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Research Paper

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ABSTRACT

This study was motivated by the fact that despite Uganda having mobile phone service penetration of as much as 80% of its population, studies of mobile phone usage among women entrepreneurs in developing countries are still rare. Relatively little is known about women's entrepreneurship and the mobile phone usage. Grounded in Habermas' Critical Social Theory (CST), this paper applies the theory of emancipation to understand the usage of mobile phones among women entrepreneurs in urban and rural areas of Uganda. To select participants in the study, multi-stage and purposive sampling were used. Data was collected through questionnaire and focus group discussions and was analyzed using SPSS. The findings revealed that majority of rural and urban women were micro entrepreneurs. Women entrepreneurs gained especially in mainstream operations like marketing and sales, information inflow, customer service delivery, increased business processes and profits, which facilitated increased productivity and enterprise transformation. The study came to conclude that the mobile phone is an economic tool that liberates women entrepreneurs from poverty and empowers them with knowledge.

KEYWORDS (REQUIRED)

Mobile phone, Enterprise, Usage, Women and Uganda

1. INTRODUCTION

Since the 1990s, there has been growing research interest on innovative mobile services and value models (Erich, 2002; Donner, 2007; Kleijnen et.al. 2007; Fisseha, 2008). The gaps discovered in research have facilitated improvements of mobile services, which have led to a shift from voice-oriented services to more data-oriented services. Examples include multimedia messaging services (MMS), short- messaging services (SMS), internet, emails, mobile banking, and mobile learning among others. Technological innovations enabled Samsung to manufacture a phone with feminine attractive features

like a calendar to help women keep track of their monthly periods (Corinne, 2008). Today, mobile phones have advanced beyond feminine features and are being used for business transaction services (Meso et al. 2005, Donner and Escobari, 2010, Brandie, 2011 and Kalejnin et al., 2007). Such services include trade and mobile agriculture (Brandie and Abbott, 2011), mobile health and SMS banking (Nigel et al. 2004), mobile learning (Gurumurthy, 2004), and prevention of domestic violence (Madanda et al, 2009). Thus, a mobile phone has been confirmed as a vehicle that could be utilized efficiently to generate profits and reduce costs in business enterprises (Donner and Escobari, 2010).

The study comes in to fill a research gap in mobile phone usage and entrepreneurship. Studies investigating the usage of mobile phone on the enterprise transformation and performance are very limited, predominantly in developing countries (Donner and Escobari, 2010). In their review of mobile phone usage by micro and small entrepreneurs, Donner and Escobari (2010) highlighted pressing research issues to be investigated, for example, which kind of enterprises gain more from mobile phone usage, and whether enterprises are using mobile phones for transformation purposes or using them to increase the existing profits. Furthermore, do mobile phone usages help enterprises to acquire new customers and expand their market base? In this study the researcher addressed the above issues by studying women entrepreneurs in Uganda.

The government of Uganda has taken various procedures to diversify the economy for sustainable economic development of the country and one of the major steps is to transform Uganda into a digital economy (ICT Policy, 2007). Enterprises are undergoing major transformations with the use of mobile technologies. Adoption and usage of mobile technologies are transforming business processes, and the way people live, work and play. As the business environment is transformed, some of the key questions include; how are mobile phones being used in women enterprises? Although mobile innovative services are emerging, do they merit efficiency and effectiveness in these enterprises?

Since 1996, there has been a rapid increase in adoption and use of mobile technologies in developing countries. According to Uganda Bureau of Statistics (2012), Uganda has over 34.2 million people with the proportion of females and males being at 17.3 and 16.7 million's respectively. In Uganda, there was an aggregated fixed and mobile phone subscription growth from 13, 155,378 in December 2010 to 17, 161,841 in December 2011 with a tele-density of 52.1% (UCC, 2011). Television stations grew to 54 in December 2010 and dropped to 44 stations in December 2011 and private FM radios from 229 in December 2010 and decreased to 211 by December 2011. Mobile phone subscribers increased from 12,828,264 in December 2010 to 16,696,992 by December 2011 with 14% subscription growth rate (UCC, 2011). This represents an explosive growth in mobile phone usage. With many subscribers having multiple phones, multiple subscriber identity module (SIM) cards, pre-paid phone cards, and shared phones, the number of people using mobile phones is difficult to calculate.

Furthermore, the challenge with available statistics is that they are gender blind. Data is not sex disaggregated, the same applies to call logs of telecom companies. This makes it hard for researchers to discern the extent to which mobile phones have been taken up by women as compared to men. Therefore, there could be a gender digital gap in terms of age, usability, and income distribution. Given that there are many mobile technologies, the researcher used the mobile phone as an example of mobile technologies. Researchers have discovered that the usage of mobile phones is a good example of mobile technologies adoption and use in developing countries (Mbarika et al, 2002) because of their accessibility and affordability (Aneele et al., 2008, Donner et al., 2005).

This research is motivated by the rapid increase in adoption and usage of mobile phones in developing countries. However, despite widespread adoption and usage of innovative mobile phone services, it is

still not well understood whether mobile phones are used for business transactions particularly by women? Research about usage of mobile phones has been mentioned in a few case studies and few surveys (Donner and Escobari, 2010). To make matters worse, these findings are derived from practitioner's literature and may lack an academic degree of analysis. It is doubtful whether the current findings demonstrate a good level of mobile phone usage in women enterprises. More so, women are marginalized in all sectors of development (education, health, agriculture, and industry) in the whole world.

Despite the call from development agencies and governments to improve the situation of women in business, women remain underrepresented in Information Communication Technologies (ICT). There is lack of empirical studies on the use of mobile technologies and women entrepreneurs. Hence, there is need to participate, understand, intervene and assess mobile phone usage in women enterprises. The study aims at filling the knowledge gap on usage of mobile phones in women enterprises. Moreover, mobile phones are an essential development and communication tool in improving the status of women entrepreneurs' (Mono, 2000). Studies have revealed that usage of mobile phones is constrained by education, cultures, access to financial credit, lack of market and network access, unreliable documented statistics and security issues (Huyer at al. 2003; Nancy, 2002 and Pande, 2006). Mobile phone usage in women enterprises revealed that mobile phone usage provides women with business knowledge to transact their business with minimal costs. Hence, if women entrepreneurs are to achieve enterprise rationalization and economic emancipation, their use of the mobile phone necessitates deeper investigations.

This paper presents and analyses the findings from a study of mobile phone usage in women entrepreneurs' in Uganda. In particular, it investigates the following key questions: First, how do women entrepreneurs use mobile phones in their enterprises and for what purposes? Second, what is the impact of the mobile phone on the performance of their enterprises? Third, what challenges do women entrepreneurs face in using mobile phone services in their enterprises?

2. REVEW OF RELATED LITERATURE

2.1 Enterprises and the informal sector in Uganda

Uganda is an East African country with a developing economy, though counted among the least developed in the world. Its economy depends both on informal and formal sectors. The informal sector is the largest in Uganda, and it grew at an annual rate of 25% between 1995 and 2008 (Katatumba,1995). It is believed that the rapid growth of the sector is influenced by unemployment. According to UBOS (2012), Uganda has over 2, 000, 000 people employed in the informal sector. The informal sector is the chief employer in Uganda. Analysis of the households with informal businesses by region revealed that the highest number of informal businesses were in the Central region (36%) followed by Western region (26%) and the Eastern region with 24%. The Northern region had the least number of businesses with 14% (UNHSO910). It is estimated that they are more than 90% micro enterprises operating in the country, employing 2.5 million people (UBOS, 2012). This means that the informal sector employs about 85% of the total private sector workers and its contribution to economic development is more than 20%. Informal sector employment continues to expand at more than 20% per year because of various reasons. These include: population increase, lack of employment opportunities

for university graduates, insecurity in northern Uganda, rising poverty levels that have encouraged women to engage in business and HIV-AIDS, technology innovations and others. Dominant activities in the informal sector include; food processing, clothes/shoes, metal fabrication, vending wood products, handcrafts, hair dressing vending air time for mobile phones and others.

