

## **Factors affecting the Adoption of Mobile Banking by Rural People: With special reference to Kalutara District**

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### **Abstract**

*Financial services are not easily accessible to people in remote rural areas. In a contemporary business environment, financial institutions close bank branches in difficult areas due to the costs associated with maintaining branches. As a result, people in these rural areas are excluded from joining the financial sector. Mobile banking allows individuals to access banking services anywhere, anytime. Despite the existence of mobile banking, those who need financial services do not follow it. Although people in rural Sri Lanka have access to mobile phones, this does not lead to mobile banking. This study examines the factors influencing mobile banking among the rural population in the Kalutara district of Sri Lanka. Accordingly, a survey questionnaire was prepared and used to collect data from 399 respondents in five rural divisional secretariat divisions in the Kalutara district using cluster sampling method. The results of the study contribute to knowledge by illustrating that it is not essential for individuals to adapt to mobile banking, whether they own or use a mobile phone. The study revealed that people's context as well as awareness, usefulness, cost, complexity, trust, and relative advantage influence mobile banking adoption in rural areas. As the mobile banking system is in its infancy in the rural market, users are more sensitive to the cost, ease of use of the system and trust in the bank than the information and service quality that the system can provide. Therefore, banks can devise appropriate strategies with the current demand of the users and future changes.*

**Key words:** *Adoption, Mobile banking, Rural area, Rural people.*

### **1. Introduction**

“Banking on the Internet and Mobile Era” Internet and mobile technologies have a significant impact on the internal operations of banks, the value chain of the entire financial industry and the way banks interact with their customers

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(Roger, Alt, Lee, & Weber, 2012). However, mobile technology in the form of mobile banking has radically revolutionized the financial services landscape by providing access to financial services and enhancing communication with people in the developed and developing world (Ramnath, 2018; Gunarathna, 2021). Mobile Banking (M-Banking) has created a new convenient, fast delivery channel for customers to enjoy banking services from anywhere, anytime. It is defined as the channel through which a customer deals with a bank through mobile devices such as a mobile phone and a Personal Digital Assistant (PDA) or providing and receiving banking and financial services with the help of mobile communication devices (Ravichandran & Madana, 2016). The mobile banking platform integrates payments, banking, and real-time, two-way data transmission. It innovates the financial services provided using Information and Communication Technology (ICT).

The Banking and Finance sector in Sri Lanka is one of the first ICT users in Sri Lanka. Today it has become one of the most used users of technology. The way a bank uses the Internet to provide services to its customers varies using the Internet for financial transactions. Nowadays, Sri Lanka has recorded a strong increase in internet penetration and smartphone usage. In 2017, the internet penetration rate in Sri Lanka was recorded at around 35% (Ayoobkhan, 2018). According to the Census of Population and Housing, (2012) Sri Lanka has the highest literacy rate among other South Asian countries. At the same time, the average income of Sri Lankans is higher than that in India, Pakistan, Bangladesh, and Afghanistan; The move will move online businesses a stronger foothold in the region. However, according to the Central Bank of Sri Lanka, there is a significant upward trend as of September 2017; There are 1,515,299 active credit cards in use. Of these, 41,289 are recognized locally and 1,474,010 (over 94%) globally. As indicated above, Sri Lanka is experiencing tremendous growth in computer usage and Internet penetration.

Against this background, however, it is observed that there are significant challenges that limit the adoption and use of mobile banking. This is evidenced by the fact that the use of mobile banking services is much lower than originally expected and not yet in use and the mobile banking market is still very small compared to the overall banking transaction (Ravichandran & Madana, 2016). Therefore, defining the factors that lead to less use of m-banking services that are not yet fully operational will enable Sri Lankan banks

to, on the one hand, motivate their customers for these services and fine-tune development options and implementations. As Sri Lankan consumers do not adequately address the existing literature on banking usage, this study seeks to fill this gap by conducting an empirical study to examine the factors affecting the adoption of mobile banking in Sri Lankan rural consumers to use m-banking. Therefore, to promote the use of M-banking, it is important to identify the factors that influence the use of m-banking. In this way, the inquiry seeks to provide a useful picture of customer cognition of mobile banking in rural areas.

