improve agriculture will therefore have a significant impact to the country. According to One (2009), new efforts in Kenya of using cell technology to enhance profitability of rural farmers have been introduced to take advantage of the available potential. For instance, the Kenya Agricultural Commodity Exchange (KACE) linked up with Safaricom, a mobile operator, to equip farmers with up-to-date commodities information to facilitate price discovery, improve market transparency, efficiency, and increase liquidity in commodity markets—linking farmers to input and output markets more profitably (Mukhebi & Kundu, 2009). At a rate of US\$0.20 (Ksh. 15), farmers can access commodity prices at markets throughout Kenya, allowing them to reduce transaction costs and bypass middlemen, who often charge below-market rates. Sullivan (2007) estimated that farmers and fishermen can make an extra 10% to 20% in profits from their goods through the use of mobile phones.

There is an emerging body of literature that assesses the role of information technology on market efficiency in developing countries, primarily in agricultural markets (Abraham,

2008). For example, fishermen in India call markets while still at the sea port in order to acquire the best possible price for their catch and then take that catch to the best market agent in terms of price. They are able to maximize their profit while also minimizing the risk that the market is flooded with too many fish upon their return from sea, reducing prices through over-supply (Abraham, 2008).

Use of mobile phones by small traders and self-employed artisans

Small traders and self-employed artisans are prevalent in all Kenyan urban and rural areas and are found in literally all sectors of the economy. They include shopkeepers, market stall vendors, hawkers, “boda-boda” taxi operators, and semi-professional artisans like electricians, plumbers, and carpenters to name just but a few. The degree of permanence, productivity, and formality varies considerably with some operating full-time and other working in the evening and weekends to supplement wages (Duncombe & Heeks, 2001). Given that most of these have no permanent location by way of a shop-front or office, they can only be contacted using a mobile phone. For example, in Nairobi, there are numerous signs and posters often fixed on trees and electricity posts advertising plumbers, electrician, drivers, cleaners, and so forth with a mobile number indicated. In the absence of a mobile phone, these artisan had to wait at a specific place where customer would come to contact them. Often their day would be wasted and there was a limited way of customers discovering them. The mobile phone has empowered them to become mobile workers as they can be reached anytime allowing them time to perform other duties at home while not on assignment.

Reilly (2007) provided an African example of South Africa where 62% of small businesses claimed higher earnings, thanks to the utilization of cell phones. A Kenyan perspective is provided in the findings on this research.

Creation of New Income Opportunities

According to Khattab (2010), mobile phones facilitate new business connections especially in microenterprises. Zaphiri and Ang (2009) quoted an interesting example of how one businesswoman used her mobile phone to enhance her business operations:

The New York Times in 2005 reported on an illiterate woman living on the Congo River, who asked her customers to call her on her mobile phone if they wanted to buy fresh fish. She does not have electricity; she cannot put the fish in the freezer, so she keeps them in the river, tethered live on a string, until she is called on her mobile phone. Then she retrieves them and prepares them for sale. (p. 12)

Use of Mobile Money to Receive Payments

Since 2005, mobile financial applications (known as “mobile-money” or “mobile-banking”) have emerged in many developing countries (Aker, 2010). The systems usually involve a set of applications that facilitate a variety of financial transactions via the mobile phone, including local and international money transfers, paying bills, buying goods, and buying airtime credit (De Bruijn et al., 2009). Different institutional and business models provide these services.

Kenya has been the global trailblazer in mobile money, thanks to *M-Pesa*, the award winning service from Safaricom. *M-Pesa*, which when loosely translated means mobile money, today forms a critical part of the economic value chain in Kenya and had more than 13.8 million subscribers supported by a nationwide agent network of over 24,000 outlets (Safaricom Annual Report, 2011b). *M-Pesa* and other m-money systems have recently transitioned from a pure money transfer system to a payment platform that allows NGOs, companies, schools, hospitals, and small businesses to send and receive payments.

What are the implications of mobile money systems on the economic empowerment of microenterprises in Kenya? Stories abound in

local and international press on how mobile money in general and *M-Pesa* in particular has transformed businesses in Kenya. Since most microenterprises accept *M-Pesa* as a payment method, it has created a whole new market place to offer services especially where there is no need to meet the client face to face such as on-line services, booking tickets, and carrying out repairs. A variety of qualitative studies have provided some insights into the characteristics, patterns, and potential impacts of *M-Pesa* usage. For example, Morawczynski and Pickens (2009) found that users often keep a balance on their *M-Pesa* accounts, thereby using the system as a rudimentary bank account. *M-Pesa* users also send smaller but more frequent remittances, suggesting that the system might allow informal insurance networks to function more effectively.

Deleon (2004) explained that mobile payments (using mobile phones to pay for transactions) is one of the easiest and most secure ways of performing transactions as compared to hard cash method. Since the customer carries virtual money in the mobile phone, they are, therefore, likely to do an impulse buying whenever he/she comes across an item that impresses him/her. Similarly, small business owners can receive payments from customers in the form of mobile money, creating flexibility and the potential for greater income (Reilly, 2007).

The downside of the use of mobile money in business transactions include failed transactions due to system congestion or unavailability, inability to get help from the service providers, and electronic 'float' shortages. Because mobile-money uses the same data channel as text messages, it often becomes congested at peak texting times. As a result, some transactions fail. When this happens, the agent calls the service provider's customer support for the customer. However, because of the high volume of calls, it can take for the agents several hours to get through. This sometimes makes failed transactions difficult to resolve (Morawczynski & Pickens, 2009).

Microenterprises in the Mobile Phone Industry

Microenterprises are not the only ones that use mobile phones, but also those that deal in mobile phone related businesses (Esselaar, Stork, Ndiwalana, & Dean-Swarray, 2007). Richardson, Ramirez, and Haq (2000) carried out a study of the Grameen Village Phone, the globally acclaimed initiative of Nobel Laureate Professor Muhammad Yunus, in Bangladesh. No discussion on mobile phones and microenterprise is complete without a mention of the Grameen Village Phone project with its financial and technology model that empowers thousands of women entrepreneurs to act as "phone ladies" in their villages (Richardson et al., 2000). Sullivan (2007) concurred that mobile phones provide opportunities to create new businesses based around mobile phone services. To support these, he also gave the example of "village phones ladies" in Bangladesh where women take micro loans to purchase mobile phones and then sell minutes of cell usage to fellow villagers in order to pay back the microloan and eventually make a profit. Cell phones allow village entrepreneurs to earn a significant income while also providing a social good to their hometowns (Reilly, 2007).

Closer home in Kenya, Safaricom estimates that there are over 50,000 enterprises selling its products and services countrywide. This includes airtime cards, phones, community phone services (Simu Ya Jamii) and *M-Pesa* services (Safaricom, 201ab).

Influence of the Mobile Phones on the Profitability of a Microenterprise

The two variables used to define profitability are income (which is the subject of the preceding part of this literature review) and costs. Increase in income and reduction in costs increases profits. This section of the literature reviewed focuses on how mobile phone can help reduce business costs.

Mobile Phones as a Source of Business Information

Mobile phones act as a source of information for their users. This is achieved either through mobile internet, listening to the radio (available on most mobile phones), SMS information services, or just by placing a call or SMS to a friend to make an enquiry about something, thereby enhancing the knowledge of the microenterprise about a given variable. Through this information a business are able to gain tips on best practices and process improvements required to obtain better returns at the lowest costs possible. Mobile phones that can access internet services are in a better position to equip a microenterprise owner with the necessary information on how he or she can cut on the operational expenses to increase returns as well as the quality of the output (Dahlberg, Mallat, Ondrus, & Zmijewska, 2006).

According to CCK (2011) Sector Statistics, there were 4.3 million internet subscriptions in Kenya, of which 98% are mobile internet (i.e. use of a mobile phone to access the internet). With the mobile phone becoming the primary access to the internet, this presents a big opportunity for microenterprises to access information and conduct marketing, buying, and selling transactions online.

Improved Internal Communications within the Microenterprise

Operations in a microenterprise are not as complicated as in larger organisations. They mostly comprise the simple processes of getting raw materials from different sources, the conversion of the raw materials into finished products as well as the dispensing of the products to the end customer for cash. Khattab (2010) noted that mobile phones have been applied in microenterprises to enhance internal communications, which in turn increases operational efficiency. Communication strengthens the relationship between employees and the owner, thereby creating harmony in the activities that the enterprise deals in. This harmonious co-existence creates a good organisation culture, hence, well-coordinated

processes and operations. The use of mobile phones in enterprises does not only enhance harmony, but also reduces the time taken to do certain processes. For instance, an SMS sent to all the employees of an enterprise addressing given issues saves time that would have been used to hold a meeting for the same. A simple call or SMS to customers informing them of the items on offer reduces the time that would have otherwise been taken in another form of advertisement (Jagun, Heeks, & Whalley, 2008).

Savings in Procurement and Transaction Costs

Esselaar et al. (2008), in their study on the usage of ICT on profitability in SMEs, found out that most of the enterprises used mobile phones in communication, ordering for supplies and deliveries, and in making transactions, which they something claimed was more affordable and to a great extent reduced the costs incurred on the same processes if another means were to be followed. This in turn reflects to profitability being enhanced since most of the cost cutting measures are put in place by the use of mobile phones.

Another study by Gebauer and Shaw (2004) focused on the use of mobiles phones on e-procurement. They noted that for each part of the procurement process (requesting, approval, and receiving), the extent to which the mobile e-procurement system could support differed significantly. They concluded that poor mobile phone technology characteristics as perceived by the potential users have inhibited actual adoption of mobile e-procurement especially by small business. The most significant factors were screen and keyboard size, set up and login procedures, and training and support. However, they also found that users valued two things mostly: notifications, in particular in connection with high mobility, and support for simple activities, including tracking, as opposed to handling more complex procurement processes online.

There is no evidence of widespread adoption of mobile e-procurement in Kenya especially by microenterprises. This may indicate a possible

opportunity for the ICT developer community to close this gap.

Savings in Travel Costs

Mobile phones have had a significant impact on saving travel time and costs for both individuals and businesses. Souter, Scott, Garforth, Jain, Mascarenhas, & McKemey (2005) assessed the impact of telephones on the livelihoods of low-income rural communities in Mozambique, Tanzania, and Gujarat (India). Although his finding pointed to mixed impacts on income generation, there were notable benefits coming from saving travel time, travel costs, and postage costs. The mobile phone dramatically bridges the gap between buyers and sellers who may be located far away from each other. Orders can be made over the phone without the need for the customer to travel to the business. Similarly, the microenterprise can order for supplies to be replenished through the mobile phone.