2.2 Mobile phones and women entrepreneurs

The mobile phone is emerging as a powerful tool for gender emancipation in developing countries like Uganda. There has been a rapid growth in the telecommunication sector since the late 1980s and the usage of mobile phones have dramatically expanded since the 1990s (UCC, 2010). There have been relatively few studies focusing directly on the way mobile phones are used in enhancing economic emancipation among women entrepreneurs in the developing world (Huyer et al., 2003). Some women entrepreneurs too lack the knowledge regarding the potentials that exist in the use of mobile phone services in their enterprises (Huyer et al., 2003).

By 2011, enterprises in Uganda had employed approximately 5.9 million people (UBOS, 2011). Out of the total population of 34.2 million, 35% of Ugandans have a mobile phone compared to 0.84% of the fixed lines (UCC, 2011). Therefore the rapid adoption and usage of mobile phones in enterprises is of significant importance. To enterprises, the uses can be categorized as social and economic. As a result of mobile phone usage there has been increased profits in business, productivity, improved business network that have influenced business rationalization. Examples include the emergence of MTN mobile money, Warid Pesa, M-sente and ZAP for Air Tel Uganda ltd. In addition, politics and economics cannot be divorced from each other. Attention has shifted from the internet to the mobile phone as the means of emancipation because the mobile phone is cheaper compared to personal computers.

Mobile phones provide real time services that reduce costs, increase income, increases reach ability and mobility. They also facilitate the extension of social and business networks that empower women with knowledge to gain emancipation. In addition, mobile phones clearly substitute for journeys, brokers, trades and other business intermediaries (Donner and Escobari, 2010). Furthermore, prior research revealed that there was no research study on mobile phone usage in women entrepreneurs in Uganda. Nonetheless, similar research studies have been done in India (Aneela et al, 2008; Chew et al., 2010 and Vigneswara and Mark, 2010) and South Africa (Velghe, 2011). The survey in India was conducted in Mumbai, India among beauticians, Tiffin-makers and fish traders. The study described mobile phones as communication tool for business networking, securing better markets and prices. This has been proved in other countries and the question is: Is this true in Uganda?

2.3 The Critical Social Theory and Women Entrepreneurs

The CST was developed by Jurgen Habermas (1972), a German sociologist and social philosopher. The CST is a theory of society rationalization, which explains the evolution of capitalist (modern) society out of pre modern traditional societies as a process of rationalization. Rationalization in this research refers to a process in which society becomes increasingly capable of appropriating nature to meet its expanding needs and interests. In his CST, Habermas argued that human knowledge was governed by cognitive interests, each with its in-built theory that establishes the type of knowledge it produces. Habermas believed that actors acquire Knowledge through instrumental, communicative and emancipatory disciplines. Though, Habermas says nothing about gender aspects (Nancy, 1985) and

Habermas does not tell the public what emancipation will look like for them. Habermas further argued that actors are primarily speaking and interacting creatures. Habermas suggested that communication is a central life activity of CST. Actors use language to perform speech acts. It is the language that is used to present facts about the environment, facts that can either be true or false. Actors use language to promise, ask, order, request and others for goods and services. In his critical theory, communicative action is ultimately aimed at reaching an understanding between linguistic participants, which is a method of social interaction guided by society norms featuring agreement or consensus (Habermas, 1992). Therefore, actors coordinate their actions with one another in and through language.

In addition, the CST suggests an ideal, with which to organize human relationships. It seeks to both understand social behavior and to evaluate it and the circumstances from which it arose (Ngwenyama and Lee, 1997). The rationale of the CST is to help human beings emancipate themselves from all forms of denomination transpiring from such sources as misinformation, economic or physical oppression and ideology (Ngwenyama and Lee, 1997). Habermas concern in the CST was the individual and how each actor can deal with the situations around him so as to achieve emancipation from structures of subordination. According to Habermas's CST, the actor has five major forms of social action. These are strategic, instrumental, communicative, discursive and dramaturgical. He asserted that in every circumstance, the actor is anticipated to use these actions in proper ways that are confined in an organizational environment (Habermas, 1984). More so, the actor is empowered with knowledge through communicative action.

The quality of communication among actors is a major issue for Habermas (See Figure 1). The usage of the mobile phone is a significant social and cultural phenomenon and the fundamental concern of sociology is the process of change. Srivastara (2005) affirmed that the mobile phone had shifted from being a technology object to a key social–economic object as communication with partners had become the main purpose for buying a mobile phone. Communicative action is the manifestation of everyday existence in the modern society and language is the most elementary form of social action in a capitalistic society (Hebermas, 1984). Communicative action in this research will refer to that type of social interaction in which the plans of action of different actors are coordinated through an exchange of communicative acts (Hebermas, 1984).

Habermas (1984) suggested two levels of social interactions namely; the level of speech or linguistic acts and the level of social actions. The speech acts corresponds to mobile phone services (see Fig 1) which is part of mobile human interaction. That is, through the use of mobile phone services (language), actors aim towards reaching understanding in business processes. More so, it is the language that determines whether communication actions in the lifewold or knowledge society are generating good results or not or whether the communications done by actors are fully achieving their goals or not. For example by calling, sending SMS or emails, an actor aims to achieve an objective or to perform an action (See Fig 1). As interactions via mobile communication exclude body language, the meaning of actions is derived from mobile phone services.

In addition to the above, it is through mobile phone services that actors (women entrepreneurs) gain knowledge. In Habermas's CST, knowledge was conceptualized as that knowledge that enabled actors to emancipate themselves from forms of domination through self-reflection (Habermas, 1982). The concept of emancipation in CST is linked to epistemology through the principle of emancipatory interests (Hebermas, 1972). However, Habermas's CST is universal and gender blind. It has been criticized by many feminist scholars (Meehan, 1995). Emancipation in this research will refer to liberating someone from the control of another (Habermas, 1984). The lifewold links women entrepreneur's communicative actions with the rationalization processes that require an understanding of

actors. Furthermore, mobile phone services empower women entrepreneurs with knowledge that enables them to gain enterprise rationalization and emancipation through competing mechanisms in the modern society (See Fig 1).

The theoretical aspects in the CST explain how the dynamics of emancipation play an important role when it comes to the study of women entrepreneurs. In this study, the CST gives insights by highlighting on the following:

- The CST deals with the liberation of human beings from all forms of denomination caused by misinformation, economic and physical oppression. From a CST point of view, it is communication that liberates human beings. The mobile phone comes in as a mediating tool among entrepreneurs to facilitate the flow of timely business information that enables women entrepreneurs to achieve their business goals.
- One of the CST ideas is communicative action, in which actors in society seek to reach common understanding (Habermas, 1984). In the knowledge society, women entrepreneurs coordinate their activities and reach a common understanding using mobile phones. Mobile phones facilitate business networking that leads to increased profits.
- The emancipation idea in the CST is linked to the ideal speech situation that is used to model reality. Mobile phone usage addresses numerous issues but its overall aim is emancipation of individuals with the aim of improving society. Using Harbermas framework, the study undertakes a discourse to investigate the research question on the impact of mobile phone usage in women entrepreneurs.
- Habermas analysis of communicative action can help us empirically to explore how mobile phones are being used among women entrepreneurs.

