

# Usage of Cell Phones in Morogoro Municipality, Tanzania

Matokeo Msavange

Sokoine University of Agriculture Morogoro Tanzania (2012)

## ABSTRACT

This study examined the usage of cell phone in Morogoro Municipality, Tanzania. The specific objectives of this study were to determine the usage of cell phones in Morogoro Municipality; investigate factors influencing usage of cell phones in Morogoro Municipality; and examine challenges of cell phone usage in Morogoro Municipality. Resources in terms of time set for the research and finance, the sample comprises of 120 respondents and 3 key informants. Data were collected through questionnaire, unstructured interview and observations. The Statistical Package for Social Science (SPSS) version 16 was used for data analysis. The study results indicate that regardless the age, sex and education; all respondents have the skills to use cell phone. The usability of the cell phone depends much with someone needs; friends and family influences. About 83.3% of the respondents responded positively that they own and use cell phone for different purpose. The results further shows that 81.7% of people in Morogoro municipality area use cell phone for making calls, 67.5% for sending short text message and 44.2% for listening music and FM radios, and surfing to internet using cell phone occupied 29.2%. Interesting, 37.5% of the respondents are using cell phone for money transactions. Mobile phones also are highly valued for social activities, entertainments, news, and awareness. Cell phone usage brings people attention all the time even if they are at remote areas. The challenges faced in using cell phone is the poor durability, poor skills on using cell phone simply because they are made in foreign language; few of them can be set to Kiswahili language. It is concluded that education is needed to the cell phone users on better and varied use of the cell phone technology. Again, challenges on using cell phones need to be addressed by companies that make cell phone products and export to us. They should make sure they provide the best and affordable product in order to facilitate the usability of the cell phone technology and not importing every product which lead to act as the damping area of poorer made cell phones.

Government also should make deliberate efforts to minimize the cost of operating a mobile phone, in cluding regulating the cross network expenses to encourage the sharing of the available infrastructure among cell phone network providers.

**Key Word**, Usage of Cell Phone, Morogoro Municipality

## 1. BACKGROUND INFORMATION

There have been remarkable developments in information and communication technologies around the world over the past few years. Information and Communication technology shortly ICT have penetrated nearly in every segment of society, and projections suggest increased penetration rates (Melchioly and Sæbø, 2010; Sife, 2010).

There are distinctions between new ICTs generation such as computers and mobile phones, and old ICTs generation such as television, radios, and landline telephony. The new generation technologies convergences such that single devices can now receive, process, store and display SMS (short text message), images, sound and videos together and also can surf internet (Sife *et al*, 2010).

Cell phone is one of the fastest growing communication technologies (Campbell, 2007). Sife (2010) qualified that mobile teledensity has increased from almost zero to five between 1993 and 2006, in Tanzania; this has continued to grow (TCRA, 2010).

Also, since 2000 there was six new cell phone companies appeared on the market in Tanzania (Hassan and Semkwiji, 2011). Some of the company tends to change their former names and assign new once. In terms of market shares, different companies, namely Vodacom and Airtel (former Celte and Zain), Tigo and others are faring quite well (Hassan and Semkwiji, 2011).

The coming of Zantel as the second fixed line service provider in 2004 decreases the telecommunication cost by 60 percent (Cunningham and Cunningham, 2005). According to Tanzania Communication Regulatory Authority 2010, Vodacom dominates with a market share of 42 percent of the market, Airtel holds 28 percent, Tigo carries 22 percent and Zantel possess 8 percent countrywide. The rapid expansion of mobile phone usage in Tanzania has been triggered by a highly competitive market and service diversification, with the operators now providing different mobile phone services such as voice calls and message transmission as well as Internet services. In general views, cell phone in the world are now becoming very popular, this is because with the cell phone people may do many transactions like banking activities, voice calls, SMS (short text messaging), Camera, Video Audio player and even more surfing internet (Cui and Wang, 2008; Sife, 2010; William and Suri, 2009).

The usage of cell phones or mobile phones in few years back has increased abruptly in both the developed and developing world or third world countries as termed in other word, and this is the result of the development of information and communication technology (ICT) (Campbell, 2007; Sife, 2010; Wireless Intelligence, 2007).

In developed world, cell phones are used in different purpose regardless the voice call they also used in banking transaction. Again, in the current decade, use of mobile telephony has increased fourfold, from approximately 1 billion to 4 billion active subscriptions worldwide (ITU, 2009).

