Awareness and use of cellphone banking among low income communities in rural areas in South Africa

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Abstract
Information and Communication Technology (ICT) through mobile technology such as cellphones enhances the way individuals communicate, manage their private affairs and even do banking. This study investigates the understanding and knowledge of cellphone banking by rural communities who stand to benefit the most from it. A qualitative approach was followed where individuals from informal settlements of Gugulethu and Nyanga were interviewed, to determine whether they acknowledge the existence of cellphone banking and to understand their reasons for non-usage. The findings show that the vast majority of remote individuals do not use cellphone banking; some do not even know that it exists whereas some of those who know about it choose not to use it for known reasons. There are several issues that could possibly make rural individuals not to use or even trust cellphone banking. Therefore, maybe banking institutions need to initiate a marketing strategy that would best suit the rural individuals. Maybe South African government should intervene because they strongly emphasise on the need for rural development.

Key words: ICT, cellphone banking, internet banking, network connectivity, mobility, mobile technology, e-tailer, remote areas, rural.
1. Introduction

The new information and communication technologies (ICT) have redefined the way modern societies conduct their academic, business and social lives. With the convergence of services delivered over networked technology tools such as computers and mobile phones, learning, working and entertainment has not only become easier, but also reachable to the most remote communities who could otherwise not be reachable through traditional none-mobile, stand-alone services.

One of the convenient but also the most accessible technology tool is the mobile phone. Additional capabilities have further seen an increase in its versatility. With the internet now accessible over mobile phones for example, it is now easier for people without the traditional internet connection to access inter-networked services. It has also become possible for rural and remote communities to use their phones to conduct various necessary services online. For example, they may use their mobile phones for internet or cellphone banking, and to pay for rates and services without having to travel long distances to towns to perform these tasks.

Whilst the mobile communication technologies offer numerous life-improving opportunities for the majority in underprivileged areas, unless the services are known and understood, people are not likely to exploit their benefits. This paper investigates the extent to which cellphone banking is understood and used by rural and remote populations to simplify the way they do banking and pay for services. To this end, a problem statement, a research problem, objective and a research question are outlined in sections 2.1 to 2.3.1. The rest of the paper is structured as follows: Methodology (section 3), literature review (section 4), findings (section 5), as well as the conclusion and limitations of the study in section 6 and 7.
2. Problem Statement

A distinction can be made between the traditional and the new ICT-based methods of doing banking, with the new methods adding flexibility and mobility. With internet banking for example, one can access banking services in the comfort of their home or office, even beyond the traditional banking hours. The problem with internet however, is that it remains a distant luxury for most people in remote and rural areas in the developing world (Bridges.org Online, 2001). Whilst the vast majority of people in remote areas would struggle to use internet banking due to a lack of access to computers and internet, almost everyone have a cellphone, hence cellphone banking is more accessible than other forms of networked banking.

Drawing on the GSM Association (2006) report, Ivatury and Pickens (2006: 1) indicate “the mobile phone” as having become “the first communications technology to have more users in developing countries than in developed ones”. Statistics showing more than 800 million mobile phones having been sold in developing countries between 2003 and 2006 (GSM Association 2006) supports this claim. Thus “mobile phone usage expands “, argues Ivatury and Pickens (2006: 1), “so many opportunities to bank the un-banked”.

Cellphone banking has extended mobility advantages. It extends the mobility in that one is no longer constrained to networked offices or home, and can do banking from any locations where there is cellular network connectivity. In addition, cellphone banking could save people in rural and remote areas time and money in terms of travelling fares and bank charges, as almost all cellphone banking transactions are free of charge. Time is also saved, as people will not have to visit their banks as often as they used to.

2.1 Research Problem

Despite the advantages presented by cellphone banking, there is still a vast majority of people in rural areas who are not utilising it. According to the study conducted by Ivatury and Pickens (2006), 300 out of 515 low-income bank clients (in the study) do not use cellphone banking. Given the advantages of cost and process efficiency of cellphone banking non-usage means continued costs on long distance travelling to and from the banks. It also means continued expenditure on heavy bank charges for transactions they could otherwise avoid through cellphone banking. Whilst cellphone banking promises to simplify the way banking is conducted, the lack of access to this facility by remote and rural people means they cannot make full use of banking services and its related benefits. This therefore is not in line with government policies in many developing countries such as South Africa that strongly emphasise the need for rural development, and social equity.
2.2 Research Objective

Given the research problem, this study seeks explanations on the limitations or lack of cellphone banking usage by people in remote areas who stand to benefit the most from the facility. The objective of this study is to understand the causes, understand the needs, and ultimately find solutions to challenges of non-usage by people in remote areas. To this end, research questions are raised in section 1.4 to address this objective.

