

# Analyzing the effectiveness of Mobile Banking on Customer Satisfaction; A survey on the XYZ Bank PLC with specific reference to branch Thalawathugoda, Sri Lanka

U. A. Jayaweera

Northumbria University, Newcastle upon Tyne, England  
Newcastle Business School

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**Abstract:** The banking sector in Sri Lanka is experiencing rapid high-tech advancements, which are forcing banks and financial institutions to adopt self-service technologies like internet banking, SMS banking, mobile banking, automated teller machines, cash deposit machines, etc. to provide convenient services and increase customer satisfaction. The purpose of the study is to investigate the effectiveness of mobile banking on customer satisfaction, in the context of XYZ Bank with specific reference to branch Thalawathugoda. The study used a convenience sampling technique to select 50 mobile banking users from a population of 1027 and then used an online survey to collect quantitative data. Accordingly, key findings revealed that lack of confidence and insecurity in mobile banking has a significant impact on customer satisfaction, while speed and convenience have moderate effectiveness. Consequently, based on the survey findings, recommendations were provided to the bank to improve customer satisfaction concerning mobile banking services.

**Index Terms:** convenience, customer satisfaction, electronic banking, mobile banking, privacy, reliability, speed, self-service technologies

## I. INTRODUCTION

A reputable local financial institution, XYZ Bank PLC, has 53 leasing centres, 138 ATMs, 93 branches, and automated channels around the nation. It is one of Sri Lanka's listed service providers and is well-known locally (NTB annual report, 2017). Incorporated in 1999, XYZ Bank is the only issuer and acquirer of American Express credit cards in Sri Lanka. It is the seventh indigenous competitor in the country's banking sector (NTB annual report, 2017). The bank operates to assist people and corporations to realise their goals and future aspirations as a result, serving a diverse customer base that ranges from young children to multinational corporations (NTB, 2018). Due to a 16.3 % shift away from traditional banking practices to electronic banking in

the preceding years, Sri Lanka has seen a tremendous increase in electronic and online banking (Premarathne & Gunatilake, 2016). A liberalised banking industry now exists in Sri Lanka, which has a significant influence on the country's economic growth (Samaranayake, 2016).

According to Daily News (2019), the country's banking sector is at a stage of the cycle known as growth that is intensifying, driven by internet and mobile banking due to increased smartphone penetration, which is represented by subscriptions to more than 30 million smartphones. Furthermore, due to a strong emphasis on ICT and innovation, banks increased their investments in e-banking and other self-service technologies by 71% in 2018 to expand their client base and compete in a fiercely competitive market (Daily News, 2019).

As a prominent bank in the nation, XYZ offers a variety of banking platforms that are compatible with the most recent mobile and multimedia technologies, according to an analysis of the company's present condition (NTB annual report, 2017). As a result, XYZ seeks to cohere its investments moving forward, supporting the development of digital banking, where the firm invested a total of USD 499 million in digital banking from 2014 to 2018. (NTB annual report, 2018). The graph below shows XYZ's incremental investment in digital banking.

*Figure 1: Digital Banking Investments of XYZ (Source: Adapted from NTB Annual Report 2018).*

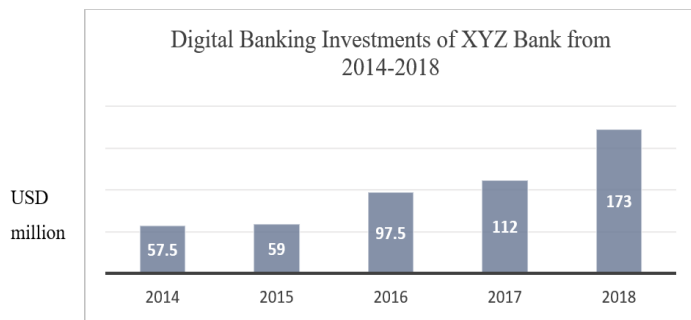


Figure 1 shows that XYZ has raised its investments in digital banking substantially over the previous five years to update its services and boost returns on investments. The performance and net profit of the firm have, nonetheless, reduced from 43% in 2017 (NTB annual report, 2018), which is weaker in comparison to its rivals, as is evident from an analysis of XYZ's income records. As a result, XYZ now has a high-cost income ratio of 55.58 percent (NTB, 2018), which has a detrimental effect on the bank's overall performance and capital position (CS). The table below compares XYZ and its competitors' sales and costs so that a full analysis can be done.

