



FACTORS INFLUENCE THE ADOPTION OF MOBILE PHONES AMONG HOUSEHOLDS IN THE RURAL AREAS IN KENYA.

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Abstract: Mobile and wireless markets have both recorded exponential rise emerging as the fastest growing markets in the world. Just like any other innovation and development there are underlying factors that influence its adoption. The study was motivated to identify factors influencing the adoption of mobile phone technology in rural areas in Kenya. The main units of study were the households in Kiagu locations of Abothuguchi Sub- County in Meru County. One member of every household who owned a mobile phone and used the M-pesa money transfer service was interviewed. A total of 50 households were interviewed including 4 key informants. Data was collected through questionnaire and analyzed with aid of SPSS. The findings indicated that price, additional features, opinion of friends, appearance of handset and availability of low cost handset influenced the purchase decision. The study concludes the mobile phone is crucial for rural development though income level has a great role to play in the adoption. The study therefore recommends that the stakeholders in communication sector should come up with low cost technology that would lead to higher adoption of mobile technology in rural areas and also raise the standard of living.

Key Words: Adoption, mobile phones, rural areas.

1.1 Introduction

Mobile and wireless markets have both recorded exponential rise emerging as the fastest growing markets in the world. The rate of mobile subscription in Kenya according to Communications Commission of Kenya (CCK) is currently estimated to be slightly above 60 per cent (<http://mobilemonday.co.ke/2011/>). This is slightly more above half of the Kenyan population. It further indicates that mobile usage among the Kenyan population is huge. Tandon (2002) argues that most households in the rural area have no option but to remain in the informal sector and this influence the kind of telecommunication they are willing to invest in and this investment usually begins and ends with a mobile phone.

1.2 Statement of the Problem

Reducing poverty and increasing per capita incomes are primary focus of public policies in most countries in sub-Saharan Africa. Many countries in the region, including Kenya have formulated Poverty Reduction Strategy Papers (PRSP) and are determined to achieve the Millennium Development Goal (MDG) number one of reducing poverty by half and hunger by 2015. High poverty and low per capita incomes coupled with increasing vulnerability to various shocks has motivated poverty and vulnerability research in sub-Saharan Africa. The Kenya government recognizes that information and communication technologies are an engine of development and economic growth. It's therefore, increasingly making investments in poverty monitoring through welfare monitoring surveys with support from World Bank to inform policy decisions and poverty reduction interventions. One of such an investment is the innovation of mobile phone for e-commerce. Once a toy for the rich, mobile

phones have evolved in the recent times as tools of economic empowerment for the world's poorest people. It is perceived that if this innovation is taken up by individuals can help to fight poverty as well as provide a material basis for implementing strategies for addressing other social ills. However evidence of this role of mobile phones among households has been lacking. This study sought to identify factors influencing adoption of mobile phones among households in rural areas.

2.0 Critical review on adoption and Diffusion of Mobile Phone Technology in Kenya

The mobile phone specifically has emerged as one of the most dynamics forms of ICTs in the twenty first century. The rapid global spread and mobility of cellular telephony have challenged the growth rate of prior communications devices to become the technology of choice for people in most countries of the world (Akoten, 2007).

As an affordable and accessible means of communication, rural communities are realizing the potential of mobile telephony to create economic opportunities and strengthen social networks. Mobile telephony effectively reduces the "distance" between individuals and institutions, making the sharing of information and knowledge easier and more effective (<http://ict.ez-blogs.de>).

The number of mobile telephone subscribers has grown steadily (CCK, 2010) over the years since the liberalization of the Kenyan telecommunications sub-sector through the 1998 Communications Act (KCA, 1998). The act facilitated the creation of Communications Commission of Kenya (CCK) as the primary regulator of the telecommunications industry to formulate regulations, monitor, solve disputes and above all protect the interests of all users of telecommunication services in Kenya with respect to the prices charged for and the quality and variety of such services. Statistics given by International Telecommunication Union (ITU, 2010) regarding access to Information and Communications Technologies (ICT s) indicated that Africa had the least broadband subscriber base with only one million broadband subscribers. This was a meager 0.4 percent of the 281 million subscribers in the world by the end of 2006. But the figures have increased to about 12 million subscribers (ITU, 2010) as more people access mobile broadband. By the end of the third quarter of 2010, Africa had more than 500 million mobile telephone users and more than 110 million Internet users (ITU, 2010) which is more than double the 2007 figures when Africa had about 265 million mobile telephone users and 50 million Internet users (ITU, 2007).