2.3 Research Question

To achieve the objective of this study, clarity is sought on the extent to which cellphone banking is known, understood and used by people in remote and lower income areas. A question is then asked: “how is cellphone banking understood and used by people in remote areas in South Africa?”

To facilitate this enquiry, key concepts on this research question are clarified under conceptualisation in section 1.4.1

2.3.1 Conceptualisation

The three concepts that are central to a given research question are cellphone banking; the understanding of cellphone banking, and remote areas:

Cellphone banking - is defined as carrying out banking transactions and other related services via a cellphone, either through menu-driven or SMS technology (Tiwari, 2006).

Understanding of Cellphone banking - refers to the knowledge of the existence of cellphone banking, its advantages and how to go about conducting it.

Remote area - is an isolated area where normally poor people live (Allen & Delahunty, 2002). These areas are normally the last to get any development e.g. public services. Reference to the term “remote individuals” refers to the people who live in remote areas.

A representative sample of remote individuals to be used as data sources is discussed under the methodology section.
3. Research Methodology

The proposed study will follow a qualitative method approach in order to understand remote people’s understanding, knowledge and acceptance of cellphone banking. According to Maree, et.al, (2007:257), a qualitative method seeks to explore and understand a “central phenomenon” which is the concept or process explored in this study is cellphone banking.

Table 1 represents the sampling process, which outlines the units of analysis, units of observation, data sources, data collection tools, and the outline of the number of participants.
### Table 1: The Sampling Process

<table>
<thead>
<tr>
<th>Questions</th>
<th>Data Source</th>
<th>Tools</th>
<th>Units of Observation</th>
<th>Number of Participants</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cellphone banking descriptive information</td>
<td>Literature</td>
<td>Reading; analysing</td>
<td>Websites of: ABSA; FNB; Nedbank; Standard Bank</td>
<td>4 institutions</td>
</tr>
<tr>
<td>Background &amp; Methodology content</td>
<td>Literature; Reading; analysing</td>
<td>Academic Books, Journals; Internet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bank strategies to market cellphone banking</td>
<td>Banking institutions</td>
<td>Reading, analysing</td>
<td>Websites of: ABSA; FNB; Nedbank; Standard Bank</td>
<td>4 institutions</td>
</tr>
<tr>
<td>Knowledge &amp; usage patterns of cellphone banking</td>
<td>Individuals from remote areas</td>
<td>Interviews; Questionnaires; Analysing</td>
<td>Men and women with income; in the age of 25 – 50; residing in Gugulethu &amp; Nyanga informal settlements.</td>
<td>10 men 10 women</td>
</tr>
</tbody>
</table>

Four units of analysis, cellphone banking descriptive information, background content, bank marketing strategies, and knowledge of cellphone banking are outline in Table 1. Data to describe cellphone banking was sourced from literature, more specifically, the websites of the four bank institutions: ABSA; FNB; Nedbank; Standard Bank which are the units of observation in this study.

Background and methodology data is also sourced from literature, including books, journals and the internet. Similarly, data on bank strategies to market cellphone banking was sourced from banking four selected banking institution’s websites. Lastly, data on knowledge and usage patterns of cellphone banking was sourced from 20 individuals (10 men and 10 women) between the working ages of 25 and 50 are temporarily residing in informal settlements of Gugulethu and Nyanga in the Western Cape. Reading and analysing the content of the literature, as well as conducting interviews with bank officials and with individuals, were the data collection tools used in this study.