The idea for cellular telephony initially originated in the US. The first cellular call and the first call from a hand held cellular device also were placed in the US. The cell phone merges the landline telephony system with wireless communication. Mobile radio systems have been used since the early 1900's in the form of ship to shore radio, and were installed in some police cars in Detroit starting in 1921. The blending of landline telephone and radio communication came after the Second World War. The first commercially available mobile radiophone service that allowed calls from fixed to mobile telephones was offered in St. Louis in 1946. By 1964 there were 1.5 million of mobile phone users in the US (Lenhart *et al*, 2010).

Studies by the International Telecommunications Union indicate that of the world's cell phone subscribers only 33% were in the developed world with the remaining 67% in the developing world at the end of 2006. Similarly to patterns observed in the developed world, the developing world has also experienced explosive growth in terms of mobile phone take-up.

According to Bhavnani (2008) and Milner (2006) as cited in Sife (2010), in the year 2006 various countries across SSA shows the compound growth of cell phone about 85 percent. The liberalization of telecommunication markets which lead to lowering costs associated with set up cellular networks infrastructure (Forlin *et al*, 2008). The report indicates that cell phone connections in Africa passed 280 million in the opening quarter of 2008; overtaking the United States and Canada with their 277 million connections (Wireless Intelligence, 2007).

In Tanzania, Cell phone application has experienced a growth, that the number of people with access to cell phones now exceeds the number of people with fixed line telephones. Since 1990s the telephone services in Tanzania was mainly depending on the fixed line, and was very unreliable. The service was provided by the Tanzania Telecommunication Company (TTCL) especially in large cities. However, since 1994 mobile phone technology started to improve. By 2005 a total of six mobile companies had been registered; they focused their coverage initially to highly populated areas especially big towns to maximize profits (TCRA, 2005).

Nevertheless, with the increasing activities in mining, commerce, national parks, tourism and small towns in rural areas, the business expanded and service providers gradually directed attention to rural and peri-urban areas as well. In 2005, approximately 10 percent of the population had access to a cell phone. Roughly half this number of people lived in urban areas. Some surveys attribute the propagation of cell phones to the introduction of alternative business models such as prepaid accounts, which is the system of choice for 99 per cent of cell phone users (Gillwald, 2005). However, different from the past decade cell phone ownership and usage has increased much in Tanzania (TCRA, 2010).

In development cell phone usage has been recognized to have positive impact on both economic and social welfare. Economically the impact has been manifested in many different ways, such as generating income (boosting GDP); creating jobs both in the cell phone industry and the wider economy, increasing productivity in different areas and providing public revenues through taxation from cell phone operators. Different sources have explained this phenomenon.

Deloitte (2008) and McKinsey (2007) in Hassan and Semkwiji (2011) and Waverman (2005) argued that Cell phone technology is the most important sources of GDP in both developed and developing countries. It is reported that an increase of 10 cell phones per 100 people in a typical developing country, would boost GDP growth by 6% (Vodafone, 2005).

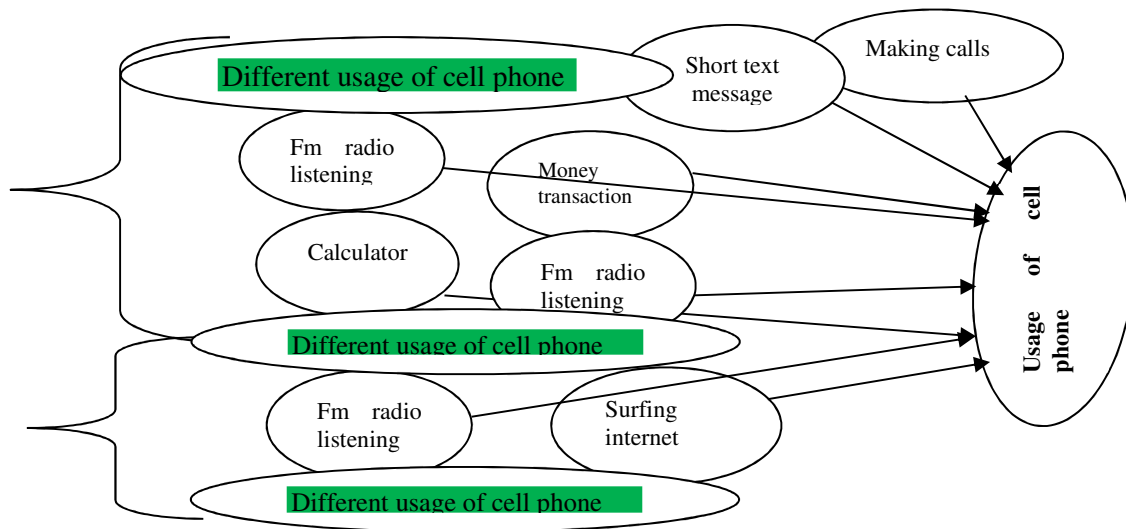


Figure 1: Conceptual framework Source: Authors own made, 2012

## 2. RESEARCH METHODOLOGY

This study was conducted around Morogoro municipality located in Morogoro region. Morogoro municipality has a total area of 260 square kilometers which lies at the base of the Uluguru Mountains. The municipality has 29 wards.