Accordingly, the objective of this study will be,

- To identify the factors affecting mobile banking adaptation in rural areas.

## **2. Literature Review**

### ***2.1 Empirical review of the Adoption of Mobile Banking***

Yu, (2009) using 250 university students from New Zealand, studied the factors influencing clients' decision to use a specific form of mobile banking and focused on evaluating mobile banking based on SMS. The results revealed that context-specific factors such as service quality and service awareness affect users' perception of the usefulness of SMS mobile banking. The study focused on a specific form of mobile banking (SMS-based mobile banking). Gaffar, (2009) studied the banking customers' perspectives on adopting or introducing mobile banking in Ghana. A sample of 100 students (customers) was randomly selected. Consumers' perspectives proved to be extremely positive. The most appreciated feature was the omnipresence of the service. The others were a connection and secure communication platform as well as an encrypted messaging system. These were found to be factors that enhance the activation of mobile banking in Ghana. Furthermore, factors such as technical and security standards, regulatory and oversight issues, and business and legal issues were found to be hindering Ghana's mobile banking operations. The rapid response to market developments often cited as the most attractive aspect of mobile banking was not appreciated.

Masinge, (2010) studied the factors influencing the use of mobile banking services at the bottom of the Pyramid (BOP) in South Africa. The research focused on trust, perceived cost, and perceived risk (performance risk,

security/privacy risk, time risk, social risk, and financial risk) as BOP's customers considered mobile banking to be useful and easy to use, according to the study. The most crucial installation factor has cost, that is, the service should be affordable. It was also noted that customers can be trusted by both mobile banking service providers, banks, and mobile network providers. Confidence has been found to be significantly negatively associated with cognitive risk and therefore trust plays a role in mitigating risk and increasing consumer loyalty.

## ***2.2 Factors affecting the Adoption of Mobile Banking***

Past empirical, mobile banking research has also put forward various theories to test adoption intentions, demonstrating different results. Previous research has found that the realization of new distribution networks that can be done with technology such as mobile banking largely depends on consumer adoption (Jain & Agarwal, 2019). It is therefore important to examine the factors that influence consumers to adopt mobile banking. Accordingly, awareness can be stated as one of the influencing factors for mobile banking. It can be seen as an obstacle to mobile banking acceptance and adoption. In their study of awareness of internet banking, Elhajjar & Ouaida, (2020) conclude that awareness reduces the risk of misunderstanding. Awareness of them is also considered an important factor influencing adaptation and attitude towards mobile banking.

Also, complexity can be cited as one of the factors affecting the adoption of mobile banking. Complexity is the level at which an innovation is difficult to use and understand. It often measures cognition about the purpose of the relevant innovation, its intended use, and its ease of use (Gerrard & Cunningham, 2003). Previous studies of technology-based innovation have shown that the more sophisticated innovations need to be used and the more skills and effort required to adopt them, the less likely it is to be adopted (Tan & Teo, 2000). Relative advantage can also be cited as another factor influencing the adoption of mobile banking. The relative advantage is the level at which an innovation is perceived as better than the idea of overcoming it. Relative advantage levels are often expressed in terms of economic profitability, social reputation, time, and labor savings reduced rewards, or less frustration (Rogers, 2003). Relative advantage building is highly domain-specific and therefore advantage can be viewed differently depending on the

innovation in question and the customer in question. In general, the relative advantage of an innovation is positively related to its adoption rate. (Suoranta, 2003). And usefulness can be considered as another factor influencing the adoption of mobile banking. Usefulness is the primary precursor to determining the behavioral purpose of using a computer system (Venkatesh & Davis, 2000; Gunarathna, 2021). Previous research has shown that perceived usefulness directly affects computer use (Ha & Stoel, 2009; Huang, 2008).