3. RESEARCH METHOD

A mixed – methods design was used to study mobile phone usage among women entrepreneurs. A mixed methods approach was used because it is vital to study complex phenomenon (Nueman, 2010). Given the composite nature of the linkages between mobile phones, service providers and women entrepreneurs, a mixed method was found to be the most appropriate for the study (Nueman, 2010). Neuman (2010) further recognizes mixed methods as having the ability to give room for inquiring for more information, investigating in-depth ideas and simultaneously generating discussions and information on emerging concerns on the line of thought. The researcher found a mixed method suitable for understanding the mobile phone and its usage among women entrepreneurs. Qualitative and quantitative approaches were used concurrently with quantitative research taking a lead in the survey. A qualitative method (Focus group discussions) was used to supplement the questionnaires in order to get an in-depth understanding of mobile phone usage among women entrepreneurs. More so, group interviews encourage the free flow of ideas among participants, and allow participants to question; support and explain each other experiences (Nueman, 2010). The research instruments were pilot tested with academic experts, and women with characteristics similar to those of actual study participants. The researcher used insights obtained to develop the final version of the research instruments.

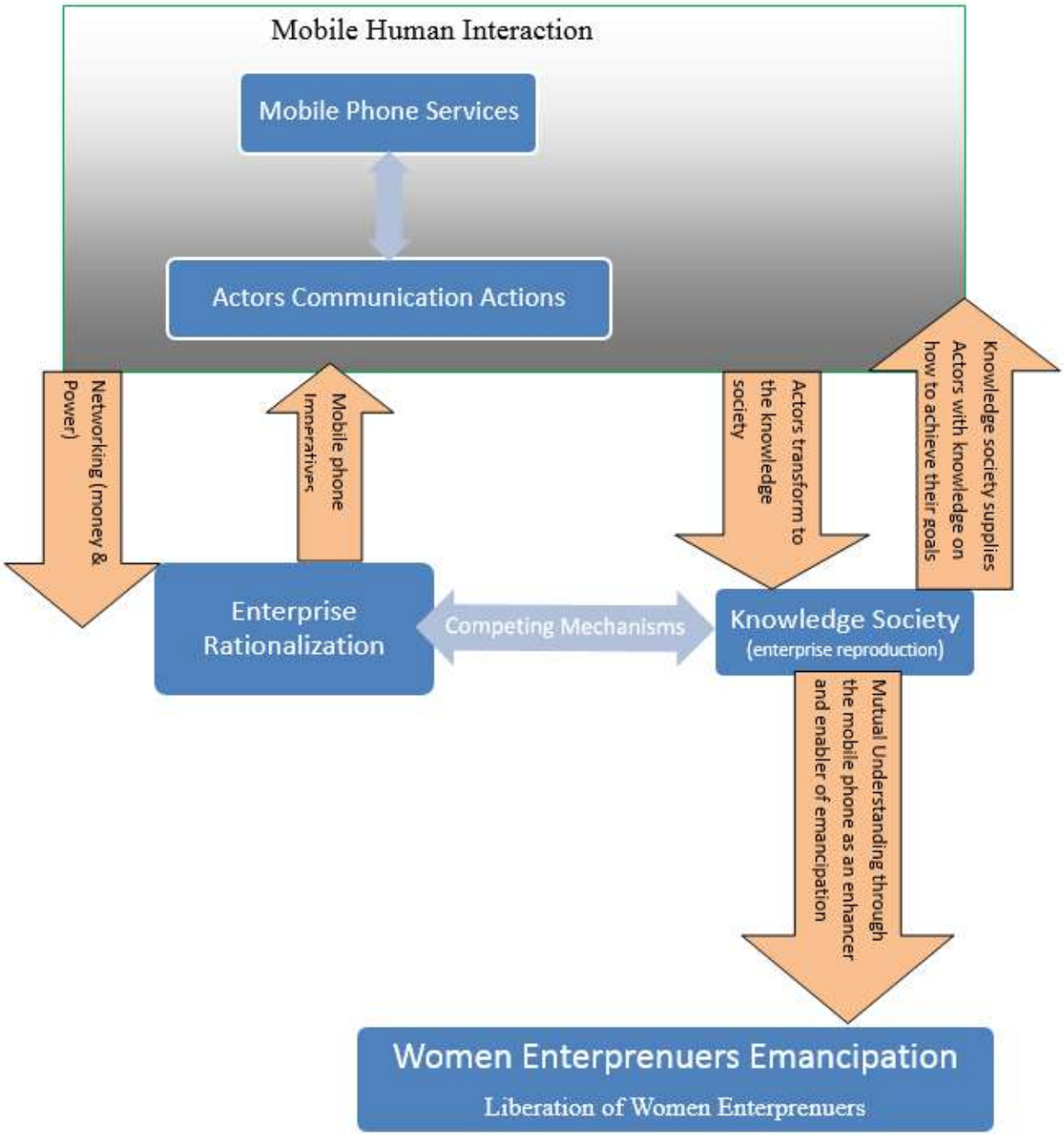

Figure1: *The Framework for Assessing Mobile Phone Usage using Habermas's Critical Social Theory (CST)*

The study was carried out in Kampala and Ibanda districts, Uganda. Kampala is the capital city of Uganda and has four divisions. These comprise of Kampala central, Makindye, Lubaga and Kawempe divisions. The researcher selected Central and Kawempe divisions of Kampala district because of three reasons: First, during this study, the divisions were experiencing an explosive growth of mobile telephony developments facilitated by many telecom companies joining the market like Warid, Orange and other mobile operators. Secondly, these divisions are considered to be in the urban area with

educated women entrepreneurs from different ethnic backgrounds. Thirdly, no similar study has been carried out in these areas. Ibanda district was selected to represent rural women. Two sub counties (Ibanda town council and Bisheshe) located in Ibanda district south western Uganda were selected since the researcher expected to get good feedback from participants. Purposive sampling technique was employed to select participants in Kampala and Ibanda districts. This was because the desired population of the study was difficult to locate and recruit (Shajahan, 2005). In addition, it enabled the researcher to save time and money since the selected sample units were near each other in the study districts (Shajahan, 2005).

According to UBOS (2007), Kampala district had a female population of 1,208,554, 70% of the female between 15 and 80 years do business. Multistage sampling was used to select the target sample size because it is cost efficient (Shajahan, 2005). The sample size was determined as follows: With a 95% confidence interval as recommended by Hutchins et al, (2001), 70% coverage of women entrepreneurs and the level of permissible error as e ≤ 10%; the formula below was used to determine the sample size.

$$x = \frac{k^2 pq}{e^2}$$

Where

x is the required sample size

k is the standard normal deviate corresponding to the degree of confidence selected. Two confidence intervals used as a rule for the population mean are 95% and 99%. This study selected 95% confidence interval, k = 1.96.

p refers to the percentage of female population that do business. In this case it is 70% (0.7)

q is the fraction of business enterprises not owned by women entrepreneurs = (1-p) = (1-0.7) =0.3.

e is the error caused by examining a sample instead of the whole population or the permissible error which is less than or equal to 10% ≤ 0.1

$$x = \frac{(1.96)2\ (0.7)(0.3)}{(0.1)2} = 80.472 \text{ respondents}$$

Eighty percent of the respondents with a provision of a non –response rate of 20% results in 100 respondents. A design effect consideration resulted into (100x2) respondents for the divisions in Kampala thus making the number of respondents in two regions equal to 200. We distributed 200 questionnaires to women participants in Kampala. We applied the same method to determine the sample size in Ibanda district. 20% respondents with a provision of a non –response rate of 20% results in 40 respondents. A design effect consideration resulted into (40x2) respondents for Ibanda and making the number of respondents equal to 80 participants in Ibanda district, which was also supplemented by focus group discussions of 20 participants.