The population of people in Morogoro municipality is estimated to be 228,863 people, of which women constitute 50.35% while men 49.69%. The population of the youth, aged between 15 and 24 years is 20.2% of which 27,841 are females and 26,412 are males (URT census, 2002). Morogoro municipality has various cell phone network service provider including Vodacom, Airtel formally Celtel and Zain, Tigo, Zantel and the fixed landline Telephone (TTCL). The main language spoken by Morogoro Municipality dwellers is Kiswahili, though there are tribal languages.



Figure 2: Study area

The study was conducted at Morogoro municipality area, and was selected because the review of literature shows that there is no similar study conducted to determine the usage of cell phone technology to the particular area. In addition, the researcher is familiar with the area for approximately three years, the familiarity made very easier important in data collection stage as well as its interpretation.

The study used quantitative and qualitative research design; it included questionnaire survey and carrying out in depth interviews with key informants in Morogoro municipality. Qualitative and quantitative data were concurrently collected because of complementarily between the two. Creswell and Clark (2007) explained that the use of quantitative and qualitative approaches in combination provides a better understanding of the research problem than when either one alone used. Mixed methods provide strength and hence counterbalance the weakness of both quantitative and qualitative research.

The study population, from which the sample population were drawn, involved male and female individuals aged from 10 and above in the Municipal. The sample unit was drawn from different areas around the Morogoro Municipality.

Since the study was conducted in a big population of people stratified sampling were used and simple random sampling also was useful to select individual from the stratum. About 120 respondents were involved in this study to get enough data which presented the total population. In this study, Male respondents were 68 while female respondents constituted 52 individuals. The sample size analyzed in the table was helpful in collecting enough data since all stake holders and unit sample were involved.

Stratified random sampling methods were used, and simple random sampling were used to pick the respondents from the stratum. The study observed male and female, and the selection was done to different area of the Morogoro municipality. The techniques was chosen due to the cost constrain of using large population sample which in turn consume big budget to run the process of data collection and analysis (Table1).

**Table 1: Selection of the sample population**

Sn.	Male Sample ( Age Range)	Number of Male Respondents	Female Sample (Age Range)	Number of Female Respondents
1.	10-20	15	10-20	9
2.	21-30	15	21-30	12
3.	31-40	16	31-40	8
4.	41-50	12	41-50	13
5.	51-Above	10	51-Above	10
Total Respondents = 68			Total Respondents = 52	

In this study both primary and secondary data was collected using various methods of data collection. Primary data was collected from the sample population using questionnaire and interview methods. Questionnaires were written in English and translated to Kiswahili, this is because the data collection was carried in by using Kiswahili language since most of the people in the study area speaks Kiswahili and few of them who knows to speak English.

According to Sife (2010) cited from Mouton (2005) argue that it is important for the respondents to be interviewed and answering question in a language they wish and feel comfortable. Secondary data were obtained through reviewing different document printed and those available in electronic format, it included serials like journals articles and different reports which aided the accomplishment of this study.

In this study the researcher conducted face to face in-depth interviews with the three key informants from the study community and have knowledge about cell phone usage. And also Observations technique were used to confirm the answers provided by interviewees.

In depth interview from key informants was transcribed after the field and respondents was listed and assigned codes before analyzing them for the report. Data from questionnaire and unstructured interviews were coded and analyzed using SPSS package.

### 3. RESULTS AND DISCUSSION

#### 3.1 Characteristics of the Respondents

The demographics such as age, sex and education on usage of cell phone for different activities in the daily life. Respondents characteristics were not part of the research question but it was found necessary to collect, analyze and present such information in order to provide picture on the background of respondents. The demographics characteristics provide an overview regarding the suitability of the study population (Sife, 2010).