Influence of Mobile Phones on the Customer Base of a Microenterprise

Mobile Phones on Marketing and Customer Relationship

Esselaar et al. (2008) argued that mobile phone is a very important tool in the maintenance of customer relationships. They mentioned that mobile phones are often used for keeping in contact with customers more than any other form of communication. They attributed this to availability of the mobile phone amongst most people and based on the fact that acquiring and maintaining a mobile phone is affordable. They found out that about 70% of small businesses in the sampled group of 13 African countries (used in their research) used the mobile phones to manage the relationship with their customers. Jagun et al. (2008) said that mobile phones saved customer's money and time by reducing the journeys they make to and from the points of purchase. This increased the level of attachment with the business that the customers felt.

At the micro level, one of the studies focused on the use of mobile phones by microenterprises in Kigali-Rwanda. It concluded that the mobile phone played a key role in enabling new business contacts and amplifying existing social relationships among the micro entrepreneurs (Donner, 2005). In a confirmation of the relationship between mobile phones and customer relations, Deleon (2004) concurred that mobile commerce enhances customer loyalty. It also avails first-hand information to customers since a marketer or an advertising officer can directly communicate with a customer who owns a mobile phone without having to go through a messenger. A common feature in Kenya is SMS advertising where large and small businesses regularly send SMS messages to their customer about their products and services. Microenterprises have widely adopted this and it is common for the local barber to send a reminder SMS messages when one is due for a haircut (Researchers' own experience). Other examples include insurance companies sending SMS reminders when your policy is due for renewal or hospitals and clinic sending reminder messages on the next appointment. These personalized messages have a positive impact on customer loyalty.

Shinder (2007) on the other hand explained that the use of mobile phones only promotes small businesses who have a limited geography of market. When it comes to spread market, phones cannot be depended on and in case that is done, the business is likely to suffer consequences. She added that in large businesses, alternative methods of performing business services are important; an instance given is the use of SMS to order for goods or make purchases. It is only best applied when small businesses are involved. In a large business, hard copy orders or faxes need to be provided for any transaction to be cleared.

Mobile phones and Customer Satisfaction

Mobile phones also enhance customer's buying pleasure by giving the customer the choice of looking for the information about a given commodity (either online via mobile Internet or

by enquiring from colleagues). CCK's (2011) Sector Statistics Report recorded that 6.63 billion minutes worth of calls and 740 million text messages were sent using mobile phones, a sign that the exchange of ideas both over the Internet and through voice/texts is very high in Kenya. After a customer has received the information from any of the said sources, he/she then makes informed decisions on what she/he needs to buy. This gives the customer the confidence of making a choice that he desires because he has sufficient information concerning it. This process also enhances customer satisfaction according to Sullivan (2007). Khattab (2010) acknowledged that the use of ICT gadgets like mobile phones has made the capture and management of customers in microenterprises more effective than it used to be.

Another common feature is the entrepreneur's use of phones to call/text customers to enquire how they were fairing or to send messages such as birthdays or New Year wishes or just reminding them of important events relating to the business.

Mobile Phones and Customer Segmentation

Customers of a microenterprise are normally few while the organization structure is also small. This creates an environment where the proprietor of the business can easily identify his customers and is therefore able to segment them according to customer loyalty. This can easily help the business reward the loyal customers without incurring much costs related to identifying them. Chandrasekar (2010) asserted that loyalties formed through mobile phones are hard to lose because contact between the customer and the business is maintained even if the customer relocates geographically. The customers can also easily identify the staff of the enterprise thereby creating a good relationship.

Mobile Phones and Customer Loyalty and Retention

Alampay (2009) confirmed that the mobile phone has a role to play in accelerating and deepening relationships that are still face-to-face

at their core. One (2009) also asserted that mobile phones have wiped out the need for middlemen between the producer and the customer, making the relationship closer. The removal of these relationship brokers improve the margins of the seller and gives the customer value for money, thereby, increasing satisfaction.

Being available by mobile phone allows customers to contact the entrepreneur anytime they have a problem or an inquiry concerning your business' products and services even if he or she does not have a physical office or shop front. This, apart from eliminating the cost of setting up an office, also enhances customer centricity in the business; thus increasing both customer attraction as well as retention.

Jagun et al. (2008) disagreed on the impact mobile phones have on the relationship of a businesses with its customers. They put forth the argument that face to face communication with a customer creates a better relationship than using a mobile phone. Jagun et al. (2008) discouraged owners of microenterprises from overdependence on mobile phones as a mode of attracting customers or building better customer relationship.

Conceptual Framework

Miles and Huberman (1994) defined a conceptual framework as a visual or written product, one that explains, either graphically or in narrative form, the main things to be studied—the key factors, concepts, or variables—and the presumed relationships among them. Based on the aforementioned information, the study explains the relationship of variables. This section shows that the use of mobile phones affects profitability, income, and customer base of a microenterprise thus affecting its growth.

Proposition and Hypothesis

Proposition

This study proposed that usage of mobile phones has positively influenced the growth of

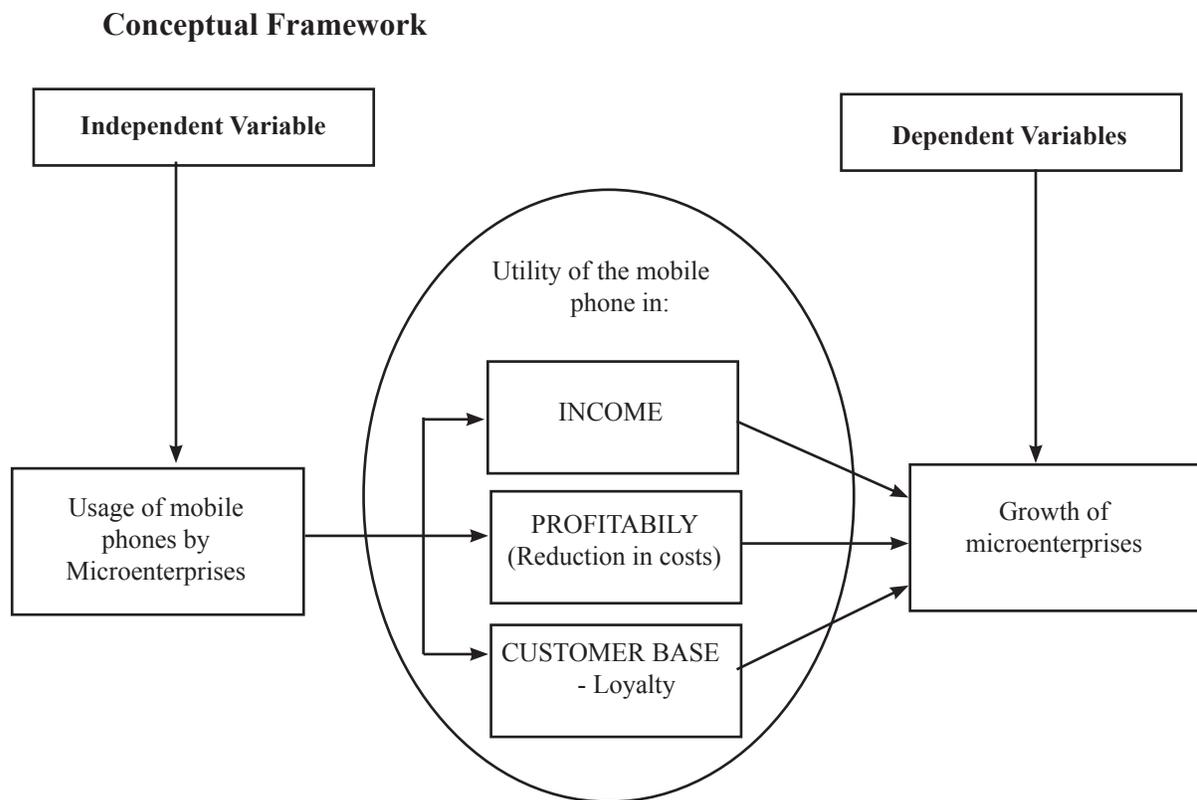


Figure 1. Conceptual framework.

microenterprises in Kenya. Growth in this context has been limited to three variables which are:

- income,
- profitability (costs reduction), and
- customer base.

The conceptual relationship in the Figure 1 presents a frame in which usage of mobile phones influences the income, profitability, and customer base of microenterprises, which are indicators of growth.

Hypothesis

The study therefore hypothesizes that: the use of a mobile phone has a significant influence on the growth of microenterprises. This relationship can be described by the following model:

$$Y = \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + c$$

Where:

Y= Growth of Microenterprise

X_1 = Income of the microenterprise

X_2 = Profitability of the microenterprise

X_3 =Customer base of the microenterprise

$\beta_1, \beta_2, \beta_3$ = Coefficients denoting extent of application and utility of the mobile phone within the microenterprise

c= Constant. This includes other contextual factors that affect the growth of a business such as economic factors, innovation, viability of sector, experience of the entrepreneur, among others

RESEARCH DESIGN AND METHODOLOGY

Research Design

This study adopted a descriptive research design. Kombrabail (2009) noted that descriptive

design has an objective of describing something. He added that descriptive studies are used to discover the relationship between certain variables. In the case of this study, we wanted to establish the relationship existing between mobile phone usage and business growth specifically for microenterprises.

McNabb (2010) wrote that descriptive design describes categories of qualitative information such as patterns of interaction when using technology in a given set up. She added that this design involves gathering data that describe events and then organizes, tabulates, depicts, and describes the data. This study established the pattern of interaction of mobile phones with growth of a microenterprise. The study evaluated the changes in the three variables; income, profitability, and customer base. This timeframe was informed by the fact that some of the microenterprises do not maintain formal books of accounts and the responses depended on the owners' memory of the performance of their business.

The Target Population and Sampling Technique

Target Population

The population for this study was a group of microenterprises from Safaricom's, *Zidisha Biashara* customers. The target population for this study is comprised of the 1,500 microenterprises from the *Zidisha Biashara* database that have an employee base of less than five, consistent to our definition of a microenterprise. The choice of this sampling frame was informed by the need to provide deep insights by studying a group with a much deeper engagement with the mobile phone.

Sampling Technique

This study used a sample of 100 microenterprises. The sample size was computed based on a population of 1,500 at a Confidence Level of 95% and a confidence interval of +/- 10%.

The study adopted purposeful sampling method. It was expected that this sample would be within the researchers' financial reach and that

it would present the study with conclusions that could be generalized for the population.

Data Collection Instruments

The instrument of collecting data that the study adopted was a questionnaire. McNabb (2008) asserted that questionnaires are the best data collection tools when the type of design used is descriptive design. He added that they are the best tools when collecting data from a large number of respondents or when the respondents are widely sparse. They are therefore best suited in this study as the main tool for collecting data. The questionnaires had closed ended questions to collect quantitative data. Both manual and online questionnaires were used.

Data Collection Procedures

We first obtained the *Zidisha Biashara* database to check the location and size of registered microenterprises across the general geography of Kenya. We then sought for permission from Safaricom to hold the study using this database. We then purposively identified the microenterprises that qualify for the study (the sample frame). We took advantage of regular forums organized for these customers to conduct a population sampling since as we are part of the organization.