The field work was carried out between April and July 2011. The questionnaires were administered and data collected from 280 women entrepreneurs and 40 focus group participants. Collected data was

analyzed using SPSS. Descriptive analysis was done on the data, and most of the results are presented in tables and charts for easy interpretation. This is presented in the next section.

4. RESEARCH RESULTS

This section presents the findings obtained from the study on mobile phone usage in women entrepreneurs in Uganda.

4.1. Personal Characteristics.

The demographic information of the study population was described in terms of country, district, age, highest level of education, number of years in business operation, type of mobile phone owned, type of network and the cost of investment. All the demographic variables chosen were considered essential to providing the general demographic characteristics of women entrepreneurs who use mobile phones (refer to table 1).

***Table 1**: Personal Characteristics*

	Variable	Category	Percentage
A	District	Urban	71.4
		Rural	28.6
B	Age	15-19	8.9
		20-24	23.6
		25-29	11.1
		30-34	20.7
		35-39	6.8
		40-44	13.3
		45-49	5
		50-54	7.9
		55-59	1.1
		60 & above	1.4
C	Level of education	Never completed primary	7.9
		Completed primary education	13.6
		Completed secondary education	21.1
		Completed degree/ diploma & above	56.4
D	Type of mobile phone	Basic phones	55.4
		Multifunctional phones	38.2
		Both	6.4
E	Network used	Airtel (Celtel or Zain)	25.6
		MTN	67.1
		UTL (Mango)	4
		Orange	0.4
		Warid	2.9

Table1 shows a total of two hundred eighty (280) women entrepreneurs who were studied. It further indicates that from each of the selected districts, all selected respondents were successfully studied. Most of the participants were between age group of 20-24 years. This shows that women entrepreneurs who own and use mobile phone services are relatively young and operate in the informal sector. More than 55% of women entrepreneurs own basic phones because they are cheap and affordable, user friendly and have the basic functions desired (Table1D). This concurs with a research conducted in Kigali – Rwanda by Donner (2005), where entrepreneurs owned mobile phones because they were cheap compared to personal computers. Thirty eight percent (38%) of the respondents used multifunctional phones not for prestige but because they served many purposes which included: having two or more SIM cards, internet enabled phones, could be used to send MMS for business deals, mobile learning, business forums, and taking advantage of various promotions from different service providers.

It is notable also that 67.1% of respondents subscribed to MTN network (Table1 E) because it has a wide network coverage, many subscribers, cheap innovative services, good network and free tariff rates. Airtel network fallowed with 25.6% subscribers due to having been the first telecom operator in Uganda, followed by UTL subscribers at 4%, Warid (2.9%) was preferred by some customers due to multiple promotions and good network. On the other hand, some customers preferred Orange network (0.4%) due to the good network performance, and new innovative services like reduced internet cost and 1.1% were missing values. This is in line with Mulira et al (2010), where MTN had the largest market share of (68%), followed by Airtel with 15% , then UTL with 12% and lastly Warid with 5%.

4.2 Business Characteristics of Women Enterprises.

Majority of women entrepreneurs (82.9%) own micro enterprises (less than 10 employees), small scale enterprises were represented by 11.8% (between 10 and 50 employees) while a few own medium enterprises (5.4%). This shows that more than 95% of women entrepreneurs in our sample belong to micro and small scale enterprises which is the informal sector. This is in line with (Gakine, 2004), who found out that women's productive activities were concentrated in micro enterprises. Further, the findings demonstrated that the shelf life of women entrepreneurs was relatively short with only 31.8% of business being more than 8 years old (Table 2 B). This is consistent with Nancy (2002) who states that women fail to stay in business longer due to lack of enough capital and skill. This also attests to the characteristics of businesses in the informal sector in Uganda.

As far as division of labor is concerned, women entrepreneurs' interviewed managed seven types of businesses. Namely; textiles (61%), agricultural products (38.3%), beauticians (25.5%), hotels and restaurants (19.3%), schools (19.3%) and clinics (28.3%) and mobile money (8.5% which ranked lowest because of the high capital needed to start such a business venture. Furthermore, there was no relationship found between type of business and district.

Table 2: *Business Characteristics*

	Variable	Category	Percentage
A	Type of business	Textiles, clothing and footwear	29.6
		Agricultural products	18.2
		Beauticians	13.9
		Hotels and Restaurants	13.2
		Schools	8.9
		Clinics	21.1
		Mobile Money	3.9
B	Years in business	1 year	26.1
		1-4 years	20.4
		1-8 years	21.8
		8 and above	31.8
C	Number of employees	1-4 (Micro enterprises)	82.9
		1-50 (Small enterprises)	11.8
		50 and above (Medium enterprises)	5.4

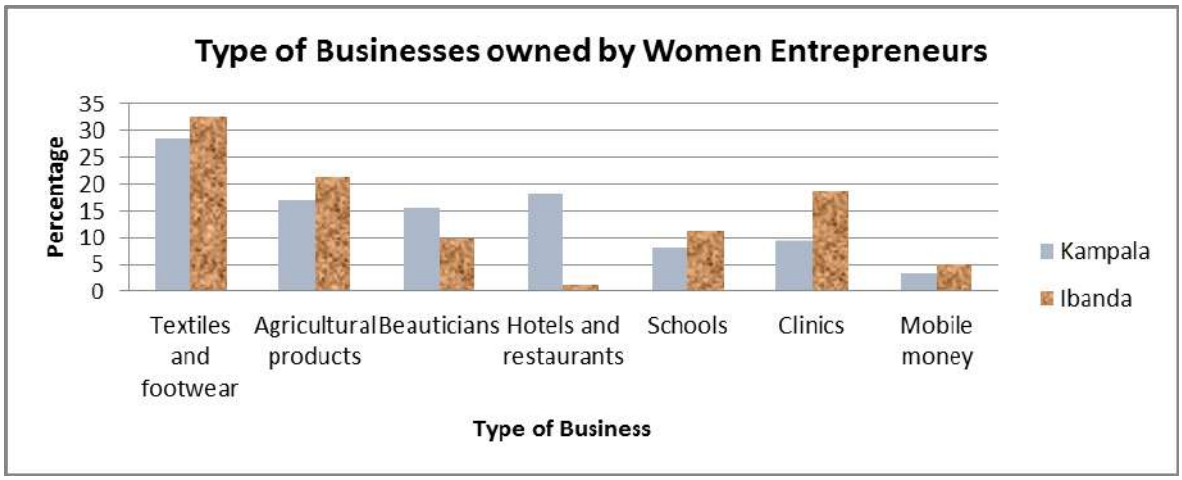

Figure 2: *Businesses owned by women entrepreneurs*

4.3: Popular Services

Results of the study revealed that women used both (47%) of SMS and voice calling to carry out their business transactions (Figure 3). This coincides with UCC (2011) findings, which discovered that 40% sent SMS and 57% made calls. This was attributed to the stiff competition and competitive pricing strategies spearheaded by the new telecom company entrants in the market who introduced a series of promotional campaigns and new tariff plans. Further, increased competition among networker providers resulted in the reduction of communication costs for women entrepreneurs and mobile phone users in general. When Uganda had three telecom companies (UTL, Airtel and MTN), sending SMS text

messages was cheaper compared to calling. Currently women entrepreneurs prefer calling since it is currently cheaper than sending an SMS. In Uganda, the use of SMS has tremendously increased since it can be used for many operations including: mobile money transfers, payment of utility bills, payment of school fees, parking tickets, selling and buying airtime, sending airtime to business partners, communication while attending meetings and aggressive advertisements through televisions, radios, newspapers and web blogs to mention but a few. Women entrepreneurs use SMS to find out prices of various products in the market. This helps women entrepreneurs to keep update with market prices. This is consistent with (Jensen, 2007 and Abraham, 2007) findings in India, where Indian fishermen used short message service (SMS) text messages to discover market prices of fish at the nearby ports.