Also, trust is another factor influencing the adoption of mobile banking. Trust is one of the most frequently discussed external factors that hinder the use of technology to the extent that a person believes that others are living up to their expectations and not taking advantage of the situation unnecessarily. Mazhar, et al., (2014) say that one of the reasons people choose not to use M-Banking and I-Banking is the confidentiality and confidentiality of controlling these new electronic channels offered by financial institutions and banks. The cost has also been identified as another factor affecting the adoption of mobile banking. Cost is defined as an individual's belief that using mobile banking will be costly (Luarn & Lin, 2005). Some of these costs, considered by individuals, range from mobile device costs, network and transaction fees, banking costs, to data costs. Mallat, (2007) conclude that contributions and service charges for access to mobile services, such as banking, promotions, and shopping, have a significant impact on user acceptance.

Also, trialability is another factor influencing the adoption of mobile banking. Trialability is the ability to experiment and use an innovation before it is adopted (Rogers, 2003). Potential users who could experiment with new innovations and technology have a positive experience with the technology, which further reduces the uncertainties associated with adoption (Rogers, 2003). Agarwal & Prasad, (1998) and Rogers, (2003) found that when people were allowed to experiment with innovation, they were more likely to follow suit, thereby making them feel comfortable with innovation.

### **3. Research Methodology**

This study is based on the Kalutara district. Although the Kalutara District is considered as an urban area (Weeraratne, 2016). According to Weeraratne, (2016) and Census of Population and Housing (2012) out of the total 14 Divisional Secretariats in the District, only four Divisional Secretariats in Panadura, Horana, Kalutara and Beruwala are Urban Divisions. All the other

ten divisional secretariat divisions are rural. Therefore, using the cluster sampling method, 5 rural divisional secretariat divisions have been selected out of 10 rural divisional secretariat divisions in the Kalutara district. Five villages were selected: Bulathsinhala, Madurawala, Millaniya, Agalawatta, and Palindanuwara. The sample for this study was 399 rural people in five divisional secretariat divisions in the Kalutara District. The number of agents was calculated using Yamane's formula with a confidence level of 95% and the sample size of the respondents was  $P=0.05$  (Gitau, 2018).

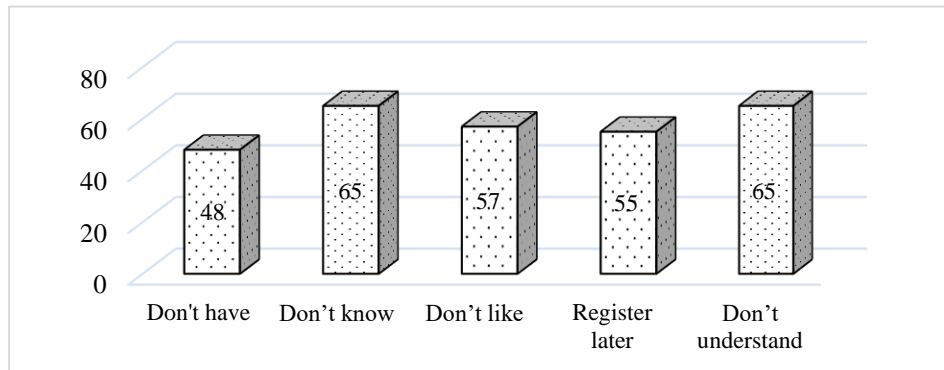
Data are obtained from a questionnaire to achieve the objectives of this study. This questionnaire consists of three sections related to the objectives of the study. The first section examines demographics such as gender, age, level of education, and employment status. The second section asks for information on the use of mobile phones for financial services. The third part examines the qualities that affect adaptation to mobile banking. The questions mainly included the concept and theories of mobile banking and designs identified from the reviewed literature.

Factor analysis is used to achieve the objective of the study. This analysis was also carried out to determine the factors (awareness, complexity, relative advantages, usefulness, trust, cost, trialability) that apply to mobile banking among the rural population in the Kalutara District. Here, factor analysis has been done through Varimax factor rotation under the principal component factoring (PCF) method and the results have been defined. The Kaiser Meyer Olkin (KMO) test was performed to check the suitability of the data for factor analysis and, since the data are categorical variables, Cronbach's value was calculated.