Data Processing and Analysis

Descriptive statistics were used to analyze the data. Quantitative analysis was done and figures and tables were used to present the analyzed data. Inference statistics were used to establish and test the relationship between the variables. Specifically, regression analysis was used to test the alternative hypothesis "use of a mobile phone has a significant influence on the growth of microenterprises." Regression analysis (n.d.) is generally used for modeling and analyzing several variables, when the focus is on the relationship between a dependent variable and one or more independent variables.

PRESENTATION AND ANALYSIS OF FINDINGS

Introduction

The study targeted 200 respondents from Safaricom's *Zidisha Biashara* customers. Out of the 200, the study received 112 responses representing 56% response rate. Of the 112 responses, 31 responses were obtained from the online survey. This was from about 68 requests sent via email representing 45% response rate. The remaining 81 responses were obtained using manual questionnaires at two *Zidisha Biashara* forums on February 24, 2012 and March 9, 2012. The response rate from the forums was much higher due to the fact that the respondents filled and returned the questionnaires on the spot. Twelve responses were rejected either because the number of employees in the company exceeded five, the business had been in operation less than one year, the response was considered incomplete, or it was of poor quality.

General Information

The respondents were required to provide some general background information about their business in Part A of the questionnaires. This included their role in the business, nature of

the business, generic features supported by their mobile phones, and key business purposes for which they used the mobile phone. The findings are shown below.

Role of the Respondent in the Business

The results showed that majority of the respondents interviewed, as shown in Figure 2, were managers/employees (48%) while sole owners, partners, and directors represented 52%. This spread between managers/employees on the one hand and owners on the other was considered rich in providing broad perspectives on the influence of the mobile phone both from an operations and strategy points of view.

The nature of the business

On investigating the nature of businesses, the study reveals the results as shown in Figure 3.

Most (42%) of the businesses interviewed in this study were in the retail and trading sectors and about 36% of them were in professional services sector. The nature of retail and professional services means that they closely interact consumers hence they will have deeper insights on the use of mobile phone.

However, our concern was the low representation of the transportation and agriculture sectors in the responses. This means that they had not widely embraced the *Zidisha Biashara*

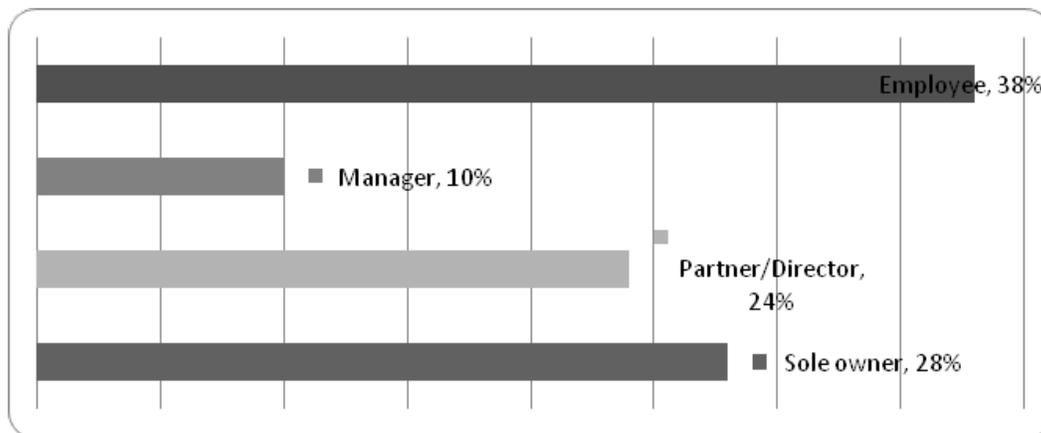


Figure 2. Role of respondents.

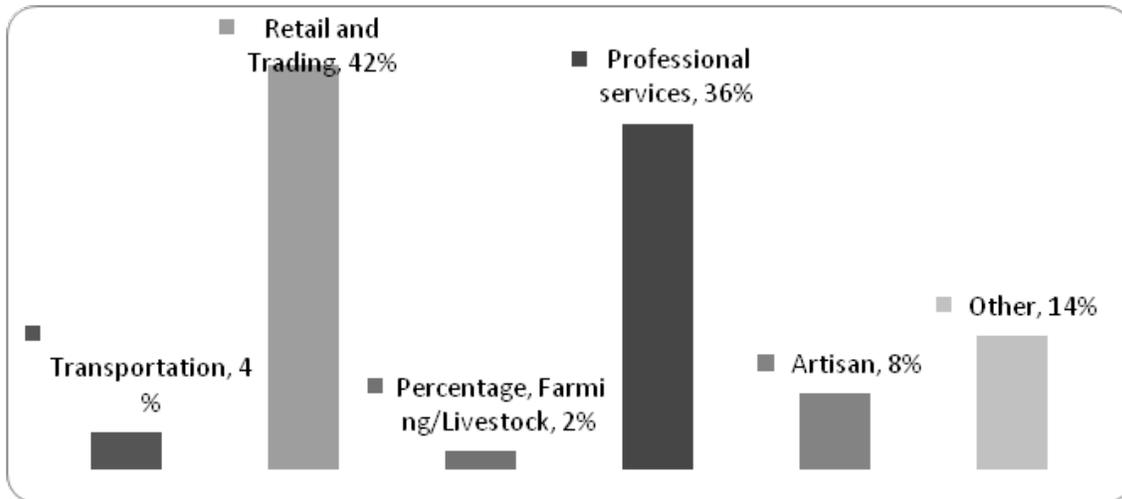


Figure 3. Nature of businesses.

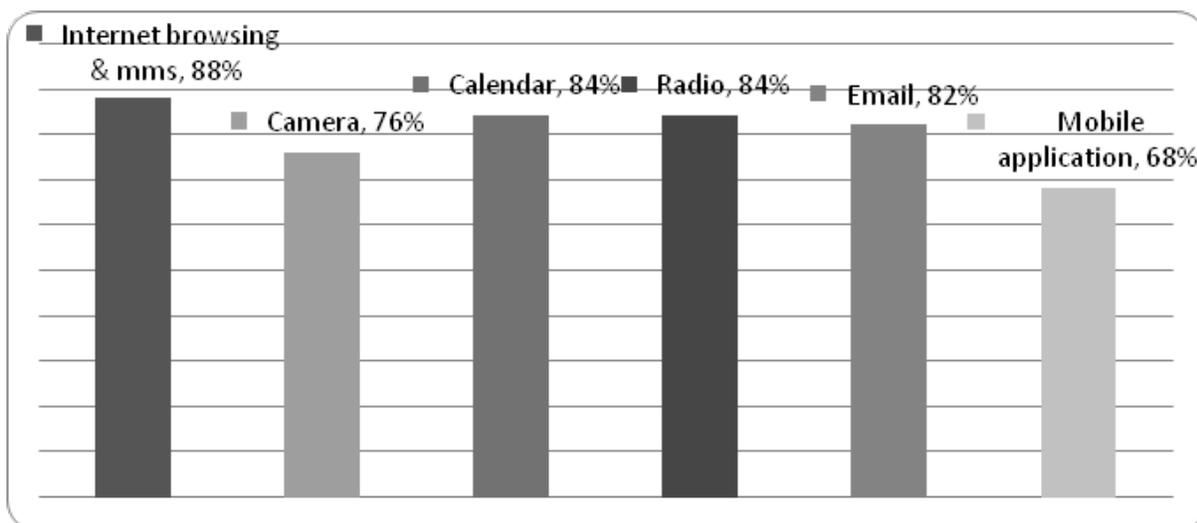


Figure 4. Features supported by mobile phones.

proposition compared to the other sectors. The study therefore recommends further investigations on the cause of this low uptake from these sectors and puts in place remedial measures by way of marketing or realigning the product to make more relevant to these sectors.

Features Supported in Mobile Phone

When questioned what features the respondent’s mobile phones supported, apart from voice calls

and short messaging service (SMS). The results are shown in Figure 4.

The results show that 88% of the respondents said that their phones support internet services and MMS while 82% of them supported email services. This is significant and reinforces CCK’s (2011) Sector Statistics that the mobile phone is becoming the primary access to the internet, and this presents a big opportunity for micro-entrepreneurs to access information

and conduct marketing, buying, and selling transactions online.

Eighty-four percent of the respondents said their phones supported calendar and radio, 76% had a camera, while 68% supported mobile applications. This explains the growing penetration of Smartphones that support more functions apart from just calling and messaging.

Business Uses of the Mobile Phone

Respondents were asked to identify the main business related activities for which they used their mobile phones. Figure 5 shows the results.

The highest number of respondents (80%) testified to using their phones as a medium of providing information to their customers. Seventy percent of the respondents used their mobile phones to simplify operation activities, 64% used it for marketing their

products, and 52% used it for determining customer satisfaction while 50% used it to reduce the costs incurred by the business. Few respondents (48%) used their mobile phones to receive customer payments for purchased products while 38% used their phones to make raw material purchases and bill settlements. These results demonstrate the increasing level of dependence on the mobile phone as business tool and enabler.

Influence of the Mobile Phone on Business Income

This section presents findings on the influence of mobile phones on the first independent variable in the study—income.

Mobile Phones Increase Business Income

To establish the overall experience of the respondents on the influence of mobile phones

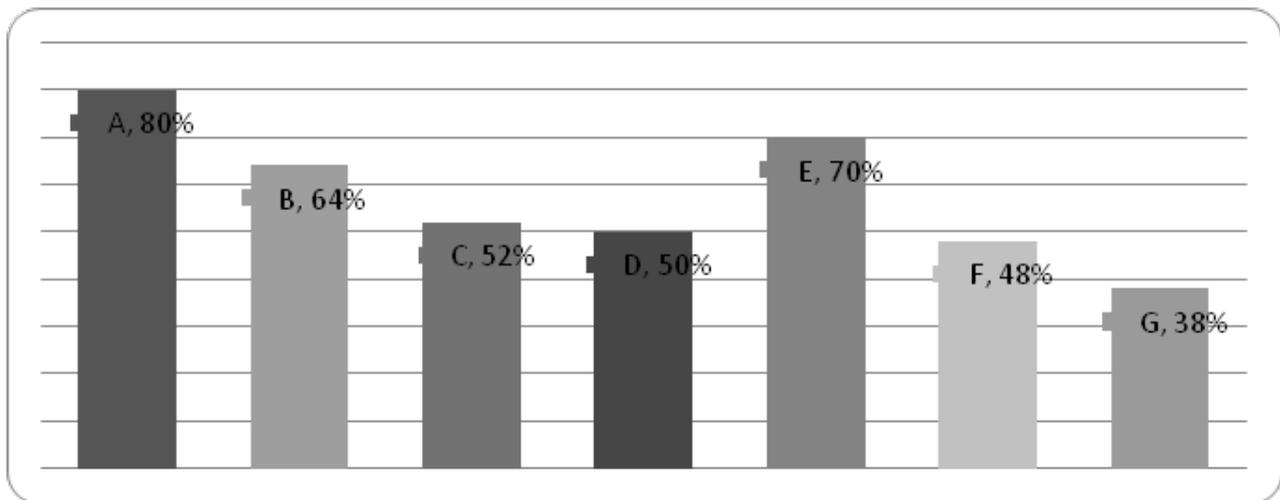


Figure 5. Business purpose of mobile phone.