Table 1: Overview of Sri Lankan Banks (Source: Adapted from Central Bank, 2019).

	Commercial Bank	Sampath Bank	Hatton National Bank	XYZ Bank
Share Capital	17,986,300,000	3,553,888,000	12,557,363,000	5,101,369,000
Total Assets (LKR)	1,012,201,000,000	658,512,286,000	858,873,825,000	211,200,000,000
Net Cash Flow	10,150,077,000	6,066,580,000	3,328,071,000	1,035,036,000
Cost Income Ratio	51.06%	47.83%	42.50%	55.58%
Approximate NIPE (LKR)	4,000,000	2,300,000	2,300,000	1,040,000
Net Profit	14,466,000,000	9,124,670,000	13,050,000,000	2,711,209,000

In comparison to three other top banks in Sri Lanka, it can be seen from the highlighted areas above that XYZ's performance and net profit are below average. Figure 1 shows that the company has put a lot more money into developing e-banking each year. However, another part of XYZ shows that the number of M-banking app cancellations is going up by +95 per day, +665 per week, and +2,660 per month (NTB report, 2019). Due to this, the authorities explain that there may be a connection between the number of M-banking deactivations and the performance and revenue declines (NTB report, 2019), which have impacted the CS of XYZ as a whole.

In summary, it is recognized that XYZ is having trouble with M-banking, which has affected its CS. The usefulness of M-banking in raising CS at XYZ will be discussed in this study.

**Problem Statement**

Djajanto (2014) says that as digital technology has improved, businesses have been able to change their old business models and adapt how they run. This has helped them reach their goals and objectives more effectively and efficiently. This research is being done so that we can find out how M-banking affects CS. Fenu and

Pau (2015) say that m-banking is a key part of the banking industry's development of different e-banking models to meet customer needs. Reviewing M-banking as a platform for e-banking, Daud et al. (2011) say that it is a service that consumers like as it is easy to use and available to a lot of people. Asongu (2013) says, one of the main reasons for the growth of M-banking is the rise in mobile phone subscriptions. This makes it easier for banks and other financial institutions to convince people to use M-banking services. But Dennis (2016) says that people do not use e-banking services because they do not know enough about them, they do not trust them, they are worried about security, and there are different opinions in the community. For example, the number of mobile phone users in Sri Lanka has grown a lot in the last few years, which means that M-banking could be more popular in that country (Gunawardena & Perera, 2015). Siqueira (2016) says that the growth of M-banking users is slower than the growth of mobile phone users. Because there are not any big-picture studies, it is important to research M-banking in Sri Lanka to identify why consumers are not getting used to it and are not satisfied with it as fast as they could be.

**Research Objectives**

The goal of this project is to look into and figure out how well M-banking works to analyze XYZ's current situation and make suggestions for how to improve the company's performance. The objectives of this study are as follows:

1. To review the literature to discover the concepts of M-banking and CS and their importance to corporates.
2. To identify secondary research to critically review the literature to investigate the effectiveness of M-banking on CS in the banking industry.
3. To identify primary research using online questionnaires distributed to the M-banking users of XYZ to identify the effectiveness of M-banking on CS.
4. To analyze the findings of the primary research, provide recommendations required and draw conclusions for XYZ in M-banking which could help increase CS.