##### 3.1.1 Demographic characteristics

Age, sex and education status of the respondents are presented in Table 2. The respondents in terms of age were categorized into five categories namely 10-20 years, 21-30 years, 31-40 years, 41-50 years and those above 51 years. These distinctiveness provide the demographic description of the sample to the respondents' usage of cell phone, both males and females had the same number of sixty respondents each. In case of age and education, some of the age range leads other (21-30 years) were there 23.3% of 120 respondents and the least range (above

51 years) which is 16.7% of the 120 respondents. Other age range is 10-20 years occupying 19.2%, 31-40 years having 20.0% and 41-50 years equivalent to 20.8% each of it is out of 120 respondents (Table2).

With regard to level education, the vast majority (41.7% of 120) of the respondents had attended post-secondary education specifically certificate and diploma levels with nearly three quarters (35.8 of 120) having a maximum secondary education (Ordinarily and level and advanced level). In owning and using cell phone services people may differ in terms of age, sex and education level (Table2).

**Table 2: Distribution of Respondents by Demographic characteristics**

Demographic	Characteristics	Frequency (n)	Percent (%)
<b>Age(Years)</b>	10-20years	23	19.2
	21-30years	28	23.3
	31-40years	24	20.0
	41-50years	25	20.8
	51>yeas	20	16.7
<b>Sex</b>	Male	60	50.0
	Female	60	50.0
<b>Education</b>	Adult Education	13	10.8
	Primary Education	12	10.0
	Secondary Education	43	35.8
	Post-secondary Education (Certificate, Diploma, Degree)	50	41.7
	No formal Schooling	2	1.7

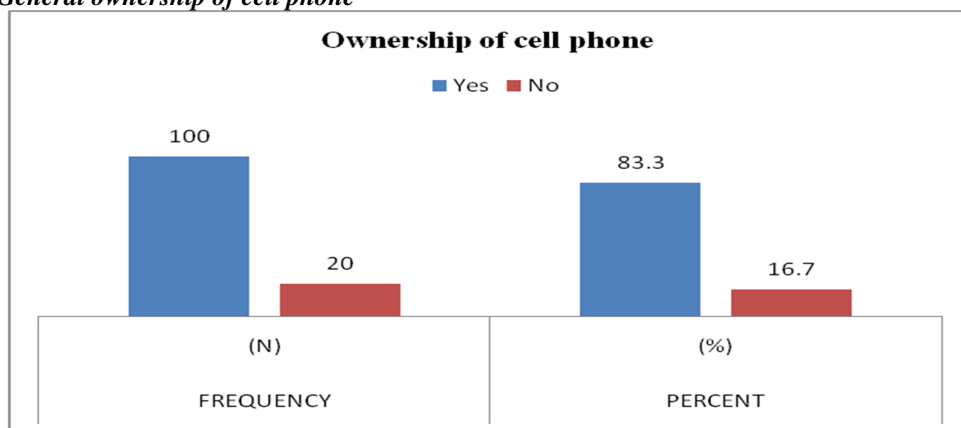
*Source: Field data (2012)*

By knowing the demographic characteristics of the respondent will help to know which age level do most of people start using cell phone with regard to education and sex of the respondents. With age, sex and education it is easy to determine the group of people who use cell phone. Table 2 shows the distribution of respondents by demographic characteristics.

### 3.2 Cell phone Ownership

Findings shows that in Morogoro municipality about 83.3% of 120 people they own cell phone and only 16.7% of 120 do not own cell phone. This entail that a large group of people in Morogoro municipality own cell phone as compared to those who do not own (Figure 3)

**Figure 3: General ownership of cell phone**



*Source: Field data (2012)*

The results indicated that, 100% of 24 respondents are aged between 31-40 and 41-50 years old they own cell phone followed by 96% of 20 respondents aged above 50 years indicates that they also own cell phone (Figure 1). In addition, 85% of 27 respondents said that they own cell phone which is different to 10-20 age level as it only occupied 37.7% of 24 respondents in case of cell phone ownership (Table 3)

**Table 3: Age and ownership of cell phone**

Age of Respondent (Years)	Ownership of Cell Phone				Total
	Yes	%	No	%	
10-20	9	37.5%	15	62.5%	24
21-30	23	85.2%	4	14.8%	27
31-40	24	100.0%	0	0.0%	24
41-50	24	100.0%	0	0.0%	24
51>	19	96.0%	1	4.0%	20

*Source: Field data, (2012)*

Again, the findings showed that 58 (85.3% of 68) of respondents were male owning cell phone when compared to 42 (80.8 of 52) of female. This implies that male leads female in terms of cell phone ownership (Table 4). Most of male and female respondents aged between 10-20 specifically those in secondary education do not own cell phone due to limitation in school by their teacher's one key informants insisted, different to male who may hide it and being used when class time is over.