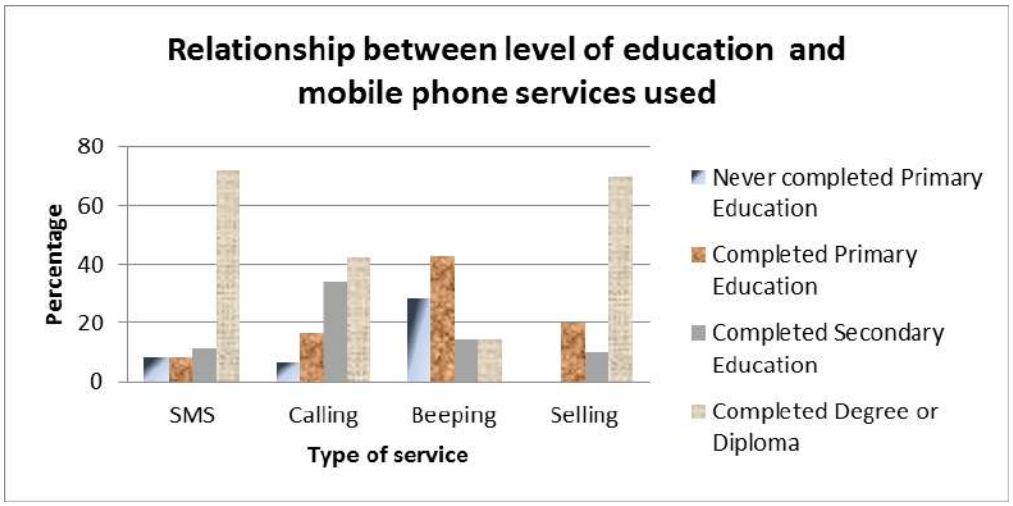

***Figure 3**: Relationship between level of education and mobile phone services used*

Results further showed that, there was a relationship between the level of education and mobile phone service used. Mobile phone beeping was practiced by Ugandan women entrepreneurs (7%) with primary level of education. It was found out that women entrepreneurs beep when they lack sufficient credit or when inviting shop attendants to perform business transactions. This concurs with research findings in Kigali- Rwanda on mobile phone usage in micro enterprises by Donner (2007) where "Beeping" is defined as calling a telephone number and hanging up before the mobile phone owner can receive the call. In addition, figure 3 shows that more than 90% of the respondents were literate and were able to read and write SMS text messages since communication is done in any language of user's choice. Mobile money enterprises were owned by the educated (70%), an indication that this was still a young innovation which necessitated more awareness campaigns. The study also found out that women prefer loading credit using airtime cards as opposed to using SMS services such as like MTN Easy load since this makes them feel comfortable and secure.

4.4: Reasons given for using mobile phones

Figure 4 demonstrates the reasons why women entrepreneurs utilized mobile phones in their businesses. Majority of the women entrepreneurs had purchased their mobile phones for convenience (46.1%), the next motivation was communication purposes (41%), followed by mobility (4.5%), and affordability (3.6 %). Although, this concurs with Anneal et al. (2008) findings, a Tanzanian study by Mpongole et al,

(2010) demonstrated that 74% of respondents had bought mobile pho for maintaining social relationships. Majority of women entrepreneurs use mobile phones for business networking (70%). However, this could be validated further since this research studied women entrepreneurs only.

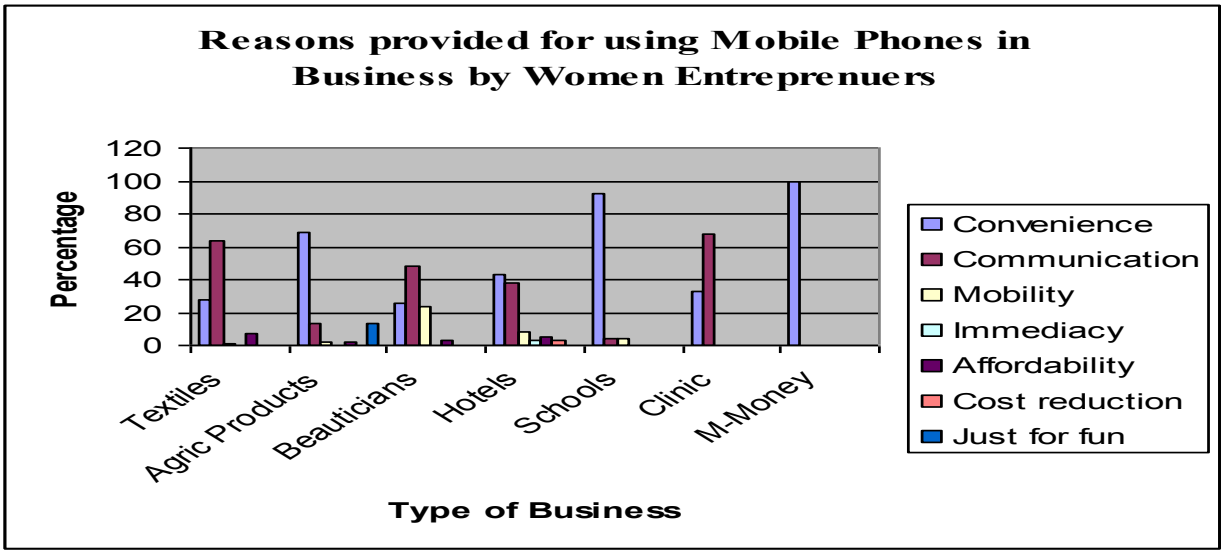

Figure 4: *Reasons provided for using mobile phones*

4.5: Impact on Profits

With respect to the benefits of mobile phones to women enterprises, respondents stated that mobile phone services increased efficiency, productivity, effectiveness, provided better customer service, reduced transaction costs, encouraged price comparison and negotiations as demonstrated below. This observation concurs with studies carried out in other countries (Donner, 2005, 2007, Mpogole et al, 2010, Aker and Mbiti, 2010).

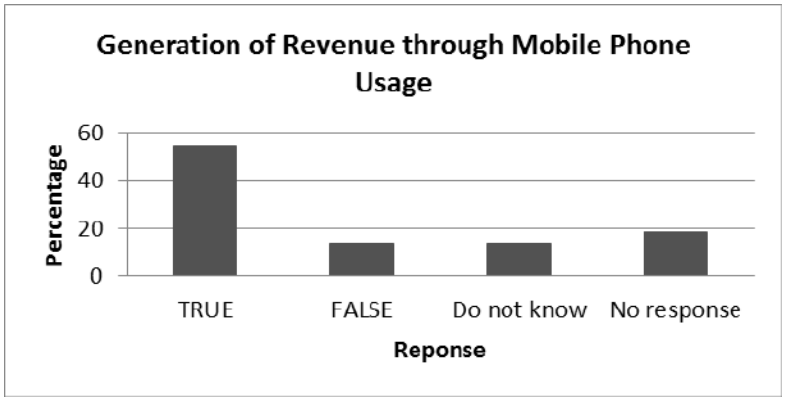

Figure 5*: Revenue generated through Mobile Phone Usage*

Findings revealed mixed feelings on profitability realized from mobile phones. 54.6% concurred with the statement that the use of innovative mobile services lead to increased profits. Almost a half of respondents could not tell whether they gained anything from mobile phone usage as illustrated in Figure 5. Majority of women entrepreneurs agreed that there was tremendous increase in profits. The reasons cited for the increase in profits include: quick service delivery (10.4%), reduced transport costs (25%), cheaper communication (13.6%), easy business networking (32.1%), immediacy (6.8%) and 12.1% were missing values an indication that there are still mixed feelings on profits derived from mobile phone usage in women entrepreneurs (see figure 6).