Key

- A: Providing information to customers
- B: Marketing products
- C: Determining customer satisfaction
- D: Reducing costs
- E: Simplifying operational activities
- F: Receiving customer payments for products bought
- G: Purchasing raw materials and paying business bills

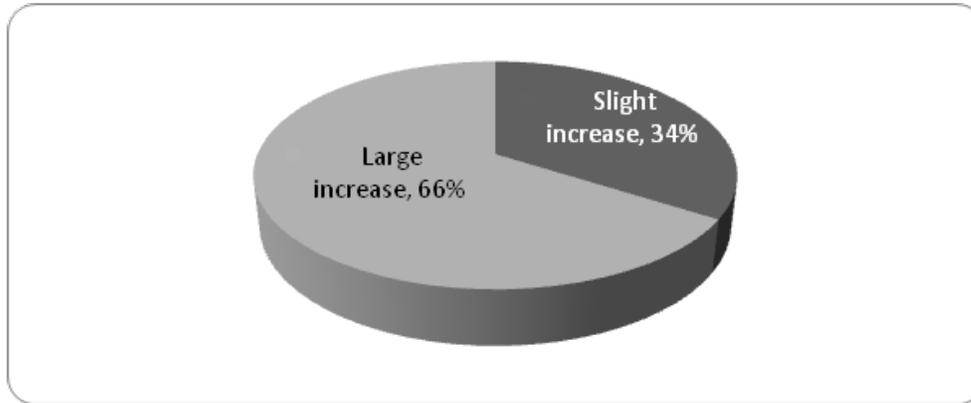


Figure 6. Effect of use of mobile phones on business income.

on business income over the last three years, a lead question asked them to rate the impact at five levels as follows:

- Large reduction > 20%,
- Small reduction 0-20%,
- No Change,
- Slight increase 0-20%, and
- Large Increase >20%.

The results are presented in Figure 6.

Overall, all of the respondents agreed that the use of the mobile phone led to an increase in income. A majority (66%) of the respondents agreed that the increase in income was significant at over 20%. The remaining 34% observed that the use of mobile phones increased income slightly, between 0% and 20%. This matches the argument by Reilly (2007) that through mobile phones, small business owners create flexibility and the potential for greater income.

Detailed Analysis of the Effects of Mobile Phones on Income

To drill down the impact on income, the study asked the respondents to rate the extent of influence on income across nine income drivers identified in the literature review as follows:

- a. Obtain new clients;
- b. Get better market prices for my product and services;

- c. Get better information for my product and services;
- d. Increased sales;
- e. Quicker turnover of my stocks;
- f. Obtain increased support from family or government;
- g. Information about new products and their use and application;
- h. Receive payments from customers in the form of mobile money such as *M-Pesa*; and
- i. SMS advertising enable business regularly send their customer messages about their products and services.

The respondents rated each of the income drivers above on a five point scale as follows:

- a. Not applicable,
- b. No influence,
- c. Small influence,
- d. Medium influence,
- e. Large influence.

The results obtained are shown in Figure 7.

The results showed that 50% of the respondents were of the view that the use of mobile phones had a large influence on the ability of the businesses to obtain new clients. This concurs with the argument that mobile phones facilitate new business connections in microenterprises (Khattab, 2010). Fifty-two percent of the respondents also agreed

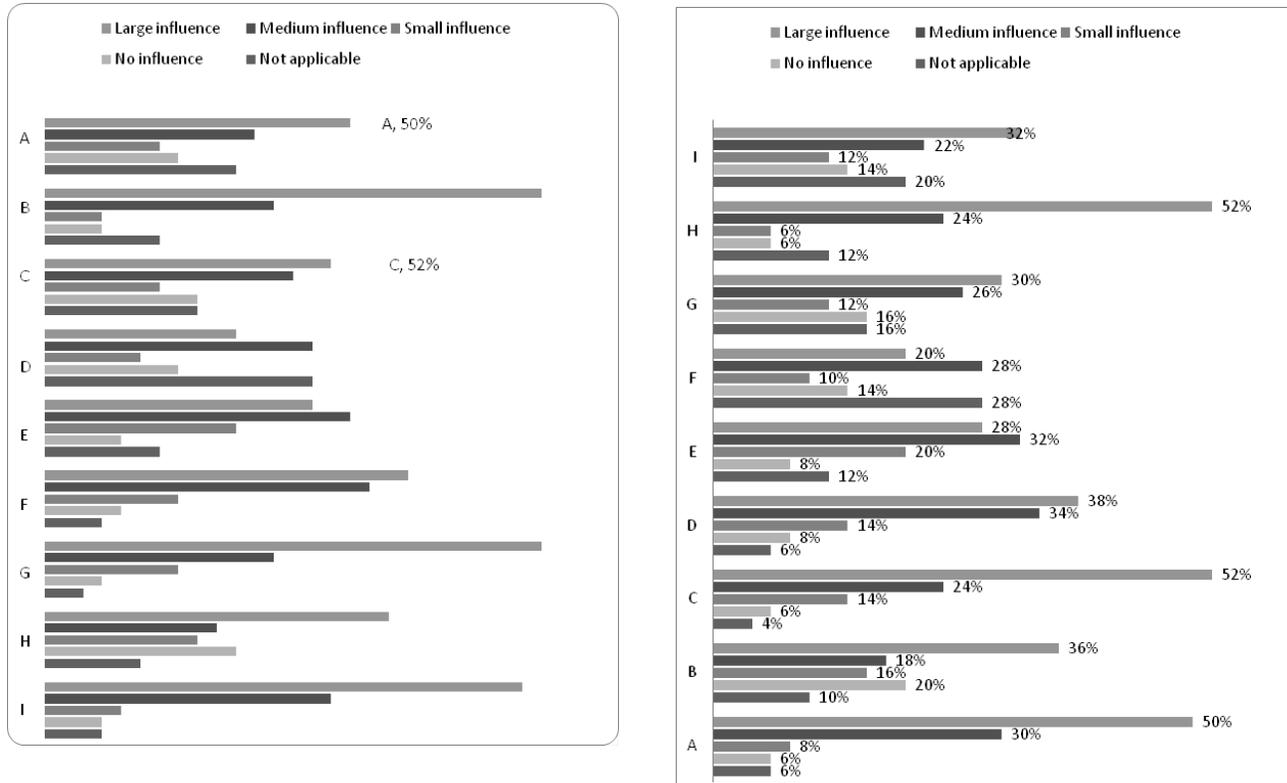


Figure 7. Influence of mobile phone on income.

Key

- A: Obtain new clients
- B: Get better market prices for my product and services
- C: Get better information for my product and services
- D: Increased sales
- E: Quicker turnover of my stocks
- F: Obtain increased support from family or government
- G: Information about new products and their use and application
- H: Receive payments from customers in the form of mobile money such as *M-Pesa*
- I: SMS advertising enable business regularly send their customer messages about their products and services

that the use of mobile phones greatly enhanced the ability of the businesses to get better information for their product and services. Another 52% agreed that mobile money services such as Safaricom’s *M-Pesa* had a large influence on income growth. This agrees with Reilly’s (2007) assertion that small business owners can receive payments from customers in the form of mobile money, creating flexibility and the potential for higher income.

Mobile phones have a large influence on the ability of the business to get better market prices for their product and services based on 36% of

the respondents who agreed with the statement. This concurs with the argument by Mukhebi and Kundu (2009) that mobile phones enabled farmer’s’ access to commodity prices at markets throughout Kenya, allowing them to reduce transaction costs and bypass middlemen, who often charge below-market rates.

Concerning whether mobile phones influenced increase in sales, 38% said that the influence was large while 34% said it influenced to a medium level. These results concur with Waldrop (2010) in his argument that mobile phones

helps a business cut on costs, increase sales, and provide superior customer service that increases revenue.

On the other income drivers where the mobile phone had a large influence—information about new products and their use and application—was supported by 30% of the respondents; SMS advertising to enable business regularly send their customer messages about their products and services was supported by 32% of the respondents.

The findings above provide a good case study on Kenya and are in line with Reilly's (2007) findings from South Africa where 62% of small business claimed higher earnings thanks to the utilization of the cell phone.

It is however noted that usage of mobile phones had a relatively low influence on the ability of the business owners to obtain increased support from family and government as well as on enhancing quicker turnover of stock with a 28% and 32% of the respondents support respectively.

Influence of the Use of Mobile Phones on Profitability

This section presents the findings on the influence of mobile phones on the second independent variable in the study—profitability.

Mobile Phones Increase Profitability

To establish the overall experience of the respondents on the influence of mobile phones on business profitability over the last three years, the respondents were asked to rate the impact at five levels as follows:

- a. Large reduction > 20%,
- b. Small reduction 0-20%,
- c. No change,
- d. Slight increase 0-20%, and
- e. Large increase > 20%.

The results are presented in Figure 8 below.

On the influence of mobile phones on the profitability of their business, a significant 94% of the respondents said it led to an increase in profits. A majority (50%) of respondents said the increase was slight ranging from 0% to 20%. Another 44% said the increase in profitability was greater than 20%. Only 6% felt there was no change in their profitability.

The results below reinforce the findings by Esselaar et al. (2007) in their study on the impact of ICT on profitability of small businesses that most of these enterprises claimed the use of mobile phones was affordable and reduced the costs incurred on the same process if another means were to be followed. This in turn reflects

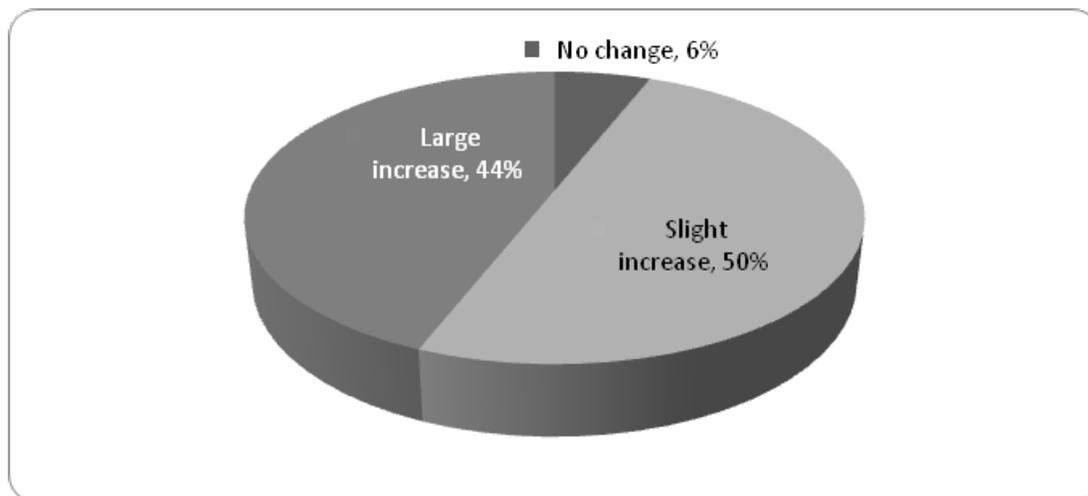


Figure 8. Influence of mobile phones on profitability.

to profitability being enhanced since most of the cost cutting measures are put in place by the use of mobile phones.