Mobile cellular technology has a higher coverage rate in Africa than any other telecommunication technology. Cheaper infrastructure and larger regional penetration, cheaper handsets, competitive markets and business models oriented to the needs of the poorer segments of the population, such as affordable prepaid cards, have resulted in a mobile boom in Africa during the last decade (ITU, 2007). Data released by Communications Commission of Kenya (CCK, 2010) in March 2010 indicates that mobile telephone networks have a national coverage of about 84.5% of the Kenyan population and 34% geographic coverage. This 34% geographic coverage implies that large portions of Kenyan land mass are not covered by mobile telephone networks especially in the arid and semi-arid areas. On mobile technologies and financial transactions, Buncombe's (2009) analysis on mobile device-based payments in Africa indicated that use of mobile payments is conditioned by non-market factors related to financial and technical literacy. William Jack of Georgetown University and Tavneet Suri et al., (2010) of MIT surveyed Kenyan households in December 2009 and found that Mobile phone Banking (in particular M-PESA) was reaching a majority of Kenya's poor, unbanked, and rural populations. This implies that the use of Mobile phone Banking in Kenya defies the Duncombe (2009), and Boateng (2009) arguments that the overall level and pace of adoption of m-finance services in developing countries is relatively low and confined to more affluent users. Most Kenyan poor and unbanked fully embraced the use of this technology to store money and make payments. This is mainly because it offers cheaper and secure alternatives to the existing informal money transfer channels.

Most Kenyans also find it appropriate to use it for their everyday transactions. Most Kenyan rural source of income is managed by their owners and hence most technology adoption decisions are based on individuals and not organizations.

The importance of mobile telephones to African countries is enormous and has been summarized as; an infrastructure service to improve efficiency of markets, promote investment, reduce risk of disasters and contribute to empowerment (Scott, 2009). According to Eagle (2009) the boom of mobile phones in Kenya has been credited for much of the activity in its small business sector which is mostly dominant in the rural areas. He claims that adding an additional ten mobile phones per 100 people boosts a typical developing country's GDP growth by 0.6 percent. This boost comes from the innovative use of mobile phone technology by local people. Kenyan businessmen, farmers, and laborers of all sorts are finding new uses for a tool thought of as two-way voice communication devices in the traditional western paradigm and coming up with original methods for solving their own problems. One such problem is the problem of e-commerce. Initially this form of business was transacted via computers using the internet and by land line telephones locking out the rural people as these are urban technologies. Mobile commerce a sub set of e-commerce was revolutionalised by the innovation of mobile phones. It refers to the buying and selling of goods and services through a hand held device. It also includes the storage, payment, receiving and sending of electronic money by mobile phones (Mendes et al 2007). An example of electronic money transfer in Kenya is M-Pesa. According to William et al (2009) M-Pesa is the most popular money transfer in Kenya, and its growth is stronger than for previous financial options such as banks and postal services.

According to the report by United Nations Economic and Social Council (2009), M-pesa is an important tool for development in poor countries because of its ability to by pass the infrastructure barriers in remote rural areas in Kenya. McCoy and Smith (2007) argue that people in the rural areas are welcoming M-pesa service as a life changing innovations. M-PESA empowers rural people by making it easier for them to solicit funds from their relatives and friends and other contacts in the city. The mobile phone, in conjunction with M-PESA, is a powerful tool for mobilizing remittances. Before these technologies were introduced, rural people had to travel to the city or post office by bus to get money. They then had to travel back to the village. This process could take over a week. Now they can use a mobile phone to request a remittance and receive it at a nearby agent, making it easier for them to solicit funds from their people in the city (<http://www.cgap.org>).

M-PESA (mobile money in Swahili) has taken off as a mobile branchless banking service that opens up basic banking facilities such as transfer of cash to low-income people who would ordinarily not have access to such services. Difficulties and the expense in transferring money has been a longstanding problem in East Africa, especially given the reliance on urban to rural remittances that sustain many rural households. Using mobile phones to effectively 'text' financial transactions that can be cashed in via a network of thousands of M-PESA agents has become an increasingly popular way to share resources, smooth household income and solidify financial arrangements. The technology has huge potential; facilitating micro credit for small scale entrepreneurs, acting as a place to virtually store money and most importantly as a means to transfer resources internationally – particularly important given that remittances into Africa are currently worth double the total amount aid that flows into the continent.