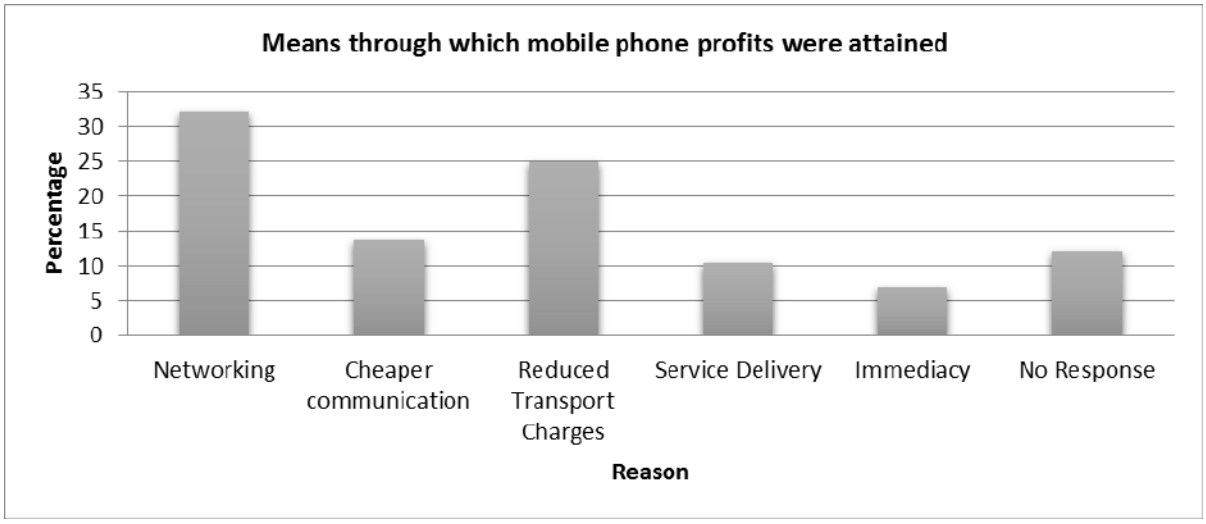

Figure 6: *Means through which mobile phone profits were increased*

4.6 Impact on Productivity

Majority of the respondents felt that the use of popular services had a positive impact on productivity as illustrated in figure 7. From this research it is clear that over 63.9% accepted that adoption and usage of mobile phones increased productivity by elimination of middlemen (Figure 7). Though, this contradicts findings in Nigeria by Nigel et al (2004), where micro entrepreneurs relied on middlemen with vital information to increase productivity. Therefore, it remains a statement of further discussion. More so, Figure 7 shows increased productivity through gaining more customers through business networking, 76% of respondents agreed with this statement. In general, there seem to be some consensus that, ideally, mobile phone service usage leads to increased productivity (Donner, 2005; Donner, 2007; Meso et al., 2005; Aker and Mbiti, 2010 and Mpogole et al., 2010).

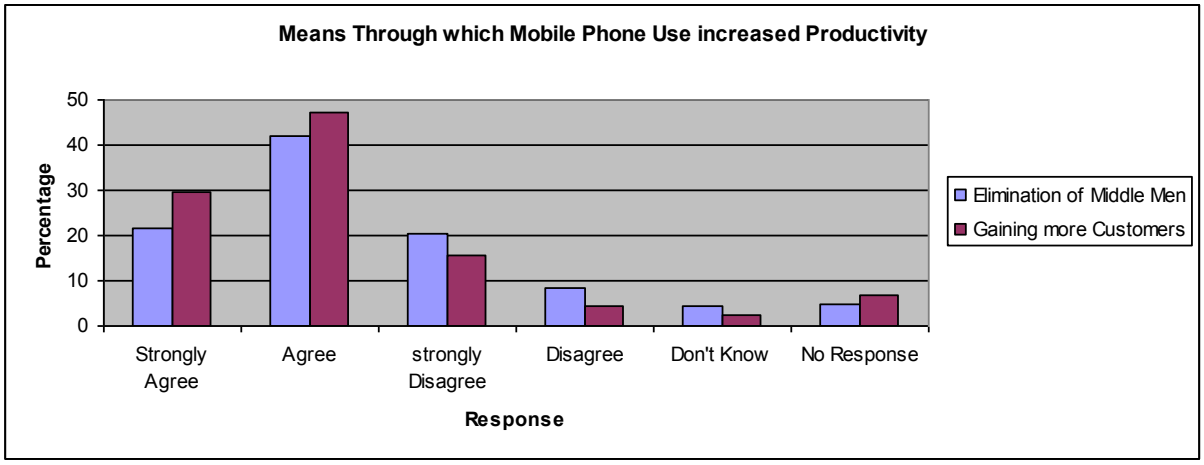

Figure 7: *Means through which mobile phone usage increased productivity*

4.7 Impact on Prices

Of the 280 respondents surveyed, 58% stated that mobile phones had helped them secure better markets and prices (Fingure 8). This is in consensus with Aker and Mbiti (2010) findings in Ghana, where farmers in Tamale used SMS to know corn and tomato prices in Accra. 95% of grain traders studied agreed obtaining price information by visting weekly mobile commodity markets.

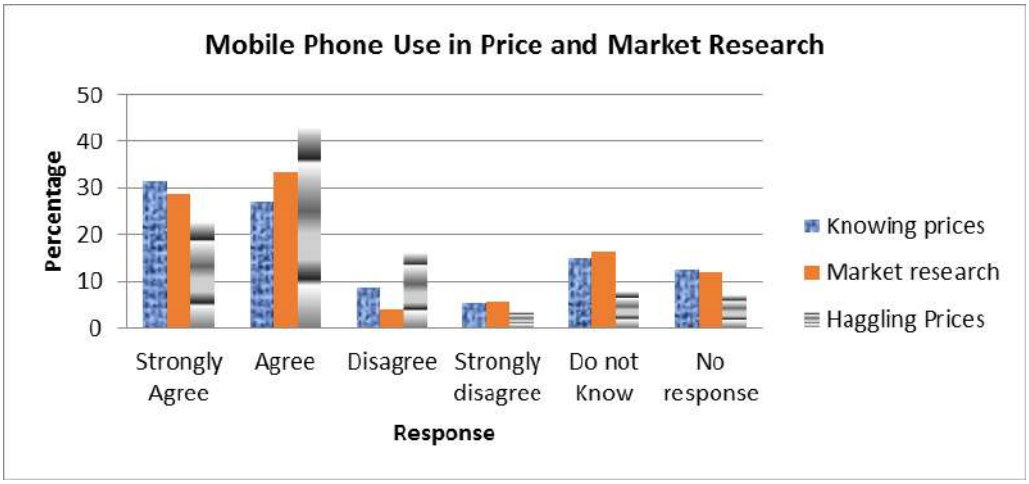

Figure 8*: Mobile phone use in price comparison and market research*

Findings further showed that mobile phones were used to carry out market research. This enabled women enterprenuers to know the availability and the different qualities and quantities of a product. As a result, women enterprenuers used mobile phone services to search for potential buyers, suppliers and prices of goods and services. This reduced search costs and in the long run increased market efficiency.