**Table 4: Sex and ownership of cell phone**

SEX OF THE RESPONDENT	Ownership of Cell Phone				TOTAL
	Yes	%	No	%	
Male	58	85.3%	10	14.7%	68
Female	42	80.8%	10	19.2%	52
Total	100		20		120

*Source: Field data, (2012)*

In terms of education levels for cell phone ownership, one third of respondents (41.7% of 120) were post-secondary education specifically to those with certificate and diploma, followed by 22.5% of 120 respondents with secondary education are owning cell phone. Other is primary education occupying 10% of 120 while 1.7% of respondents are those with no formal education (Figure5).

**Table 5: Education level and ownership of cell phone**

Education level	Ownership of cell phone				Total
	Yes	%	No	%	
Adult education	12	92.3%	1	7.7%	13
Primary education	11	91.7%	1	8.3%	12
Secondary education	27	62.8%	16	37.2%	43
Post-secondary education (Certificate, Diploma ,Degree)	48	96.0%	2	4.0%	50
No formal education	2	100.0%	0	0.0%	2
Total	100	83.3%	20	16.7%	120

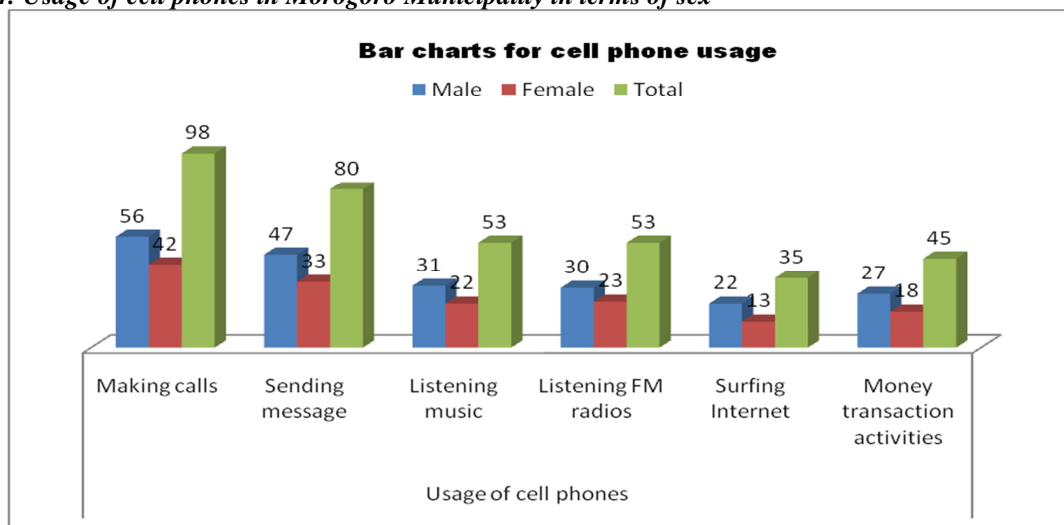
*Source: Field data, (2012)*

### 3.3 The usage of Cell phone in general

In this study, 83.3% of the respondents responded positively that they own and use cell phone for different purpose. The findings shows that about 81.7% of people in Morogoro municipality area use cell phone for making calls, 67.5% for sending short text message while listening music and FM radios got the same per cent of 44.2% each and surfing to internet using cell phone occupied 29.2% while 37.5% of people are using for money transactions. Male seem to be the most user of cell phone service, this is because about 56 male respondents out of 120 responded that they use cell phone for making calls different from female were only 42 of them seem to use cell phone for making calls. Likewise to other cell phone services male seem to lead the female (Figure4).



**Figure 4: Usage of cell phones in Morogoro Municipality in terms of sex**



*Source: Field data, (2012)*

In case of age, the usage of cell phone varies between different age levels. It was learned that 9.2% of young people aged between 10-20, 22.4% aged between 21-30, 24.5% aged between 31-40, 23.5% aged between 41-50 and 20.4% aged above 50 years of young people out of 98 respondents people used cell phone for making calls. With respect to percentage, other cell phone service is like sending short text message, listening to Fm radios, surfing internet, listening to music and due to technological development to days cell phones are used in business activities especially in money transactions (Table 4 on page 24) like M-pesa, Tigo pesa, Airtel Money and Zantel pesa (Figure 5 and 7).