## 4. Literature Review

### 4.1 The Promise of ICT

Information and Communication Technology (ICT) has become a significant part of almost all aspects of our modern lives. Networked ICT such as computers, internet and mobile technologies such as cellular phones for example, enhance the way people and organizations communicate, learn and conduct business.
When wisely applied, networked technologies can improve the way people (either as individuals or groups) communicate, learn, work and enjoy convenient access to basic services (Green, 2001 & Haddon, 2005). According to Haddon, (2005) internet has a potential to connect people across different cultures, regardless of location (Green, 2001). With internet connectivity, individuals can use listserver-supported email tools to send messages to other users anywhere and at anytime (Preece, 2001). The sending and receiving of emails is cost-effective and an easy means of exchanging and sharing information locally and internationally (Green, 2001). According to Haddon (2005), email has replaced letter writing and has displaced faxes, which makes private and business communication much faster, efficient and convenient. Social networks as an emerging tool are adding an interactive convenience to internet-enabled communication (Haddon, 2005). The most popular social network is Facebook. In social networking people create their own space or homepage, where they write blogs, post pictures, videos and music; and share ideas with those who share similar interests (Turban, et al., 2007). For instance, a group of students can share their learning experiences, ideas and new opportunities.

4.2 Inter-connectivity & Service Convergence

Mobile technology such as cellphones has equally improved the way individuals communicate and manage their private affairs. When cellphones were introduced one of the few advantages they had was portability. As calls can be made on movable gadgets other than on fixed telephony lines, we are no longer constrained to stay at the home base to wait for messages (Mante-Maijer et al., 2001; Palen, et al., 2001) found in (Haddon, 2005). Other added advantage of cellphones is the ability to send text messages at a fraction of a phone call cost, and that one text message could be sent to several recipients at the same time (Turban, et al., 2007). Cellphones are becoming more advanced every day. They have many features beyond sending messages and making calls. According to Gartner Inc. as found in Turban, et al., (2007) by year 2009, close to 90 percent of mobile devices will have features for sending and receiving email. This prediction was already confirmed in 2008, and by 2009 3G cellphones could do even more – that is, in addition to the basic functions one can also send email, listen to radio, play music, play videos and transfer data files through the Bluetooth function.

In learning environments, Internet-connected computers have offered new opportunities for learners by enabling them to work together, exchange information, comment on each other’s work and share resources in the comfort of their homes (Preece, 2001). This gives students easy access to learning information and familiarity with the internet world. With the rapid increase of
internet usage, the days of learning by being constrained to specific times and confined to particular places are disappearing (ibid.). Due to internet capabilities, there are institutions that offer distance education such as UNISA, one of South Africa’s distance learning institutions. Before internet and computers, distance learning institutions used to offer learning materials in a form of printed papers and audio cassettes; but that has been replaced by electronic material supported by commercial software, such as WebCT and Blackboard (Preece, 2001). “WebCT provides entire educational environments, comprising communications software for discussions, Web pages for presenting information and support tools that assist instructors or educators to prepare quizzes” (Preece, 2001:60). WebCT is for both learner and educator use. They can draw illustrative material and even ready-made lessons from remote databases and students can learn databases from home (Hill, 2001). After all education is about being empowered to learn rather than about being dependent on the teacher for acquiring skills and knowledge (ibid.).

The use of ICT’s such as internet, intranets and mobile computing are also changing the way organizations communicate and do business (Turban, et al., 2007). Organizations use the internet to connect computers and other electronic devices via telecommunication networks. This enables individuals within organizations to access information stored in various places and be able to communicate (ibid.). Intranet is a network designed to serve internal informational needs of the organization, using internet concepts (Turban, et al., 2007). Organizations use the internet to provide information to the public about their products and services (ibid.). The use of the mobile phone has made communication easier for business people who travel regularly as it enables them to manage their affairs remotely while travelling, and this indicates mobility aspect of ICT (Haddon, 2005). As for employees, they are now able to access their company network from home through a desktop computer and wireline connection or be on the move with a laptop or PDA via wireless connection (Turban, et al., 2007). As most businesses are becoming internet dependent (some being solely internet based), like Kalahari.net; referred to as e-Tailer (Pather, et al., 2006). With such businesses, it becomes a challenge for people with all these technologies (internet, cellphones) if not fully equipped to utilize them.