Detailed Analysis of the Effects of Mobile Phones on Profitability

To drill down on the impact on profitability, the study asked the respondents to rate the extent of influence across 11 profitability drivers identified in the literature review as follows:

- a. Reduced on costs of inputs;
- b. Reduced cost of travel;
- c. Increased speed of communication with customers and suppliers;
- d. Less time needed to make business arrangements;
- e. Ability to be contacted from anywhere, thus reducing time spent waiting for clients;
- f. Access to business information and tips through the internet and mobile radio;
- g. Faster access to market information thus saving on total transaction costs;
- h. Acquire more customers at lower cost, thus enhancing the profits;
- i. SMS information service that provide up to date information to facilitate price discovery and link them to input and output markets more profitably;
- j. Avoid middlemen thus increasing profits; and
- k. Inform customers of availability of goods and services through SMS that would have otherwise been taken in another form of advertisement.

The results are shown in Figure 9.

An overwhelming majority (82%) agreed that the use of mobile phones had a larger influence on increasing the speed of communication between customers and suppliers. A majority of 68% said that mobile phones influenced to a large extent the ability to be contacted from anywhere hence reducing the time spent waiting for clients. Indeed, this puts justification to Jagun,

Heeks and Whalley's (2008) findings that mobile phones saved customer's money and time by reducing the journeys they make to and from the points of purchase. Customers feel attached to the enterprises because they feel it ensures that they save time and money, thus they create a connection with them.

On the other profitability drivers, 58% of the respondents said that the use of mobile phones greatly reduced the cost of business travel. Fifty percent said the mobile phone had a large influence of the ability of the business to avoid middlemen and enhance profits. This collaborates Sullivan's (2007) estimate that farmers and fishermen can make an extra 10 to 20 percent profits from their goods by using mobile phones to bypass middlemen. Concerning the influence mobile phones have on time needed to make business arrangements, the study established that a majority (52%) of the respondents agreed that mobile phones have a large influence on the reduced time needed to make business arrangements.

In the middle scores, 40% of the respondents said that mobile phone had a large influence on lowering customer acquisition costs, thus enhancing the profits. This finding confirms the sentiments made by Chandrasekar (2010) that the use of mobile phones creates an environment where the proprietor of the business can easily identify his customers and therefore able to segment them according to customer loyalty. This can easily help the business reward the loyal customers without incurring much costs related to identifying them. Another 44% of the respondents agreed that mobile phones influenced, to a large extent, the ability to use SMS to send information to customers on the availability of goods and services. This reinforces Jagun et al.'s (2008) argument that a simple call or SMS to customers informing them of the items on offer reduces the time that would have otherwise been taken in another form of advertisement.

Low scores on influence were noted in the drivers as described hereunder. On the use of SMS information services to provide up to date information to facilitate price discovery and

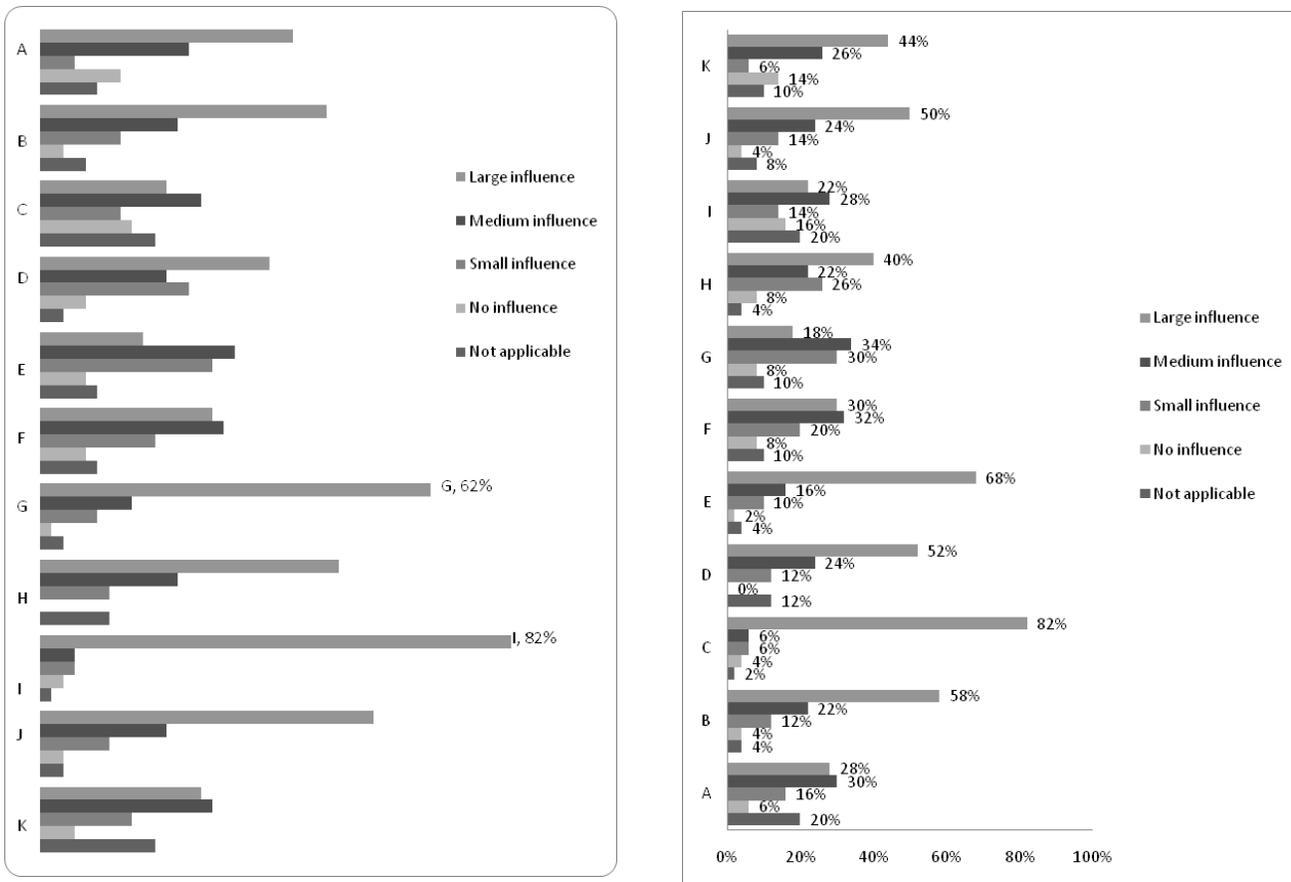


Figure 9. Influence of mobile phones on profitability.

Key

- A: reduced on costs of inputs
- B: reduced cost of travel
- C: SMS information service that provide up to date information to facilitate price discovery and link them to input and output markets more profitably
- D: less time needed to make business arrangement
- E: faster access market information thus saving on total transaction
- F: access to business information and tips through the internet and mobile radio
- G: ability to be contacted from anywhere, thus reducing time spent waiting for clients
- H: acquire more customers at lower cost, thus enhancing the profits
- I: increased speed of communication with customers and suppliers
- J: avoid middlemen thus increasing profits
- K: inform customers on availability of goods and services through SMS that would have otherwise been taken in another form of advertisement

link business to input and output markets more profitably, only 22% thought the influence was large. Mukhebi (2009) provided an example of the Kenya Agricultural Commodity Exchange (KACE), which is an SMS information service

that equips farmers with up-to-date commodities information to facilitate price discovery, improve market transparency/efficiency, increase liquidity in commodity markets, link farmers to input and output markets more profitably. We conclude

that this low score could be attributed to the poor representation of the agriculture sector in the respondents at only 2% as shown in Figure 3.

Another low 28% of the respondents agreed that the use of mobile phones had large influence in reducing the cost of inputs. Still, only 30% of the respondents thought that the mobile phone had large influence on the access to business information and tips through the Internet and mobile radio. These findings put strength in the findings presented by Dahlberg et al. (2006) that mobile phones also act as a source of information for their users. This is achieved either through mobile internet, listening to the radio, SMS information services, or just by placing a call or SMS to a friend to make an enquiry about something, thereby enhancing the entrepreneur's knowledge about a given variable.

The low scores noted on access to business information and tips, access to market information, and price discovery mechanisms present opportunities for the mobile phone companies and industry promoters to develop mobile applications relevant to microenterprises. A notable example in this regard is *iCow* (Kahumbu, 2011), the award winning mobile app developed by Su Kahumbu specifically for dairy farming and which has achieved good adoption in Kenya as well as

international reviews. It prompts farmers on vital days of the cows' gestation period, links farmers to the nearest vets and Artificial Insemination providers, collects and stores milk and breeding records, and sends farmers information on best dairy practices.

Influence of the Use of Mobile Phone on Customer Base

This section presents findings on the influence of mobile phones on third and last independent variable in the study—customer base.

Mobile Phones Enhances the Customer Base

To establish the overall experience of the respondents on the influence of mobile phones on the customer base over the last three years, a lead question asked them to rate the impact at five levels as follows:

- a. Large reduction > 20%,
- b. Small reduction 0-20%,
- c. No Change,
- d. Slight increase 0-20%, and
- e. Large Increase >20%.

The results are presented in Figure 10 below.

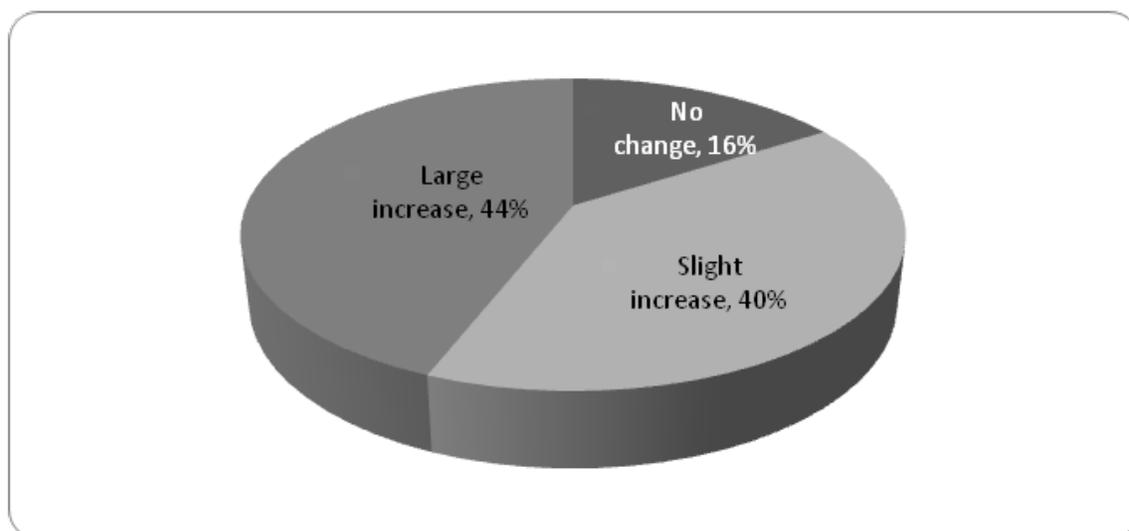


Figure 10. Impact of mobile phones on customer base.