According to the key informants and researcher observations most of people in Morogoro municipality are using cell phones as calculator, as a torch, used to show direction and to those with smart phones are used as a dictionary as appointed by one of the key informant. Also cell phones are slightly used to let kids to stop crying due to entertainments of music and ring tones available or in built in it.

The results also show that, 41.7% of 94 responded that they are using cell phone starts using it in the age between 21-30 years old, followed by 31.7% those aged between 10-20 years old. Few per cent of 4.2 those aged between 41-50 years old and only 0.8% of 94 respondents started to use cell while they are adult age range of 50 years old and above. This implies that, with the development of cell phone services most of people today start using the technology while they young and are being influenced by friends, family and mostly due to their own needs.

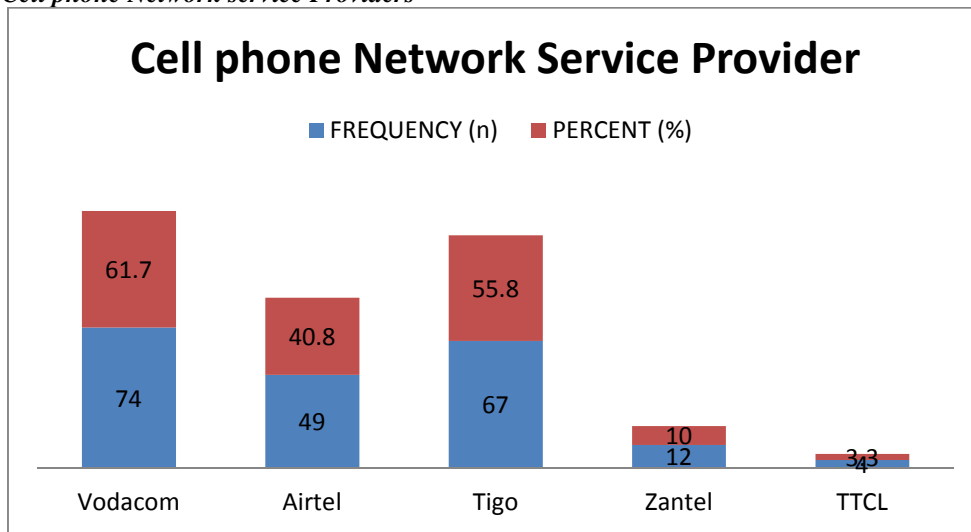
### 3.4 Factors influencing usage of cell phones in Morogoro Municipality

The findings indicates that 71.7% of 120 responded that they use cell phone due to their own needs like to communicate with relatives and friends, in conducting business with remote peoples. Again, in case of those that are studying they use cell phone to keep in touch with parents and family. Furthermore, only 21.7% said they use cell phone because of family influences which is higher percent than those who said they use cell phone due to friends influence with only 10.8% of 120.

Again, increase of cell phone network providers facilitates the usage of cell phone due to competition in the market which enables most of them to reduce the communication cost, as pointed out by Sife (2010) and TCRA (2010) increase competition among network providers has resulted in reduction of costs for mobile phone users (Figure 6).

Several factors have contributed to the rapid growth in cell phone subscribers. These include: (i) the relatively low cost of adding new subscribers to the cellular network (mobiles are much more scalable than fixed-line phones), (ii) the high premium placed on mobility by consumers, (iii) the strong presence of the private investors in cell phone provision, as rising demand by consumers has boosted profits for manufacturers and operators alike, and lastly (iii) the growing favourable regulatory environment fuelling this exponential growth.

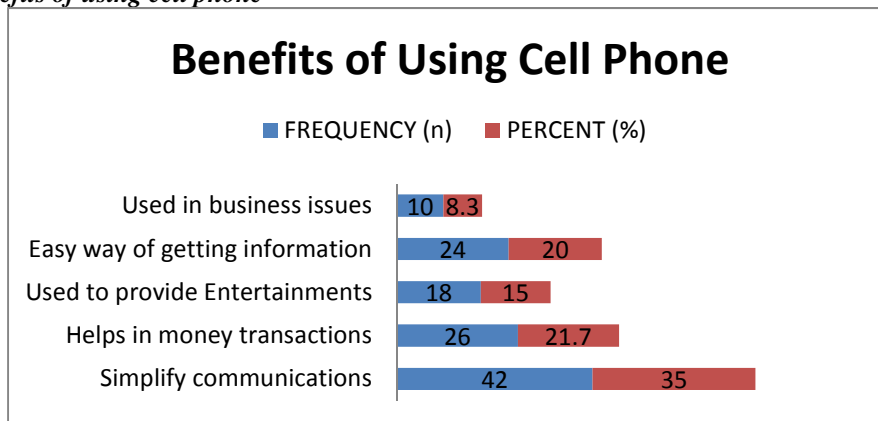
Figure 5: Cell phone Network service Providers