Almost all banks offer electronic banking which comprises of internet banking and mobile banking (cellphone banking). Mobile banking as defined by Turban, et al., (2007) is carrying out banking transactions and other related activities via mobile phone. Mobile banking is a more convenient way of banking, as people have unlimited access to their financial services and can make transactions anytime, anywhere. However, even with all these services available to people, it is quite a challenge when people are not knowledgeable to use their computers and mobile gadgets.
to access and benefit from these services. Through mobile banking, ICT improves the convenience of doing banking as people do not have to queue at the banks to make certain transactions. For an individual or even a business person, it means that they do not have to be at their offices or internet cafés to access internet and do banking but can actually do banking on their cellphones or PDA’s. The aim of this study is to investigate the extent to which the benefits of this innovation are understood and exploited by all sectors of the community, especially those in remote areas distant from banking institutions.

4.3 Cellphone Banking

Cellphone banking is a convenient banking channel to manage your finances and is carried out through a cellphone handset. It enables individuals; for example, to check their bank balances, transfer funds between accounts, make payments to beneficiaries, enquire bank statements and buy airtime, anywhere, anytime (ABSA Online, 2009; SBSA Online, 2009; FNB Online, 2009; Nedbank Online, 2009). With cellphone banking people are now no longer restricted to normal banking hours or geographical boundaries (ibid.).

According to First National Bank (FNB) Online (2008) and Nedbank Online (2009), any valid Subscriber Identity Module (SIM) card can be used for cellphone banking. To register for cellphone banking you need to have a valid Identity Document (ID) number, bank account, a valid card number (the number written outside your bank card), as well as the auto-teller machine (ATM) pin number (ABSA Online, 2009; SBSA Online, 2009; FNB Online, 2009; Nedbank Online, 2009). Individuals can register for cellphone banking at their nearest bank branch, via their cellphones or by calling a 24-hour service line dedicated for cellphone banking (ibid.). Once you get registered, the banking menu is downloaded into your cellphone; for MTN users it is called MTN Menu, Vodacom it is called Vodata (ABSA Online, 2009).

The authors of this study draw insight from the Amalgamated Banks of South Africa (ABSA), FNB, Standard Bank of South Africa (SBSA), and Nedbank online banking sources to describe three optional methods of conducting cellphone banking transactions. The paint program was used to construct graphical representations of these methods in figures 1 to 5, which are the Menu-Based; SMS and WAP methods.
Figure 1: shows ABSA menu-based cellphone banking between MTN and Vodacom.

Figure 2: shows FNB SMS-based cellphone banking option; where you dial *120*321# then green button on your cellphone. Then a responsive SMS is sent to the user’s cellphone requesting the MOPIN (is a 5-digit cellphone banking pin which you will be required to select at registration) (FNB Online, 2009). The user will then receive different transactional options they can perform. The FNB
SMS-based cellphone banking is similar to other banks'; only differing in the SMS number users send their request to.

**Figure 3: WAP**

![WAP screenshot](image)

Figure 3: shows how to access the cellphone banking via WAP and Figure 4 below shows the log on screen, which is similar to that of menu-based cellphone banking. It also requires account number, user number and Personal Identity Number (PIN).

**Figure 4: Log on steps to WAP**

![Log on steps screenshot](image)

The cellphone banking facility is encrypted by the same 124-bit encryption used for internet banking. As part of security measures, individuals get notification via a text message, on any
activity on their account (ABSA Online, 2009; SBSA Online, 2009; FNB Online, 2009; Nedbank Online, 2009). Every time you log on, you need to provide an account number, user number and PIN number created at registration. Individuals are encouraged to keep their PIN number safe at all times by not sharing it with anyone to ensure safekeeping of their accounts and to change their PIN numbers regularly (ibid.).

Figure 5 shows log in process for ABSA Menu-based cellphone banking service which is the same with the other banks; hence only one example is represented.

3.1.1 Uses of cellphone banking

This study clarifies the advantages of using cellphone banking. It simplifies the process of doing banking by offering most banking transactions through cellphone banking. It also reduces bank charges because cellphone banking is free of charge, though your cellphone needs to have credits (airtime) for you to start transacting. It also saves money in terms of travelling costs as you conduct banking in the comfort of your office or home. It offers convenience of mobility as you can...
conduct cellphone banking anywhere where there is cellular phone connectivity. Cellphone banking is also well-known for its accessibility (anytime, anywhere) feature however there are connectivity issues attached to it more especially “in areas with unreliable wireless connectivity” Mas and Kumar (2008:3). The anytime, anywhere feature of cellphone banking depends on the availability of the network provided by Mobile phone service providers such as MTN, Vodacom, Cell C, Orange, or Vodafone, among others, which is readily available in most rural areas. However, these amazing benefits are infeasible to those who are not aware of them, or to those who are not literate enough to appreciate and exploit them.