On the influence of mobile phones on the customer base of their business, 84% of the respondents said it helped increase the customer base. A majority (44%) of the respondents agreed that the impact on customer base was a large (over 20%) increase while 40% agreed that mobile phones led to a slight increase in customer base (0-20% increase). This finding reinforces the one by Esselaar et al. (2007) who argued that mobile phone is a very important tool in the maintenance of customer relationships. They mentioned that mobile phones are used often for keeping in contact with customers and clients more than any other form of communication.

However, a significant 16% of the respondents thought that mobile phone had no influence on their customer base. It will be interesting to find out the reasons and this should be the subject of a further study.

Detailed Analysis of the of Influence of mobile Phones on Customer Base

To drill down the impact on customer base, the study asked the respondents to rate the extent of influence across seven drivers that enhance the customer base, which were identified in the literature review as follows:

- a. Obtain new business contacts;
- b. Enhanced frequency of contact with customers;
- c. Respond quickly to customer queries / complaints;
- d. Increases customer contact through SMS advertising and mobile marketing;
- e. Mobile phones are very important tool in maintenance of customer relationships compared to any other form of communication;
- f. Loyalties formed through mobile phones are hard to lose because contact between us and the customer is maintained even if the customer relocates geographically; and
- g. Allows customers to contact us anytime they have a problem or need to inquire, without physical visit to the shop or office.

The results are shown in the Figure 11.

Significantly, 82% of the respondents agreed that mobile phones had a large influence on the ability of their businesses to respond quickly to customer queries /complaints. Another 80% of the respondents agreed that mobile phones enhanced to a great extent the frequency of contact of the businesses with customers. This is in line with the argument made in “Mobile Phones in Business” (2010) that having a mobile phone allows customers to contact the entrepreneur anytime they have a problem or an inquiry concerning the business’ products/services even if he/she does not have a physical office or shop front. Another 74% of the respondents agreed that mobile phones had a large influence on the ability of customers to contact the business anytime they had a problem or needed to enquire something without physically visiting the premise of the business. These findings concur with those of Jagun et al. (2008) that mobile phones saved customer’s money and time by reducing the journeys they make to and from the points of purchase.

The results showed that 50% of the respondents agreed that the use of mobile phones have a large influence on obtaining new business contacts while 32% thought that the influence was medium. This finding is reinforced by Donner (2005) in his study of microenterprises in Kigali Rwanda that mobile phones played a key role in enabling new business contacts and amplifying existing social relationships among the micro entrepreneurs. A majority (44%) of the respondents also agreed that the use of mobile phones, to a greater extent, increased customer contact through SMS advertising and mobile marketing. Another 44% of the respondents agreed that mobile phones enhanced, to a greater extent, loyalties; hence, making it hard for businesses to lose customers because contact with the customer was maintained even in geographically far areas. This is supported by Chandrasekar (2010) who found that loyalties formed through mobile phones are hard to lose because contact between the customer and the seller is maintained even if the customer relocates geographically.

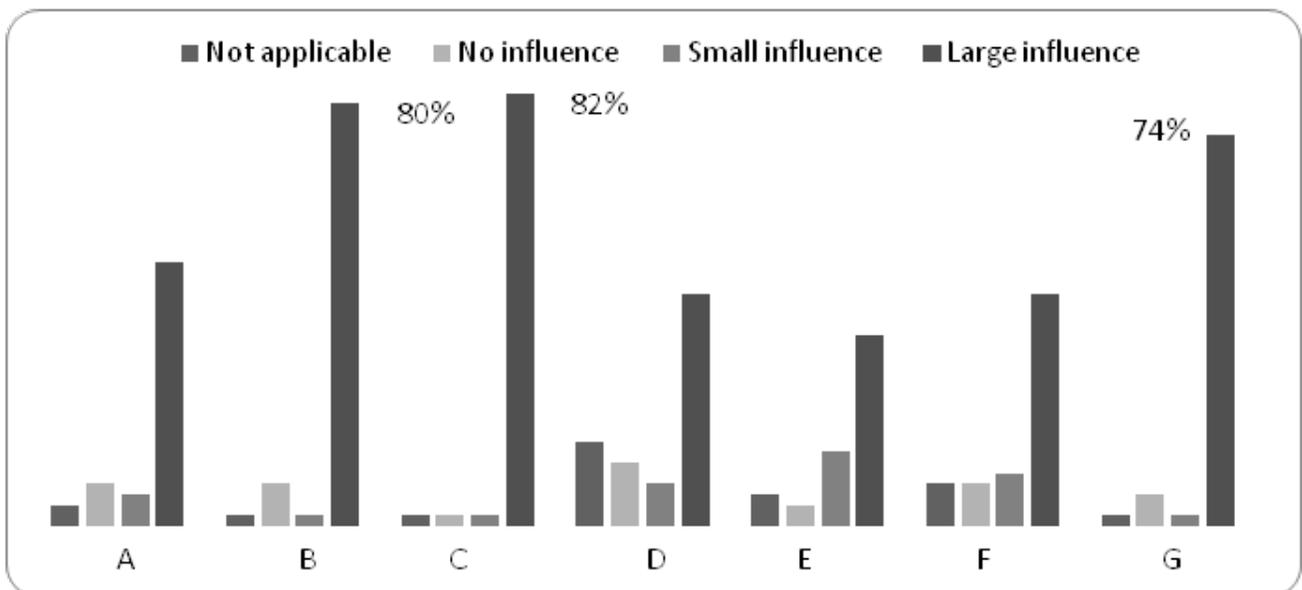
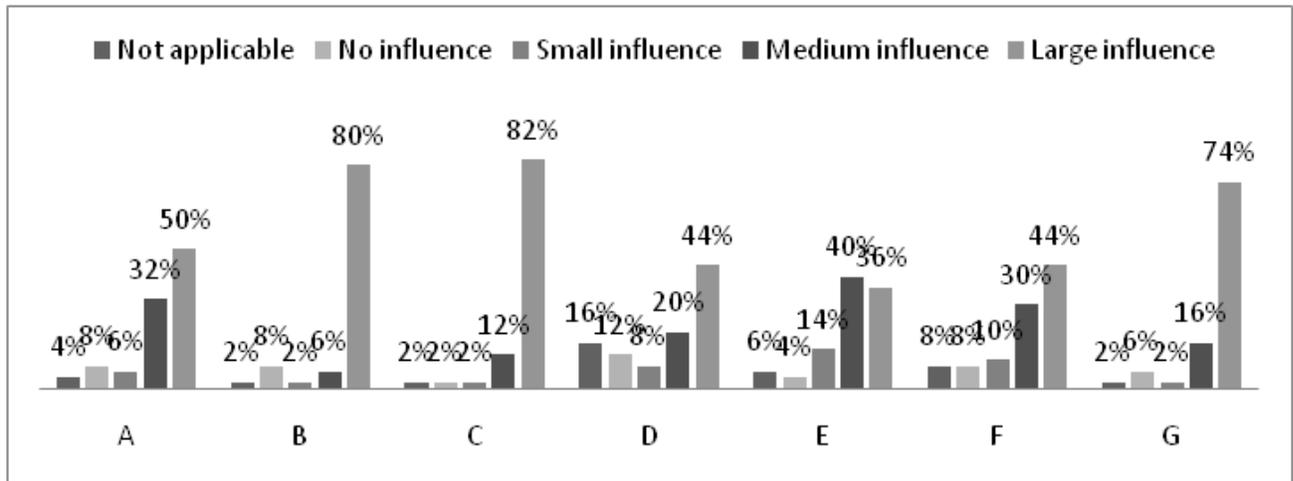


Figure 11. Influence of the Use of mobile phones on customer base.

Key

- A:** Obtain new business contacts
- B:** Enhanced frequency of contact of businesses to customers
- C:** Respond quickly to customer queries /complaints
- D:** Increases customer contact through SMS advertising and mobile marketing
- E:** Mobile phones are very important tool in maintenance of customer relationships compared to any other form of communication
- F:** Loyalties formed through mobile phones are hard to lose because contact between us and the customer is maintained even if the customer relocates geographically
- G:** Allows customers to contact us anytime they have a problem or need to inquire, without physical visit to the shop or office

A low score of 40% was noted when respondents were asked if the mobile phone had a large influence as tool for maintenance of customer relationships compared to other forms of communication. This present an opportunity for the mobile phone companies and industry promoters to develop mobile tools for customer relationship management suitable to microenterprises.

Relationship Between Dependent and Independent Variable

The independent variables X_1 , X_2 and X_3 (income, profitability, and customer base respectively) were regressed together against the dependent variable Y (growth). This was done

by arranging the frequencies arising from the sub-variables (the individual questions per each independent variable). The frequencies from the individual questions were grouped according to their strength in the Likert scale of 1 to 5, that is, frequencies under 1, 2, 3, 4, and 5 were each put separately. The scales were as follows; 1– Not applicable, 2 – No influence, 3 – Small influence, 4 – Medium Influence, and 5 – Large influence. This was done systematically for X_1 , X_2 , X_3 and the data fed into a statistical analysis package and then regressed. The results are included in the model summary of the regression equation in Table 1 below. Analysis of Variance (ANOVA) and a summary of the coefficients of the regression model are shown in Table 2 and 3 respectively.

Table 1.
Model Summary^b

Model	R	R square	Adjusted R square	Std. Error of the Estimate	Durbin-Watson
1	.838 ^a	.679	.847	.172	2.287

a. Predictors: (Constant), Income, Profitability, Customer base.

b. Dependent Variable: growth of microenterprises

Table 2.
ANOVA^b

Model	Sum of squares	df	Mean Square	F	Sig.	
1	Regression	4.480	4	1.12	12.380	.012 ^a
	Residual	.087	1	.087		
	Total	4.567	5			

a. Predictors: (Constant), Income, Profitability, Customer base

b. Dependent Variable: growth of microenterprises

Table 3.
Coefficients^a

Model	Unstandardized coefficients		Standardized coefficients	t	Sig.	
	B	Std. Error	Beta			
1	(Constant)	-14.032	7.602		-1.846	.078
	Income	.187	.095	.110	1.969	.031
	Profitability	2.042	1.416	.234	1.442	.142
	Customer base	4.214	2.634	.490	1.600	.162

a = growth of microenterprises

The results show that the relationship between the use of mobile phones in microenterprises and their impact on the income, profitability, and customer base is a positive value of 0.838. The R square shows that the independent variable can be explained by the dependent variables with 67.9% accuracy. The large R value means that to a significant extent, usage of mobile phones in microenterprises affect their income, profitability, and customer base.