Source: Field data, (2012)

Furthermore, even though there is many service that are provided by the cell phone the main aim of having cell phone is for communication purpose which depends much with the cell phone network provider, one of the key informants said. There are many benefits of using cell phone; it includes facilitating easy way of getting information, facilitate business issues and more enough today it help in money transactions as people use M-pesa, Airtel money, tigo pesa and Zantel money (Figure5 and 6).

Figure 6: Benefits of using cell phone



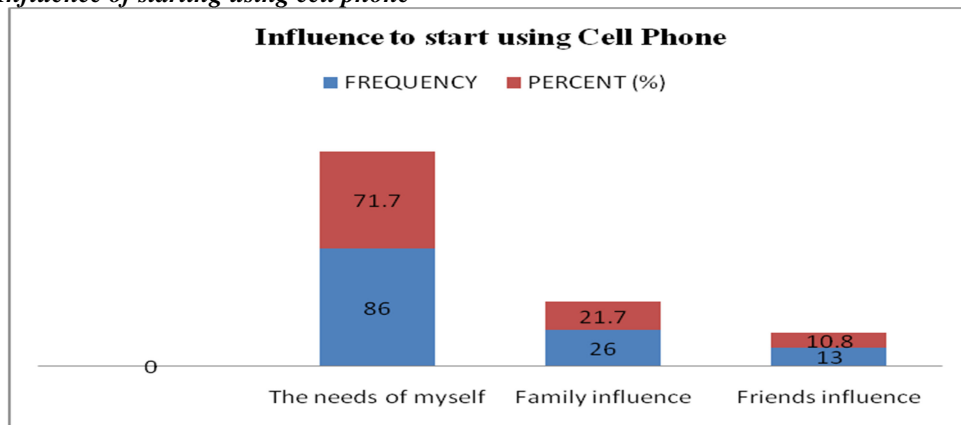
Source: Field data, (2012)

The rapid expansion of cell phone usage in Morogoro has been triggered by a highly competitive market and service diversification, with the operators now providing different cell phone services such as voice and message transmission, data services, paging as well as Internet services. In terms of market shares, the findings shows that different companies, namely Vodacom and Zain (former Celtel) Zain/Airtel, tiGO and others are faring quite well (Figure 6).

The key informant said most of people use cell phone for only keeping in conduct with their families, friends and for those in relation they use cell phone mostly by making calls and sending text messaging. With the development of the cell phone technology especially the arrival of smart phone and the web 2 tools like face book, twitter, blogs and others web 2.0 technologies; people are using cell phone to surf internet instead of using computers, another key informant insisted.



**Figure 7: Influence of starting using cell phone**



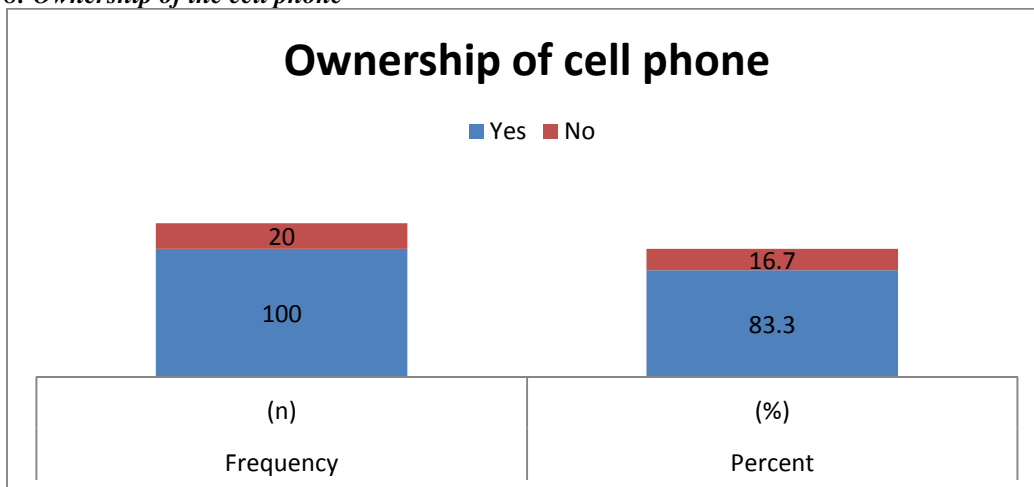
*Source: Field data, (2012)*

### 3.5 Challenges for cell phone usage in Morogoro Municipality

When asked what challenges you face in using cell phone technology, 83.3% of the respondents had negative answers on using cell phone, instead they pointed out benefits of using the technology like reducing travel needs and costs and enhancing strong social bonds.