II. LITERATURE REVIEW

**Mobile Banking**

The world of digital technology has been extensively revolutionized over the past decades since its origin as a binary computing process, being the most important force behind almost every industry in the world (Ebner & Schweighofer, 2015; Sheoran, 2012). Dennis's (2016) study shows that research on mobile banking does not get nearly as much attention as research on electronic banking. However, according to Nair and Samudra (2006), the development of M-banking, which is a subset of electronic banking, is presently thought to be the most important factor driving the banking industry. Mallat et al. (2004) define M-banking as performing transactions between accounts and seeing account balances while using a mobile device to access a bank's website. Rahman (2013) contends that in the context of the digital era, M-banking delivers services and information from banks to their clients through wireless application channels via mobile devices, tablets, or even smart devices. Asongu (2013) goes on to say that the main reason for the fast growth of M-banking facilities

around the world is the increase in mobile phone users in the market, which allowed banks to offer services through wireless channels and take advantage of business opportunities.

### **Customer Satisfaction**

Customer satisfaction (CS) is recognized as a crucial component of any organization's success in the sphere of business (Lin, 2017). Kotler (2011) says that customer satisfaction (CS) is a measure of how different a good or service is seen to be from how it was expected to perform in the past. Biesok (2011) gives a broader definition of the phrase as "customer requirements, desires, and objectives." This is when a good or service makes a customer feel happy and satisfied (Ilieska, 2013; Ali, 2018). In contrast, Angelova (2011) says that CS is hard to measure because it leads to misunderstandings about how quality is seen. Hence, this shows that CS only changes if the performance meets or exceeds expectations (Morgan, 2006; Hallowell, 1996). Saner et al. (2016) say that different researchers have found that CS is a key important factor in the banking business. So, financial institutions are always trying to improve M-banking apps and their features to improve customer service (Ali, 2018). For example, KPMG (2018) says that between 2015 and 2016, several banks around the world quadrupled their M-banking budgets and kept them at that level all through 2017. According to Naik (2010), the five service dimensions of reliability, responsiveness, security, empathy, and tangibles based on the SERVQUAL model have an impact on M-banking contributing to banks' CS, whereas Emel (2014) notes that reliability, responsiveness, and security are the three factors that have the greatest impact on CS.

### **Convenience**

Collier and Kimes (2013) say that a product, service, or system's level of convenience is determined by how easy customers think it is to use. As a result, Ling (2016) asserts that convenience, also known as ease of use, is a mental effort that influences whether or not a user accepted it. So, Shilpa and Veena (2018) define convenience as the amount of work a consumer has to do to use facilities or services and enjoy the results. Hamid et al. (2018) note in their review of e-banking that convenience is a person's perception of how much e-banking will increase flexibility and be simple to learn and use. Customers have mostly shifted from conventional banking to M-banking due to factors like flexibility and efficiency, which highlights the need to enhance those features to maximize the convenience for CS (Shilpa & Veena, 2018).

### **Reliability**

In customer service, reliability means being able to give customers what they want at a certain level, as well as being correct, on time, and up to date (Hammoud et al., 2018). As a result, what makes e-banking reliable (Asfour & Haddad, 2014) is the accuracy of the information and other services offered, as well as how well the website or mobile app works technically. Shilpa and Veena (2018) elaborate that dependability is a key performance driver in the banking industry, which is very competitive because trust affects whether or not customers want to do business online and share private information. According to Berraies et al. (2017), the risks connected to M-banking might help to further explain the efficacy of dependability on CS. So, the unreliability of M-banking is lessened by the fact that M-banking programs are more likely to

break down and upset customers than traditional banking methods (Hamid et al., 2018).