The Durbin-Watson's value of 2.287 shows that the sample evidence, to a large extent, agrees with the proposition that the use of a mobile phone has a significant impact on the growth of microenterprises. When the Durbin-Watson's value is closer to 2, the sample results significantly favour the relationship of the variables (Chatterjee & Hadi, 2006).

From Table 2, the sum of squares value (4.480) shows that there was not much variation in the observed data of the study. In addition, the residual sum of squares reveals that there was minimal variation in the errors that arise when developing the regression model.

The degree of freedom is the number of independent observations in a sample data that are available to estimate a parameter of the population from which that sample is drawn. From the analysis of variance (Table 2), the value for the degree of freedom supports the fact that there are indeed a number of factors that do influence the growth of microenterprises and not exclusively the ones tested in this study.

F-statistic is a value resulting from a standard statistical test used in ANOVA and regression analysis is to determine if the variances between the means of two populations are significantly different. Practically, it is F-statistic that determines the statistical significance (P-value) and it is not used in the interpretation. From the Table 2, the statistical significance value (0.012) shows that there is no more than 1.2% probability of observing a result as extreme as that observed solely due to chance. Thus, it does suffice to say that the association between access and use of mobile phones and the growth

of microenterprises is considered statistically significant.

Table 3 shows the coefficients on each of the independent variable that affect a unit change in the dependent variable. The table shows that the use of mobile phones in microenterprises will induce a 0.187 change in growth for every unit of income provided that other variables are made constant. Similarly, it induces a 2.042 change in growth for every unit of profitability when other factors are constant. Consequently, the use of mobile phones in microenterprises is seen to induce a 4.214 unit's growth for every unit of customer base when other variables are made constant.

From the outputs above, the relationship of variables is presented in the model below:

$$Y = 0.187X_1 + 2.042X_2 + 4.214X_3 - 14.032$$

Where Y= Growth of Me; X_1 = Income; X_2 = Profitability; X_3 =Customer base

Or

Growth of Me = 0.187 income + 2.042 Profitability + 4.214 Customer base -14.032. (Me=microenterprise).

Effect of Absence of Mobile Phones on the Continuity of the Businesses

As a closing question, the respondents were asked what impact on the lack of access to, and use of the mobile phone to their businesses and the results were tabulated in Figure 12.

A majority (76%) of the respondents said that even with the lack of a mobile phone, their businesses will continue but with difficulties. This perfectly illustrates the deep entrenchment of the mobile phone as an indispensable business tool and enabler of growth. This concurs with the findings by Esselaar et al. (2007) that mobile phones play a significant role in the performance of businesses.

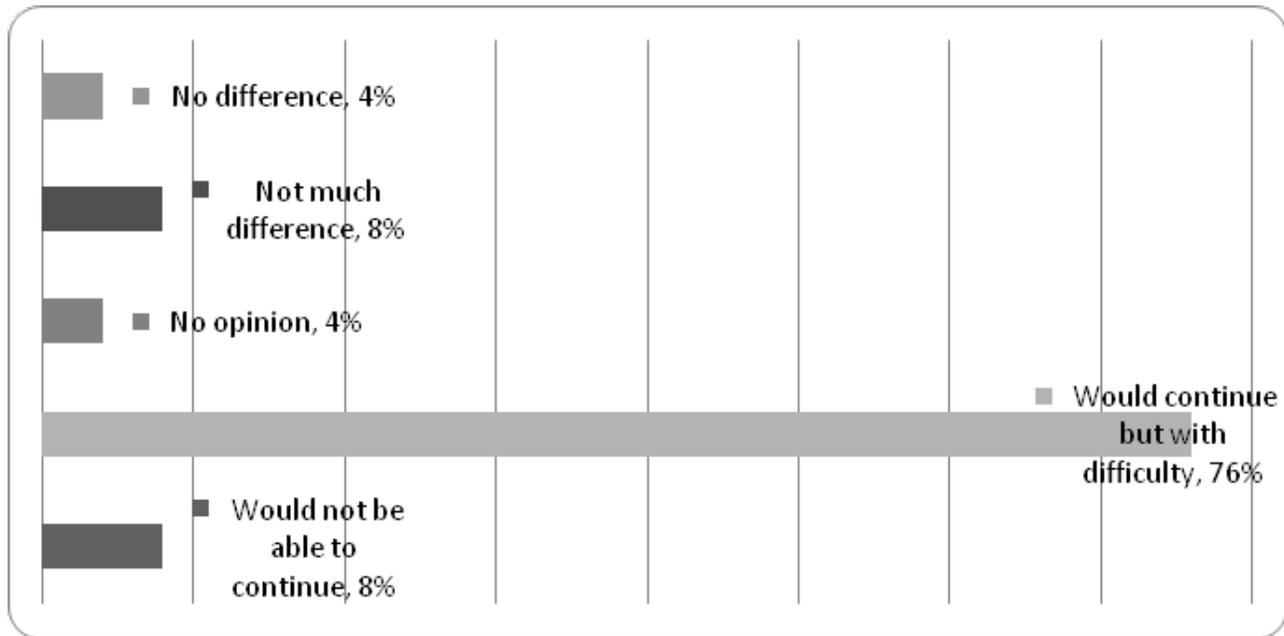


Figure 12. Effect of lack of access to and use of mobile phone.

CONCLUSION AND RECOMMENDATIONS

Summary of the Findings

Mobile Phones and Growth of Microenterprises

From the data in chapter four, 100%, 94% and 84% of the respondents said that the use of the mobile phone increased their income, profitability, and customer base, respectively. Since these three variables are used to explain growth in our study, and assuming equal weighting, we can therefore conclude from the average that 91.3% of the respondents believe that the use of mobile phones positively influences the growth of a microenterprise. Further, the findings show that a majority (76%) of the respondents said that lack of access to and use of mobile phones would see their business continue but with difficulties.

On the hypothesis that usage of a mobile phone has significant influence on the growth of microenterprises, the study fails to reject the null hypothesis. The study found out that the use of mobile phones has significant influence on the income, profitability, and customer base of microenterprises based on the positive

regression value of 0.838. The regression analysis also showed that the dependent variable (growth) can be explained (67.9%) by the independent variable (utility of the mobile phone in income, profitability, and customer base). The remaining 32.1% can be explained by other factors such as macroeconomic environment, viability of sector to which the microenterprise belongs, experience of the entrepreneur, among others.

Mobile Phones and Growth of Income of Microenterprises

Overall, all of the respondents agreed that the use of the mobile phone had led to an increase in income. On detailed analysis, the mobile phone had the highest prevalence of “large influence” (over 50% of the respondents agreeing) in the following drivers of income:

- ability to obtain new clients – 50%;
- ability to obtain information on products and service – 52%; and
- ability to receive payments from customers in the form of mobile money such as *M-Pesa* – 52%.

The mobile phone had the lowest prevalence of "large influence" (less than 30% of respondents agreeing) in the following two areas:

- a. Ability to obtain help from government or family – 20%; and
- b. Quicker turnover of stocks – 28%.

It should however be noted that some of the variations observed in the results above and in the next two sections are probably due to knowledge disparities on the part of the respondents given that some were the business owners and others were employees/managers and may therefore see the business from different perspectives.

Mobile Phones and Growth in Profitability of Microenterprises

Overall, 94% of the respondents agreed that the use of the mobile phone had led to an increase in profitability of their business. On detailed analysis the mobile phone had the "large influence" (over 50% of the respondents agreeing) in the following drivers of profitability:

- a. increased speed of communication with customers and suppliers – 82%;
- b. ability to be contacted from anywhere thus reducing time spent waiting for clients – 68%;
- c. reduced cost of travel – 58%;
- d. less time needed to make business arrangements – 52%; and
- e. avoid middlemen thus increasing profits – 50%.

The mobile phone had the lowest prevalence of "large influence" (less than 30% of respondents agreeing) in the following drivers of profitability:

- a. reduced cost of inputs – 28%; and
- b. SMS information service that provide up to date information to facilitate price discovery and link them to input and output markets more profitably – 22%.

Mobile Phones and Growth of Customer Base of Microenterprises

Overall, 84% of the respondents agreed that the use of the mobile phone had led to an increase in the customer base. On detailed analysis, the mobile phone had the highest level of "large influence" (over 50% of the respondents agreeing) in the following drivers of customer base:

- a. Obtain new business contacts – 50%;
- b. Enhanced frequency of contact of businesses to customers – 80%;
- c. Respond quickly to customer queries / complaints – 82%; and
- d. Allows customers to contact us anytime they have a problem or need to inquire something, without the need for a physical visit to the shop or office – 74%.

Conclusions

The study concludes that, holding other growth factors constant, the use of mobile phones has a significant influence on the growth of microenterprise. A "large influence" was found in all the three variables of growth used: income, profitability, and customer base.

In the summary of findings presented in the previous section we have identified the specific drivers of growth where the mobile phone has had the largest influence. The study has also identified areas of weaknesses and opportunities for improvement.

Recommendations

The study makes four recommendations. Firstly, promoters of microenterprises such as banks, the government, and NGO should incorporate the features and capabilities of the mobile phone as part of the tools they provide to support microenterprises. This includes, but not limited to, favorable taxation and regulation to enhance access, development of suitable platforms to avail business and market information, development of applications to support operations

of microenterprises, and disseminate industry best practices. These findings especially present an opportunity for the government to adopt the use of mobile phone channels in programmes that target microenterprises such as the Youth Enterprise Fund and the Women Enterprise Fund.

Secondly, mobile phone companies such as Safaricom should enable microenterprises to exploit the capabilities of the mobile phone through suitable product propositions, affordable tariffs, and training in mobile applications. The *Zidisha Basher* forums by Safaricom, while applauded as noble initiative, need to be expanded and enhanced to attract more microenterprises. Other operators need to develop similar propositions if they have not already done so.

Thirdly, owners and managers of microenterprises should incorporate a mobile phone strategy in their operations and explore innovative ways of using this handy gadget as a driver for the growth of the business. There are several opportunities identified in the study such as attracting new clients, obtaining market and product information, reduction in costs of travel, enhanced communication with customers, and the use of mobile money.

Lastly, the ICT community should develop mobile applications to support microenterprises in areas such as mobile advertising, mobile payment platforms, customer relationship management, and records management among others. The success of mobile applications such *M-Pesa* and *iCow*, which are both cited in this study, should be replicated in other business applications and sectors.