The study shows that, 16.7% of respondents they do not own cell phone this is due to different factors like poverty and necessary limitation from parents and their teachers, this made them to see there is no benefits in owning and using cell phone. Most of the respondents who do not own cell phone were those aged between 10-20 years old, this shows that few number of people in Morogoro municipality they do not use cell phone as their own, instead they use parents (Home) cell phones and others from friends.

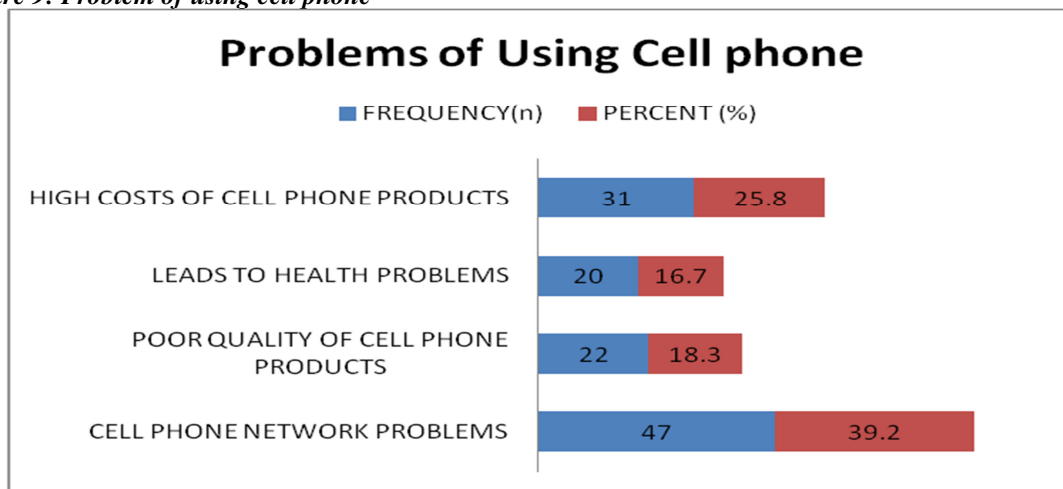
**Figure 8: Ownership of the cell phone**



*Source: Field data, (2012)*

Again, poor quality of the cell phones used by the people is another challenge of using cell phone. Cell phone from China although they are cheap so that everyone can afford to buy but do not last longer, one of the user said and insisted by key informant. (Figure 8).

**Figure 9: Problem of using cell phone**



Source: Field data, (2012)

**4. Conclusion**

The study reveals that the majorities of respondents owns mobile phones or have access to it (83.3%); and even those who do not have the cell phones they use the technology as the main means of communication from parents, friends and other nearby people. The cell phone as voice or message is used mainly for social relations and for economic-business motives for example money transactions and other family matters like buying LUKU, paying Water and Electricity bills. 83.3% of respondents acknowledged the technology to have enhanced daily activities positively. On the other hand, the cost of owning and using cell phone seems to be high and tends to put at risk the ability to meet other important household needs. The study makes several recommendations so as to boost up the use of the cell technology and thereby facilitate economic growth and poverty reductions.

Furthermore, as far as livelihood enhancement is concerned, 35% mentioned improved communication and access to information. The cell phone technology is believed to increase household income especially for those engaging themselves in cell phone business industry, such as selling air time, agents of M-banking and those employed by the communication service providers. The study came up with the following recommendations:

Firstly, need to educate the cell phone users on better and varied use of the mobile phone technology. The study revealed that there is people who are not aware of the different services they could access from their cell phones other than SMS, receiving and making calls.

Secondly, the Government should make deliberate efforts to minimize the cost of operating a mobile phone, including regulating the cross network expenses to encourage the sharing of the available infrastructure among cell phone providers. Thirdly, Government should make sure put efforts to the cell phone importers to bring the best cell phone products and not importing every product which lead to act as the damping area of poorer made cell phones.

As it is shown by this study, cell phone technology tends to enhance people’s livelihood indirectly i.e. through employment or doing business; however more needs to be revealed on the direct causal relation between the use of cell phone and people’s improved lives.

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