### **Speed**

Ling (2016) says that speed with self-service technologies is the amount of time it takes to finish a service task using a machine or an established system. According to Fozia (2018), CS with SSTs will be dependent on a variety of characteristics, with speed being one of the most important. Furthermore, Chiu et al. (2017) emphasize that, according to Meuter, Ostrom, Roundtree, and Bitner, "speed continues to rank first among qualities" (2000). Due to the busy lives of consumers, Ling (2016) also says that speed is the strongest and most important factor in producing CS when SSTs like ATMs, CDMs, and mobile applications are used in the banking business. Hamid et al. (2018) say that people get used to M-banking because it helps them get around what they think are the time and place limits of service. In fact, according to studies, 60% of internet users say that the rapid development of mobile applications has caused them to make decisions and complete transactions more rapidly than they did in the past (Hamid et al., 2018). Chiu et al. (2017) say that banks need to give customers a good impression of how much time M-banking takes so that they can see the services as being quick and easy to use.

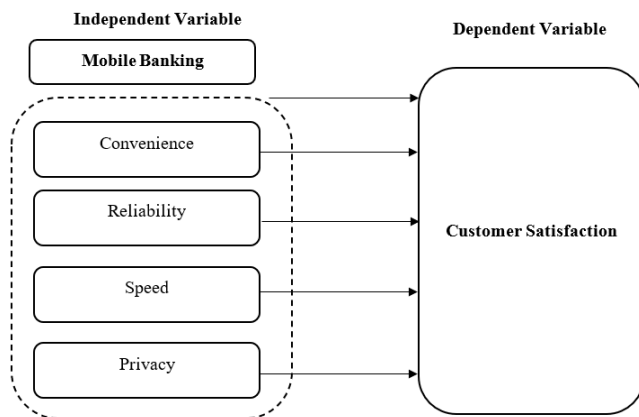
### **Privacy**

According to Hammoud et al. (2018), privacy is one of the most important judging factors for online financial transactions since it protects users from danger, peril, and uncertainty. Since client account privacy is very important, it is important to make sure that transaction data is correct and accurate (Iberahim et al., 2016). So, Djajanto (2014) says that financial institutions should help protect the privacy of their customers by using high-security processes to protect their important client information when using current transaction methods. Becirovic (2011) says that all e-banking services cause consumers to worry about their privacy, which affects customer service. As proof, Chiu et al. (2017) show that customers' concerns about privacy led to laws that make it illegal for businesses to use their customers' information for other purposes. Consequently, Ling's (2016) research shows that customers are hesitant to use M-banking because they are worried about their privacy (Fozia, 2018).

### **Conceptual Framework**

According to Maseke (2018), a conceptual framework is a theoretical structure of assumptions, principles, and rules that holds the notions comprising a broad concept. Therefore, according to this research study, the conceptual framework is illustrated below.

Figure 2: Conceptual Framework (Source: Adapted from Maseke, 2018).



### III. RESEARCH METHODOLOGY

#### Research Philosophy

Research philosophy is defined as a set of beliefs and expectations regarding the advancement of knowledge in a specific field of study (Asongu, 2013). As Saunders et al. (2003) state, understanding philosophy is vital to clarify the research methods to be used in a study. Based on this study, the positivism approach has been selected by the author as it asserts a series of measures that could be identified as a specific variation of the actions of people or associations between people. In addition, the research of Asongu (2013) and Sequeira (2016) used positivism, which often involves the manipulation of reality based on the use of independent variables.

#### Research Approach

As Sequeira (2016) identifies the research approach is a process that contains steps of assumptions to a comprehensive process of data collection, analysis, and interpretation. Also, when the author used the deductive method, he or she followed the path of logic more closely. This led to observations that proved and contradicted each other, which either led to a confirmation or a denial. Consequently, the data collected for the study were analyzed to prove or disprove particular situations, which directed the author to establish new ideas and trends as recommendations. Hence, the author used the steps given when he or she used the deductive method to do the study.

#### Research Strategy

As Saunders et al. (2009) state, a research strategy is the “general plan of how the researcher will go about answering the research questions.” Therefore, the significance and choice of the strategy rely on research objectives, time, knowledge, and philosophical reinforcements (Thomas, 2001). The table given below outlines the frequently used strategies in dissertations. For this study, a survey was used as the study focused on the CS of M-banking of a selected organization. As a result, the survey allowed independence for the author to gather various types of information, which strengthened the outcome of the project.