Recommendations for Further Study

The study recommended three areas for further study. Firstly, though the advantages of using mobile phones have been elaborated and are convincing, the study did not delve into the challenges of using mobile phones in microenterprises because it was beyond the scope of the study. The study therefore recommends a further study to identify these challenges and possibly opportunities.

Secondly, this study was limited to the influence of usage of mobile phones on microenterprise growth in general. While the influence was found to be positive, there is need to investigate if the relationship is more pronounced in certain business sectors than others. For example do microenterprises in say manufacturing derive the same advantages from the mobile phone as those in farming?

Thirdly, from the review of literature, Shinder (2007) asserted that the use of mobile phones only promotes small businesses who have a limited geography of market. This study did not investigate this issue further because it was outside the scope. This study therefore proposes that a further study be conducted to establish the relationship between the scale of a business and use of mobile phones to promote growth and by doing so establish why the disparity asserted exists if at all significant.

REFERENCES

- Abraham, R. (2008). Mobile phones and economic development: Evidence from the fishing industry in India. *Information Technologies and International Development Journal*, 4(1), 5-7.
- Alampay, E. (Ed.). (2009). *Living the information society in Asia*. Pasir Panjang: ISEAS Publishing.
- Alexander, M. (2008). *Importance of mobile phone in our daily life*. Retrieved on March, 22, 2012 from <http://ezinearticles.com/?Importance-of-Mobile-Phone-in-Our-Daily-Life&id=1349819>
- Barton, C., & Bear, M. (1999). *Information and communications technologies: Are they the key to viable business development services for micro and small enterprises?* Retrieved on March 22, 2012 from <http://www.mireda.org/DOCUMENTS/00499.pdf>
- Chandrasekar, S. (2010). *Marketing management: Text & cases*. New Delhi: Tata McGraw Hill.

- Chatterjee, S., & Hadi, S. (2006). *Regression analysis by example* (4th ed.). New Jersey: John Wiley & Sons.
- CIA World Factbook (2009). *Cell phone usage worldwide, by country*. Retrieved from <http://www.ciafactbook.com> on 15th February 2012.
- Communications Commission of Kenya [CCK]. (2010). *Quarterly sector statistics report – Apr-Jun 2010*. Retrieved from <http://www.cck.go.ke/resc/downloads> on January 14, 2012.
- Dahlberg, T., Mallat, N., Ondrus, J., Zmijewska, A. (2006). Mobile payment market and research - past, present and future (Proceedings of Helsinki Mobility Roundtable). *Sprouts: Working Papers on Information Systems*, 6(48). Retrieved from <http://sprouts.aisnet.org/6-48>
- DeMaagd, K., & Moore, S. (2009). *Mobile standards spillovers as a network of interactions*. Paper presented at the Telecommunications Policy and Research Conference, Washington, DC. Retrieved on February 15, 2012 from <https://www.msu.edu/~kdemaagd/research.html>
- De Bruijn, M., Nyamnjoh, F., & Angwafo, T. (2010). *Mobile interconnections: Reinterpreting distance, relating and difference in the Cameroonian Grassfields*. *Journal of African Media Studies*, 2(3), 267-285.
- Deleon, B. (2004). *Marketing on the go: Using mobile phones to promote and market your product or service*. Lauderdale, Florida: DGXmedia.
- Donner, J. (2005). *Use of Mobile phones by micro entrepreneurs in Kigali, Rwanda: Changes to social and business networks*. Location of publication: The Earth Institute at Columbia University.
- Donner, J. (2006). *Internet use (and non-use) among urban microenterprises in the developing world: An update from India*. Paper presented at Association of Internet Researchers 7.0 on September 1, 2006, at Brisbane, Australia.
- Duncombe, R., & Heeks, R. (2001). *Information and communication technologies and small enterprise in Africa: Lessons from Botswana*. Retrieved on February 15, 2012 from www.sed.manchester.ac.uk/idpm/research/is/ictsme/full/otherapp.doc
- Esselaar, S., Stork, C., Ndiwalana, A., & Deen-Swarray, M. (2007). ICT usage and its impact on profitability of SMEs in 13 African countries. *Information Technologies and International Development Journal*, 4(1), 87-100.
- Gebauer, J., & Shaw, M. (2004). Success factors and impacts of mobile business applications: Results from a mobile e-procurement study. *International Journal of Electronic Commerce*, 8(3). Retrieved on May 10th 2012 at https://netfiles.uiuc.edu/gebauer/www/IJEC_MobilePilotStudy.pdf
- Government of Kenya [GOK]. (2007). *Kenya vision 2030 – Towards a globally competitive and prosperous Kenya*. Retrieved on February 15, 2012 from <http://vision2030.go.ke/index.php/vision>
- Guffey, M., & Loewy, D. (2010). *Essentials of business communication* (8th ed.). Mason, OH.: South-Western Cengage Learning.
- Hanz, W. (2011). *The advantages of mobile phones in business*. Retrieved on February 15, 2012 from http://www.ehow.com/list_5744853_advantages-mobile-phones-business.html
- Hurdeman, A. (2003). *The worldwide history of telecommunications*. New Jersey: John Wiley & Sons, Inc.
- Jagun, A., Heeks, R., & Whalley, J. (2008). The impact of mobile telephony on developing country microenterprise: A Nigerian case study. *Journal of Information Technologies and International Development*, 4(4), 47-65.
- Kahumbu, S. (2011). *Snapshot results of impact study on farmers who joined iCow in June 2011*. Unpublished information retrieved on April 5, 2012 from www.icow.co.ke
- Khatab, S. (2010). *The use of mobile phone in promoting microenterprises' activities*. Paper presented at the European, Mediterranean & Middle Eastern Conference on Information

- Systems 2010 (EMCIS2010), April 12-13 2010, Abu Dhabi, UAE.
- King, B. (2004). *Text messaging empowers Kenyan farmers*. Retrieved on March 31, 2012 from http://www.interaction.org/ict/success_text_Kenya.htm
- King, W. (2011). Importance of communication in organization. Retrieved from <http://www.articleclick.com/Article/Importance-of-communication-in-organization/914799>
- Kenya National Bureau of Statistics. (2010). *Kenya 2009 population and housing census highlights*. Retrieved from <http://www.knbs.or.ke/Census%20Results/KNBS%20Brochure.pdf>
- Kombrabail, H. (2009). *Research designs*. TYBMS. Retrieved from <http://www.scribd.com/doc/18132239/Research-Design>
- Management Study Guide. (2011). *Components of communication process*. Retrieved on 5th April 2012 from <http://www.managementstudyguide.com/components-of-communication-process.htm>
- McNabb, C. (2010). *Descriptive research methodologies*. Retrieved on March 22, 2012 from <http://pangea.tec.selu.edu/~cmcnabb/philosop/power.ppt>
- McNabb, D. (2008). *Research methods in public administration and non-profit management: Quantitative and qualitative approaches* (2nd ed.). New York: M.E. Sharpe, Inc.
- Mead, D., & Leidholm, C. (1998). The dynamics of micro and small enterprises in developing countries. *World Development*, 26(1), 61-74.
- Miles, M., & Huberman, A. (1994). *Qualitative data analysis* (2nd ed.). Thousand Oaks, CA: Sage Publications.
- Morawczynski, O., & Mark, P. (2009). *Poor people using mobile financial services: Observations on customer usage and impact from M-Pesa*. C-Gap Brief. Retrieved on January 12, 2012 from <http://www.cgap.org/p/site/c/template.rc/1.9.36723/>
- Mukhebi, A., & Kundu, J. (2009). *The Kenya Agricultural Commodity Exchange Limited: Linking farmers to markets*. A presentation at the Workshop on Improving the Functioning of Commodity Markets in Eastern and Southern Africa through Warehouse Receipts Systems and Market-based Interventions, Lusaka Zambia. Retrieved on March 20, 2012 from www.kacekenya.com
- One. (2009). *Economic growth and trade in sub-Saharan Africa*. Retrieved on January 22, 2012 from <http://www.one.org/c/us/progressreport/775/>
- Regression Analysis. (n.d.). In *Wikipedia*. Retrieved on February 10, 2013 from http://en.wikipedia.org/wiki/Regression_analysis
- Reilly, C. (2007). *The effect of cell phone penetration on income inequality in the developing world* (Unpublished undergraduate thesis). Retrieved on January 12, 2012 from <http://www.scribd.com/doc/949795/Mobile-Phones-and-Income-Inequality>
- Richardson, D., Ramirez, R., & Haq, M. (2000). *Grameen telecom's village phone programme in rural Bangladesh: A multi-media case study*. Retrieved on January 22, 2012 from <http://www.telecommons.com/villagephone/finalreport.pdf>
- Robbins, S. (2005). Communication breakdown: Nine mistakes managers make. In *The results-driven manager: Business etiquette for the new workplace*. Boston: Harvard Business School Publishing Corporation.
- Safaricom. (2011a). *Zidisha Biashara: Concept and business rules*. Retrieved on March 23, 2012 from Safaricom Limited Intranet at <https://safintranet.com>
- Safaricom. (2011b). *Annual report and group accounts, for the year ended March 31, 2011*. Nairobi: Safaricom Limited.
- Severens, C., & Kays, K. (1997). *1996 directory of U.S. microenterprise programs*. Washington, D.C.: Aspen Institute.
- Shinder, D. (2007). *Weigh the pros and cons of using VoIP on mobile devices*. Retrieved on January 22, 2012 from <http://www.techrepublic.com/article/weigh-the-pros-and-cons-of-using-voip-on-mobile-devices/6155891>

- Singla, R. (2009). *Business studies, class XIII*. New Delhi: Prince Print Process.
- Souter, D., Scott, N., Garforth, C., Jain, R., Mascarenhas, O., & McKemey, K. (2005). *The economic impact of telecommunications on rural Livelihoods and Poverty Reduction: A Study of Rural Communities in India (Gujarat), Mozambique and Tanzania*. (Report of DFID KaR Project 8347). Commonwealth Telecommunications Organisation for UK Department for International Development.
- Sullivan, N. (2007). *You can hear me now: How microloans and cell phones are connecting the world's poor to the global economy*. San Francisco: Jossey-Bass.
- United Nations Development Programme. (2005). *E-commerce for development: The case of Nepalese artisan exporters*. Retrieved from <http://sdnhq.undp.org/e-gov/e-comm/nepal-artisans-exec-summ.pdf> 27th March 2012.
- Waldrop, J. (2010). *Hosted PBX service + mobile phones = cut costs and increase revenue*. Retrieved on January 22, 2012 from <http://ezinearticles.com/?Hosted-PBX-Service-+-Mobile-Phones-=-Cut-Costs-and-Increase-Revenue&id=3925979>
- Walkup, R., & McKee, S. (2011). *Selling to anyone over the phone* (2nd ed.). New York: AMACOM.
- Zaphiri, P., & Ang, S. (Eds.) (2009). *Cross disciplinary advances in human computer interaction, using modeling, social computing and adaptive interfaces*. Retrieved on March 5, 2012 from www.googlebooks.com