#### **4. Data Analysis**

The results of the study revealed that a total of 399 respondents were interviewed, out of which 109 (27.3%) indicated that they use mobile phones for banking and 209 (72.7%) used mobile phones for banking services. The data show that a total of 290 respondents did not use mobile phones for banking purposes.

*Figure 1: Reasons for not using mobile phones for banking purposes*



*Source: Survey data, 2020*

As illustrated in above Figure 1, the results show responses received for reasons for non-usage of mobile banking, 48 (12%) respondents claimed not to have a mobile phone, 65 (16.3%) respondents claimed that they were unaware of mobile banking services, and 57 (14.3%) respondents indicated that they do not like using mobile phones for banking purposes. Furthermore, 55 (13.8%) respondents indicated that they would register later for the service, while 65 (16.3%) claimed that they do not understand mobile banking services. When asked about the frequency of use of mobile phones for banking, nearly one-fourth of respondents (40 persons) pointed out that they use mobile banking technology often or always. 44 (11%) indicated that they sometimes use mobile phones for banking purposes, while only 25 (6.3%) of respondents said they rarely use this technology.

#### ***4.1 Identifying the Factors affecting the Adoption of Mobile Banking***

The KMO test was performed to check the suitability of the data for factor analysis and the resulting KMO value and Bartlett's chi-square value = 595 = 16061.024 ( $p < 0.000$ ). Therefore, these values explain the adequacy of the sample for factor analysis. Also, since the data are categorical variables, Cronbach's value was calculated and its value was 0.900, which was suitable for data analysis.

According to the variance analysis of the factors performed under the principal component factor extraction method, the Appendix 1 (page 65) shows that there are 5 components with an eigenvalue greater than 1. 49.113% of the variance of the 35 factors considered here is accounted for by the first

component, 64.089% by the first and second components, 69.029% by the first, second and third components, 72.995% by the first four components and the first five components of the total factors. 76.315% of the variation is explained.

Table 1 below shows how the variables are separated into 5 main components according to the varimax factor rotation method. Accordingly, the first component has 25 variables, the second component has 6 variables, the third component has 1 variable, the fourth component has 2 variables, and the fifth component has 1 variable. Attempts to identify common themes look at the content of the questions posed on each factor and define a common name for similar variables. It seems that all the questions that are overly charged on factor 01 are factors related to usefulness and advantage. Therefore, this factor can be termed usefulness. It seems that all the questions that are overloaded on factor 2 are related to awareness and training. Therefore, this factor can be termed awareness. Technology seems to be involved in terms of issues on factor 03. Thus, this factor can be termed technology. It seems that the issues that are overloaded factor 04 are related to cost. Therefore, this factor can be termed a cost. It seems that there are issues that are over-loading on factor 05, which is related to trialability. Therefore, this factor can be termed trialability.

*Table 1: Rotated Component Matrics*

	Component				
	1	2	3	4	5
The use of mobile banking has enabled me to accomplish my daily tasks quickly.	.878	.153	.235	.003	.056
Mobile banking has helped me improve my finances.	.864	.157	.213	-.058	.091
I do not have to wait in line to use mobile banking.	.863	.185	.217	-.003	.163
Prevents the risk of money being carried by mobile banks.	.861	.324	-.068	-.019	.063
Mobile banking eliminates the need to go to the bank.	.860	.251	.005	.008	.101
I would find mobile banking services useful in conducting my transactions.	.853	.292	.027	-.093	.100
Mobile banking allows me to do banking from anywhere.	.847	.301	.019	-.048	.107
Mobile banking allows me to save money.	.836	.144	.083	.039	-.006