Even for the literate, Mas and Kumar (2008) argue that when customers use the cellphone banking service for the first time, it is quite confusing but the more they use it, the more they get familiar with it and start appreciating it. It should be even be harder when one is not made aware of the facility.

5. Findings

The interview was conducted on ten women and ten men residing in informal settlements of Gugulethu and Nyanga in the Western Cape to represent the rural people; see Appendix A for interview questions asked to the participants and Appendix B for their responses. The research objective was to learn how people in low income and remote areas in South Africa understand and use cellphone banking. To address this question, respondents were asked to describe their understanding of cellphone banking (see Appendix A and B).

In terms of the findings, twenty participants (ten women and ten men) were interviewed. On the understanding of cellphone banking, only one out of twenty participants understood and was using cellphone banking to its full potential. This participant stated that she uses cellphone banking for transferring money to her kids at home in the Eastern Cape, buys airtime and checks balances on her account (Female #1). According to this lady, the most outstanding advantage of cellphone banking is the fact that it can be carried out anytime, anywhere without having to queue at the bank. Whilst one out of twenty participants is a statistically small percentage, the advantages of cellphone banking described by this single participant confirms arguments in the literature that the facility improves convenience, saves time and improves efficiency in conducting banking transactions (Mass & Kumar, 2008).

Nevertheless, the rest of the participants had limited to non-existent understanding of the concept of cellphone banking. For example, five male and seven female participants said that they are
using cellphone banking for receiving notifications, which is a very limited interpretation of cellphone banking. In effect, cellphone (mobile banking) as defined by Turban, et al., (2007) is more than just receiving notifications of transactions, but encompasses carrying out banking transactions and other related activities via mobile phones. There is a difference between understanding the concept, but choosing to use only a fraction of the package, and reducing the meaning of the concept into just one aspect of the phenomenon. Assuming that receiving notifications is all that is meant by cellphone banking therefore, suggests a very minimum understanding of the phenomenon of cell-phone banking among people in remote areas. The rest of the participants did not know anything about cellphone banking. This means that these people will not incur the benefits of cellphone banking, such as saving on travelling costs to and from the bank, saving on banking charges (as indicated in section 3.1.1). The status-quo brings into the questions the efficacy of the awareness initiatives and marketing programmes of the local banks, at least in getting the message through to the rural and low income customers.

There seem to be misperception among some participants that cell-phone banking is for a specific type people in a certain economic and income bracket. One of the reasons for not bothering understanding and use cellphone according to Female #6, is that it “is probably for the rich people”. It is an unfortunate misperception because cellphone banking is designed for everyone from rural to urban areas. Others are purely sceptical. For example, after the facility was explained, one participant (Male #6) cited a number of security threats relating to a high rate of banking scams reported, to dismiss the value of cellphone banking. A lack of awareness, and therefore non-usage of this facility among low income people from remote areas in South Africa is therefore, apparent. To this effect, Mass and Kumar (2008) state that cell-phone banking is always confusing for clients at initial stages, and the apparent clueless-ness suggests a need for increased vigilance in awareness and educational campaigns on the subject. As indicated in section 4.3 of this paper, cellphone banking is designed with security measures like passwords; encryption and notifications on account transactions and customers would benefit from the facility if they could be sensitised to this effect.

6. Conclusion

The findings in this research shows that people in remote areas are still not benefiting from innovations of cellphone banking as envisioned by banking institutions. Responses to research questions on the understanding of the concept show a clear lack of awareness about the facility among this segment of the population. There could be other underlying causes or reasons like
illiteracy and even lack of knowledge when it comes to their cellphone devices. A partial explanation to the status quo can be linked to a comment by Len Pienaar (2008), the CEO of FNB’s Mobile and Transact Solution, saying that their “cellphone banking is not only offering innovative solutions but also targeting the mainstream market which is where their development strategy was focused”. If FNB’s cellphone banking strategy is targeted at the mainstream market, then the answer lies in what is meant by the “mainstream market”. It is questionable whether the low income, remote and rural population is included in this category, as the majority of this sector is still “in the dark about” the basic meaning and the practical intricacies of cellphone banking. At this point we can conclude that remote individuals have a limited knowledge of cellphone banking.