More so, more than 65% of the respondents accepted that the usage of mobile phones enabled them carry out price negotiations anytime anywhere.

4.8: Transformation of Women's Enterprises

Respondents agreed that mobile phones can be a transformative development tool for women enterprises. Though, empirical evidence is beginning to emerge (Acker and Mbiti, 2010), entrepreneurs argue that the use of innovative mobile phone services leads to enterprise transformation although it is in long term.

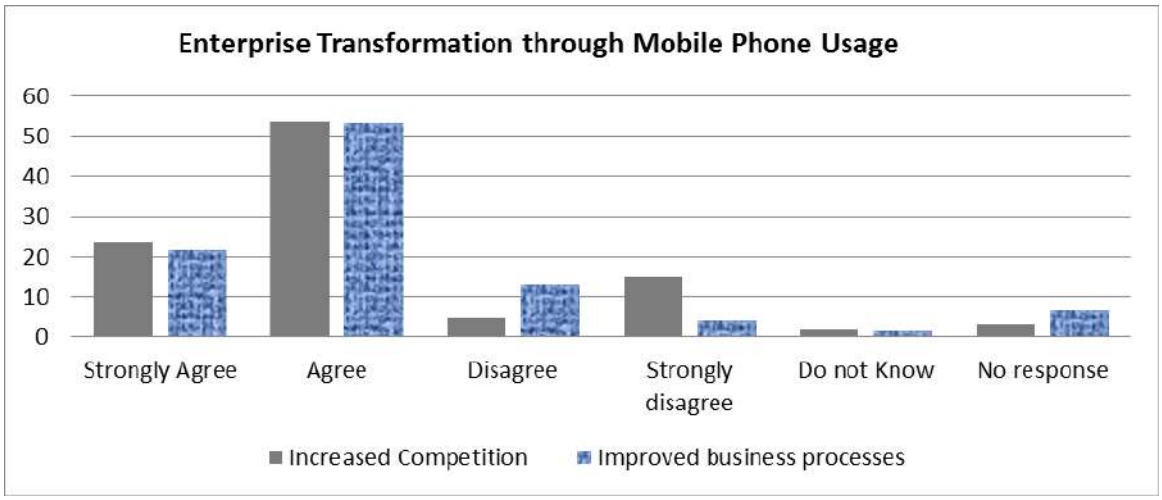

***Figure 9**: Reasons given for enterprise transformation through mobile phone use*

Respondents accepted that new innovative products like the internet and other MMS like mobile money are continuing to emerge that will continue to transform business enterprises through increased competition and improved business processes. More than 75% agreed that use of innovative services increases competition, 13.6% disagreed, 1.8 % did not know and 7.5%did not respond to the question. Emerging mobile phone data services such as mobile internet, mobile banking are transforming supply chain, customer interaction and cost reduction that increase revenue opportunities in women enterprises. This is consistent with Tripathi (2011), who stated that mobile business transform enterprises by; providing opportunities to expand scope, becoming a delivery channel and increasing demand for products. Further, mobile phone services are helpful to business processes, such as decision making, database applications and service delivery of goods and services. However, limited empirical evidence is available and further investigations are needed to justify the findings.

4.9: Challenges of Using Mobile Phone Services

Challenges of using mobile phones in women enterprises found by the study are listed below (Table 3) Of the 280 respondents studied, 33.9 % accepted that expenditure on air time was the biggest challenge, this was followed by network failures with 13.9%, physical eye contact had 10.4%, electricity charges with 6.1% security reasons (mistrust) 5.0% and 2.5% for network trafficking/ congestion and difficulty in connecting to other networks. Majority of the women entrepreneurs agreed that the use of mobile

phones is costly. To be able to call or to send an SMS text message, the user had to first pay for the services through subscription or buying air time. A call costing Uganda shillings 130 (US$ 0.05) per second during peak period is quite expensive in developing countries where majority of women live below the poverty line.

Uganda experiences intermittent power supplies (power cut offs / load shading), all women entrepreneurs we interviewed had experienced frequent load shading. This is in agreement with Tripathi (2011) findings in India where insufficient band width, network failures, lack of security, power consumption and transmission interference were found to be major challenges.

***Table 3**: Challenges provided for mobile phone use in enterprise*

Challenges of Using Mobile Phone Services in Enterprise		
Challenges	Frequency	Percentage
Buying airtime	95	33.9
Content control by husbands	7	2.5
Network failures	39	13.9
Network congestion	7	2.5
Physical eye contact	29	10.4
Electricity charges	17	6.1
Mistrust /lies	14	5
Failure to connect to other networks	7	2.5
Missing values	65	23.2

5. DISCUSSION

Most studies that have been done so far on information communication technologies (ICTs) in the informal sector are universal and gender blind. They have focused mainly on internet and computer usage rather than on applications of a mobile phone, and yet the mobile phones are widely used in business transactions in Uganda. The rare theoretical aspects available on the usage of ICTs in the informal sector in Uganda are misleading and do not give a clear representation of the state of ICTs. The mobile phone perform the same duties as inputs and outputs devices of a computer, and the mobile phone is widely spread among women entrepreneurs in the informal sector. The mobile phone was found out to be the central communication tool used by women entrepreneurs to conduct their businesses. Through focus group discussions, women revealed that the mobile phone was being used to support business, family relations and relations to friends. This finding concurs with results from similar studies conducted amongst enterprises in Africa (Donner and Escobari, 2010). Although the findings are gender blind. Furthermore, a survey of micro entrepreneurs conducted by Donner (2005) in Kigali-Rwanda, using mobile phone call logs, revealed that two thirds of calls were to family and friends. More so, in a follow –up study, it was found that calls to friends made 45% of all calls, and family members 26% (Donner, 2006). In our study, we investigated only women entrepreneurs and found out that the majority used mobile phones for business purposes. Also, women entrepreneurs used mobile phones to coordinate their day to day activities. Both mobile phone voice calls and SMS were used for

business requirements. The bulk usage of SMS by women entrepreneurs, strengthen the argument that there is increased usage of Mobile Money by actors in the value chain. Though, it should be noted however that computers and the internet play a crucial role in the successful usage of mobile phones in women enterprises, but this role is buried from women entrepreneurs. For example, when an entrepreneur saves money on the mobile phone, in reality it is saved in the database of a computer system. This is the rationale why even if the mobile phone is stolen or lost, the entrepreneur can still have access to the money or any other information concerning his account. Therefore, this role of computer is completely concealed from women entrepreneurs and the general public.

In addition to the above, through focus group discussions, it was revealed that the mobile phone facilitated women entrepreneurs to coordinate their business processes. The mobile phone was found out as a tool widely used to coordinate business activities anytime, anywhere. The mobile phone was used to check out commodity prices in various markets, and to give timely information about business transactions. SMS was seen by women entrepreneurs as a convenient means for communicating detailed information for documentation and security purposes. Examples include, money transfers by Mobile Money, selling and buying of air time using mobile money, requests of commodities from stores, confirmation of deliveries, negotiation of prices and others. Hence, we considered the usage of SMS as a means for coordinating internal business processes among women entrepreneurs.