3.0 Materials and Methods

The data on factors influencing the adoption of mobile phone technology in rural areas was collected from Central Imenti constituency of Meru County in Eastern Kenya. The main units of study were the households in Kiagu locations of Abothuguchi Sub- County in Meru County. One member of every household who owned a mobile phone and used the M-pesa money transfer service was interviewed. A

total of 50 households were interviewed including 4 key informants. The study employed simple random sampling to enhance the representativeness of its findings. This method ensured that the whole population was adequately represented in the sample so as to increase their level of accuracy when estimating parameters. The study was based on primary data collected from the site. The main tool of data collection was structured questionnaires where respondents were subjected to face to face interviews. The data collected for this study was checked for completeness and consistency before processing. Checking was done with the view of detecting errors and omissions and other discrepancies in the filled questionnaires. This was to guarantee that quality data and reliable results were obtained. The data was then coded and entered into an SPSS programme to run frequencies.

4.0 Results, Analysis, Discussions and Conclusions

The study sampled 50 respondents who possessed a mobile phone. A total of 4 key informants were also interviewed, specifically to provide deeper insight into the relationship between mobile phone adoption and household income outcomes. The response rate for the key informants was also 100%. Those interviewed were mobile money transfer agent, the local chamber of commerce representative, co-operative society officer and a local leader (chief).

The findings illustrated in table 1 indicated, 64% of the total respondents rated commercial needs as one of the main factor which influenced them. The respondents further rated price and additional features such as radio, internet or camera on the handset as factors that influenced when making a purchase decision. Opinion of relatives and friends, ease of use and special offers from dealers influenced 6% of the respondents while only 2% were influenced by physical appearance of the mobile handset. It was interesting and surprising to find that price did not greatly influence the purchase decision, yet the residents of Kiagu location are low-income earners as shown in Table 1.

Table 1: Factors influencing decision to acquire a Mobile Phone

Reasons for acquiring a mobile phone	Frequency	Percent	Valid Percent	Cumulative Percent
Price	4	8.0	8.0	8.0
Physical appearance	1	2.0	2.0	10.0
Additional features such as radio, internet or camera	4	8.0	8.0	18.0
Opinion of relatives and/or friends	3	6.0	6.0	24.0
Ease of use	3	6.0	6.0	30.0
Special offers from dealers and mobile phone service providers	3	6.0	6.0	36.0
Commercial needs	32	64.0	64.0	100.0
Total	50	100.0	100.0	

The study found out that 80% of the respondents had purchased their mobile phone from a mobile shop/dealer, 16% of the respondents were given a mobile phones by their relative/friend at no cost and a mere 4% of the respondents received their handsets from their employers with monthly deductions from their salaries. Ability to purchase a mobile handset is therefore a major determinant of mobile handset ownership as the most of respondents purchased their mobile phones. This is explained further by the fact that all the respondents in the sample were found to have some sought of income.

5.0 Discussion of Findings

The findings from the study indicated the factors that influence the adoption of mobile technology within Kiagu location. It was established that most of respondents had purchased their mobile phones from mobile shops/dealers. The fact that these people are willing to buy mobile phone using their low

incomes shows that this technology is valuable. Further, as implied by the literature review, the availability of low cost handsets is also a key factor in influencing the adoption of mobile phone technology within the rural areas such as Kiagu, owing to the fact that majority of the respondents 48% comprise of low income earners.

6.0 Conclusion

The study concludes that mobile phone technology has become an integral part of communication in the rural areas. For accelerated economic development mobile phones has become an essential item in the rural areas. Despite the need for communication the adoption of phone in rural areas is highly influenced by the income levels of the potential customers and users of mobile phones. The advertisements made regarding phones have a role to play too in influencing the need and decision to own a mobile phone.

7.0 Recommendations

The study recommends that stakeholders in the telecommunication sector should endeavor to introduce other low cost forms of technology such as computers and laptops in affordable prices for the rural people. This could further economic development in Kiagu. This would in turn raise the standard of living for the rural residents and move the nation towards fulfilling their millennium goals of eradicating poverty.

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