Cynics may argue: “why make such a fuss about the use or non-usage of cell-phone banking among the rural community?” From the digital divide perspective however, it is evident that rural communities experience complex social conditions where they need to travel long miles to towns only to check if there has been a deposit in their accounts. To this effect, cell-phone banking may not be a luxury but a cost saving and an absolute necessity for rural people. To answer “how is cellphone banking understood and used by remote individuals in South Africa?” rural people are still not benefiting from cellphone banking innovation. A challenge therefore arises for both the financial institutions and local development entities, to embark on educational and awareness campaigns on the meaning, the benefits and the practical intricacies of cellphone banking among the rural people.

7. Recommendations

Considering that the majority of those who stand to benefit most from cellphone banking are still not using it, maybe banking institutions need to use another marketing strategy that would best suit the rural market. They further need to ensure that security measures are in place to address concern of security threats raised during the interviews. The individuals need to do their bit as well, for instance ensuring that they know their cellphone functionalities as lack of knowledge might expose them to further security risks.

8. Limitations of the study

There were various limitations during the course of this study; time was the biggest issue because this subject is only for a year with other subjects to focus on while having a full-time job. Another factor was a lack of co-operation from banking institutions hence they were not interviewed for this study; the information used was extracted from their websites. Since this project is for learning
purposes there was no funding available to visit the rural areas for interviews hence sampling was done on individuals residing in Gugulethu and Nyanga informal settlements.
9. References

Bridges.org, 2001, “Telecommunication liberalization – what does it mean for the average citizen?


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Online FNB, 2009, http:\www.fnb.co.za

Online Nedbank, 2009, http:\www.nedbank.co.za


10. APPENDICES

APPENDIX A:

Interview Questions for Individuals:

1. Do you know what cellphone banking is?

1.1 (if yes) please elaborate

2. How did you hear about cellphone banking?

3. Have you used cellphone banking?
   (If no) why?
   (If yes) please elaborate

What are you using cellphone banking for?

4. What did you find difficult about cellphone banking?

5. What did you like about using cellphone banking?
APPENDIX B:

Participants on interview conducted in Nyanga and Gugulethu informal settlements

<table>
<thead>
<tr>
<th>MALE</th>
<th>FEMALE</th>
</tr>
</thead>
</table>
| **Female #1:** | **Male #1:**  
1. Yes – (she knows cellphone banking).  
   1.1 It is when do banking through your cellphone like buying airtime, checking your balance or transferring money.  
2. She heard about it from a family member.  
3. Yes, for balance on her bank account and buying airtime.  
4. Nothing it was all easy.  
5. The fact that you can use it anytime and anywhere without standing on queues. | No, he doesn't know anything about cellphone banking. |
| **Female #2:** | **Male #2:**  
1. yes,  
2. She uses it for notifications only | Only uses it for notifications. |
| **Female #3:** | **Male #3:**  
1. yes  
2. She uses it for notifications only. | Only uses it for notifications. |
| **Female #4:** | **Male #4:**  
1. She knows about cellphone banking but not using it.  
2. A bank teller informed her about it. | Never heard of cellphone banking. |
| **Female #5:** | **Male #5:**  
only uses it for notifications | Only uses it for notifications. |
| **Female #6:** | **Male #6:**  
1. No, she never heard of it.  
2. She also said it’s probably for “rich” people. | I have heard about it but would not use it for security risks attached to it, relating to the banking scams happening. |
| **Female #7:** | **Male #7:**  
Notifications | No, I don’t use cellphone banking but was told about it at the bank. |
| **Female #8:** | **Male #8:**  
Notifications | Only uses it for notifications. |
| **Female #9:** | **Male #9:**  
Notifications | Only uses it for notifications. |
| **Female #10:** | **Male #10:**  
Notifications | No, I don’t use cellphone banking but was told about it at the bank. |

Factors affecting cellphone banking usage patterns in remote areas