Mobile banking allows me to save time.	.836	.344	-.083	-.073	.062
Mobile banking allows me to easily manage my finances.	.834	.227	.227	-.046	.124
Mobile banks are safe to use.	.817	.290	.162	-.113	.095
Mobile banking is reliable.	.814	.383	-.003	-.059	.003
I am afraid that other people will access my account due to mobile banking.	-.812	-.114	-.233	.206	.137
I get nervous while doing banking on my mobile phone.	-.804	-.296	-.040	.211	.026
The cost of mobile banking is cheaper than going to a bank.	.802	.194	.208	.001	.134
I am concerned that I will lose my money through mobile banking.	-.802	-.123	-.190	.163	.107
I would like to go to a bank to do banking for security reasons.	-.798	-.119	-.306	.224	.107
Mobile banking allows me to bank anytime.	.769	.452	.064	.009	-.006
I like to test new discoveries in banking and technology.	.749	.404	-.111	-.009	.088
For the mobile banking system, it is used even when new charges are made.	.748	.158	.202	-.083	.217
I have had the opportunity to try out mobile banking.	.746	.345	-.022	-.046	.024
Mobile banking is easy to use.	.742	.324	.340	-.149	-.003
The mind gets tired of doing banking from a mobile phone	-.711	-.062	-.198	-.237	.028
I can afford the cost of using mobile banking.	.664	.389	-.107	.013	-.054
Training in Mobile Banking is required.	-.586	-.127	-.437	.119	-.162
I use mobile banking because I have seen someone else use it	-.114	.812	.023	-.143	.220
I know where to obtain information about mobile banking.	.397	.769	.278	-.084	-.083
I am aware that I can receive instant notifications of my transactions through mobile banking	.494	.767	.191	-.092	-.050
I am aware I can do banking from my mobile phone	.499	.752	.225	-.108	-.060
I am aware I can send and receive money using my mobile phone.	.515	.744	.216	-.093	-.051
I use mobile banking if it gives me at least a month's training period.	.329	.610	-.350	-.102	-.058
Mobile banking requires technical skills.	-.337	-.219	-.661	-.097	-.010

Using the data I need to do mobile banking is expensive.	.019	-.089	-.110	.826	.000
I do not think it is necessary to use mobile banking.	-.194	-.232	.233	.568	.057
If I need to do mobile banking, I will change my bank.	.213	-.005	.036	.052	.919

*Source: Survey Data, 2022*

## 5. Conclusion and Suggestions

The study revealed that mobile banking is still a new phenomenon in the rural communities of the Kalutara district, which is exemplified by the low level of service usage (27.3%). M-banking technology is still a new phenomenon in the Kalutara district, so the adoption rate is low. Current users of the service become aware of it and have in-depth or basic knowledge of it. There were several other interesting revelations. First, although a large number (47.56%) of respondents were aware of mobile banking, not all respondents were satisfied with the new technology and decided to use this service for a variety of reasons.

The research showed that most people in rural communities have no knowledge of mobile banking, with 16.3% (290 respondents) testifying of a lack of knowledge about services. Another group says they do not like to use mobile banking (14.3%). Furthermore, the results showed that there were more people with mobile phones than people with bank accounts. Therefore, this research has revealed that traditional retail banks are not currently providing services to the non-banking population, which has led to a market gap; It is truly a unique market for m-banking service providers. The results of the study provide an insight into the application of mobile banking based on the findings. So far, most of the research on mobile banking has been sampled primarily from urban areas. Therefore, further research on mobile banking in the rural context is needed.

More progress is needed to reduce the number of people without bank accounts in developing countries. One of the dilemmas facing banks and other financial institutions is to concentrate and consolidate the growth of their businesses in urban areas. This leaves a gap in the access to rural areas. The proliferation of mobile phones in rural areas presents a context in which rural people can benefit from providing financial services. The findings of this study can provide guidance to banks and other financial institutions on key factors

influencing mobile banking adaptation and utility intent. The findings are also of practical importance. From a practical point of view, research findings can provide information to banking institutions and mobile banking professionals on developing strategies that can improve the use of mobile banking services. According to the study, customized marketing and communication awareness campaigns by financial institutions can be launched to educate people in rural areas about the benefits of mobile banking to intensify adoption rates among prospective clients.

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