More to the above, the mobile phone was used by women entrepreneurs to coordinated face to face meetings. Here women used both SMS and mobile phone voice calls to arrange for meetings with their suppliers, customers and mobile money agents. Therefore, the researcher concludes that mobile phone usage supports women entrepreneurs in their business alliances but it cannot be used to replace face- to face meetings, which remain crucial among women entrepreneurs more especially group micro finance meetings. During our focus group discussions, we found out that majority of women had business loans with micro finance institutions though it was not in our interview guide.

The mobile phone empowered women entrepreneurs with knowledge to carry out business transactions. Basing on Habermasian theory, the mobile phone was found out to be an enabler and facilitator of women emancipation in both rural and urban areas of Uganda. The CST enabled the researcher to understand the nature of value addition in an emancipatory information society, including social and economic emancipation, and to analyze the role of emancipation as a basis of sustaining women entrepreneurs in business. Mobile phone investment by women entrepreneurs itself was payoff. It increased revenues of women entrepreneurs through: networking, cheaper communication, reduced transport charges, service delivery and immediacy (See Figure 6). This was because benefits like increased exposure and broadened networks are necessary conditions for positive social and economic change. Given that we focused on social actions in CST, communicative action provided us with the language (mobile phone services) to describe and analyze emancipation and enterprise rationalization effects of mobile phones. The language in particular was premised on five types of communication actions: instrumental, strategic, communicative, discursive and dramaturgical actions. It was evident that communicative and discursive actions aimed at realizing the emancipatory functions in the informal sector. For instance, women entrepreneurs were able to bargain prices of goods and services with suppliers and end consumers to change their economic status; carry out market research for commodities; increased their competitive strategies; and accelerated the flow of activities within their enterprises (See Figure 8 and 9). This enabled women entrepreneurs to achieve emancipation as a result of ideal speech situations (Habermas, 1984).

In addition to the above, mobile phones increased knowledge and self-esteem of women entrepreneurs in Uganda. This was universally true both in rural and urban areas. This was achieved through

competing mechanisms brought about by rationalization of women enterprises. In here, women entrepreneurs transform to the knowledge society by the potentials of mobile phone usage. The mobile phone supplies women entrepreneurs and other actors in the value chain with ideas on how to achieve their business goals. In our study, mobile phone usage enabled women entrepreneurs to compete for commodities, markets and end consumers which in turn yielded increased profits. The competing mechanisms provided by mobile phone usage, facilitated women entrepreneurs to transform to the knowledge economy. Here, women entrepreneurs reproduce due to competitive ideas acquired in the knowledge society that leads to mutual understanding of business processes. This empowering process, however, had the potential to destabilize existing gender relations. It is thus apparent that the usage of mobile phones on women emancipation requires a broad consensus on the understanding of the construction of the sense of enterprise rationalization and emancipation, which varies in diverse contexts. More so, emancipation has no set definitions, the focus should be on emancipation not given by someone else, but beginning within. In Uganda, the concepts of women's emancipation and enterprise rationalization are recent and not well defined. Therefore, the liberating effects of the mobile phone among women entrepreneurs per se are seen as giving them economic power, autonomy and knowledge to carry out their businesses.

6. CONCLUSION

Prior research has to a certain percentage been able to maintain the argument that the mobile phone usage increases efficiency of business entrepreneurs (Donner and Escobari, 2010). In Uganda, 54.6% of women entrepreneurs revealed that mobile phone usage makes their business more profitable. Furthermore, the findings in this study have shown that mobile phone usage provide women entrepreneurs with fast and easy means of business communication. Mobile phone usage enables women entrepreneurs to reduce transactional costs, and to increase entrepreneur profits through strengthening business networks; increase's women entrepreneur ability to deal with emergencies; which in turn increase productivity. In addition mobile phone usage facilitates women entrepreneurs to cut down trade costs, minimize the risks, substitute for necessary journeys, and intensifying efficiency of activities and transfer of funds.

Mobile phone usage facilitate women entrepreneurs in Uganda to secure better markets and prices, save time and money, negotiate for suitable prices and timely communicate business – related information that empowers women entrepreneurs with knowledge to carry out business processes. Mobile phone usage empowers women entrepreneurs with knowledge; it enables access to information, offers opportunities at individual and community level. Mobile phone usage provides timely business information that facilitates rationalization of women enterprises through competing mechanisms that leads to women emancipation. Mobile phone usage makes it easier for women entrepreneurs to accomplish business activities faster in the knowledge society and it leads to women emancipation. Emancipation is indeed a central aim of the use of ICTs. Women entrepreneur welfare and access issues of emancipation are addressed by mobile phone even if there are limitations to how much the mobile phone can essentially do. The social cultural aspects of women entrepreneurs like content control by their husbands remain unchanged. Some women entrepreneurs remain oppressed and in certain cases the mobile phone increases domestic violence. Women entrepreneurs through group discussion moreover indicated that while their revenue had improved, their domestic burden had really increased.

7. IMPLICATIONS AND DIRECTION FOR FURTHER RESEARCH

The mobile phone was and continues to be seen as a knowledge tool to clear the digital war. However, the solution is not merely purchasing dual mobile phones and SIM cards, but in ensuring that sustainable policies and pricing regulations are in place, so that women entrepreneurs can benefit from the mobile phone services and in turn boosts their economic welfare. Uganda is sure to benefit from the rationalization of women's enterprises. However, in order to do so, women's consumer behaviors of mobile phones, first need to be studied in order to develop appropriate gender –sensitive strategies. One of the crucial problems encountered in this research was the lack of empirical research on women entrepreneurship in Uganda, and more especially on women entrepreneurship and their use of mobile phones. Then, it is clear that more research is needed in the study of women's entrepreneurship, especially if the study focuses on ICTs and emancipation using critical research approach. The nurturing of growth in research and development in women's entrepreneurship would be a constructive step in developing and implementing successful programs for women entrepreneurs.

Furthermore, having ICT knowledge is not enough, what is important is to apply the acquired knowledge into practical procedures that will impact on economic growth and development. It is paramount to first study how mobile phones are currently being used in Uganda. Again, it is necessary to emphasize UCCC and service providers to invest in research and development that focuses on the end consumer patterns of various ICTs, especially those of low income groups like women entrepreneurs, the disabled and others. Nonetheless, mobile phones in themselves are not the only solution in improving women's welfare. As Urbanch (2007) maintains, the diffusion and efficiency of mobile phones in Sub Saharan Africa depends mainly on the policies adopted by government. More so, these ICT policies need to examine the consumer behavior of disadvantaged groups more closely.

Indeed, internet enabled mobile phones are already in the Ugandan market, and those who have the knowledge to use mobile phone services are able to decide whether to use them or purchase a computer. Awareness programs and training are required to educate actors on the pros and cons of using the computer rather that internet enabled mobile phone. Mobile operators are now venturing into selling laptops to university students and lecturers, facilitated by commercial banks. This progress points out that using an internet enabled mobile phone has some problems, such as screen size, network failures, traffic congestion to mention but a few, the actors need to know before investing in innovative mobile phone services. The internet is important for export or import of goods, and entrepreneurs that wish to participate in the information economy should be given a chance to make timely informed market choices by being educated on internet based mobile phones.

Globalization is one of the major aims of Ugandan vision, and this aim cannot be attained without wide penetration of high powered mobile phones in the informal sector. Research is needed to measure the extent to which internet enabled mobile phones have diffused in the informal sector and their impact on import and export. Further research on the applications of mobile phones in the informal sector and value derived from them should be investigated.

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