#### Research Methods and Data Collection Tools

As Ling (2016) identifies, the three research methods are quantitative, qualitative, and mixed-method. As a result, qualitative data emphasizes non-quantifiable perspectives, interpretations, and in-depth understandings of respondents' views, whereas quantitative data refers to quantifiable numeric or statistical data gathered through various data collection methods (Mangan et al., 2004). A quantitative study was conducted with the use of an online questionnaire that gathered quantifiable numerical data from M-banking users of XYZ in terms of their CS.

#### Population and Sampling

According to Saunders et al. (2007), sampling is the process whereby a researcher chooses units for a survey that represent an entire population. Accordingly, sampling is done through two methods; probability and non-probability sampling. In probability sampling, each population unit has a known chance of contributing to the survey, whereas non-probability does not give all the units in the population an equal chance of being selected (Ling, 2016). The sample size for this study review was chosen by convenience sampling, which is a non-probability method. The sample was taken from a total of 1027 M-banking users who are over 18 years old, from a total of 3184 customers at the XYZ Thalawathugoda branch as below. Based on Taherdoost (2016), a survey that uses a convenience sampling technique requires no less than 50 respondents as a general rule of thumb. So, the author chose a sample size of 50 M-banking users, and the process of choosing users continued through Google forms until the required sample size was reached.

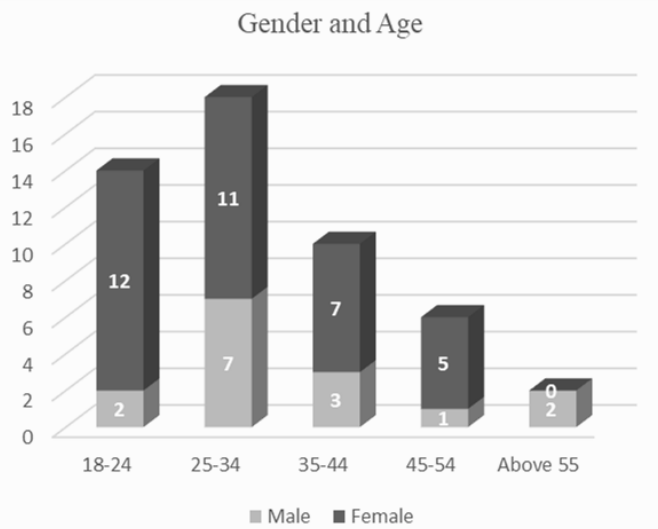
### IV. RESEARCH FINDINGS

#### Demographic Analysis

##### Age and Gender

This part of the chapter looks at the answers to the demographic profile questions given by 50 M-banking users of XYZ. The highest age distribution of the respondents can be identified as 36% from age 25 to 34, which includes 12 female and 2 male respondents, whereas the lowest response rate is 4% from age above 55.

Figure 2: Age and Gender



As a result, 24% of those aged 18 to 24, 20% of those aged 35 to 44, and 12% of those aged 45 to 54 participated in the survey. However, what stands out in this graph is that female respondents have the highest participation in the survey, which is 62%, whereas the participation of male respondents is 38%.

**Educational qualifications and Employment Status**

The educational qualification section clarifies that the majority of the respondents are postgraduates (32%), whereas the lowest responses are from undergraduates and advanced-level qualifiers (22% each). Further, the second-highest responses (24%) were received from professional qualification holders. The employment status shows that 74% of respondents are employed and 18% are students. However, it is discovered that the lowest responses are gathered from unemployed M-banking users, which is only 8%. The highest number of respondents (30%) have been banking with XYZ for 2 to 5 years, whereas only 8% of the respondents have been using XYZ services for more than 15 years. Further, the results show that 26% of respondents have been banking with XYZ for 6 to 10 years, while 24% have been banking for less than 2 years.

Figure 3: Educational Qualifications and Employment Status

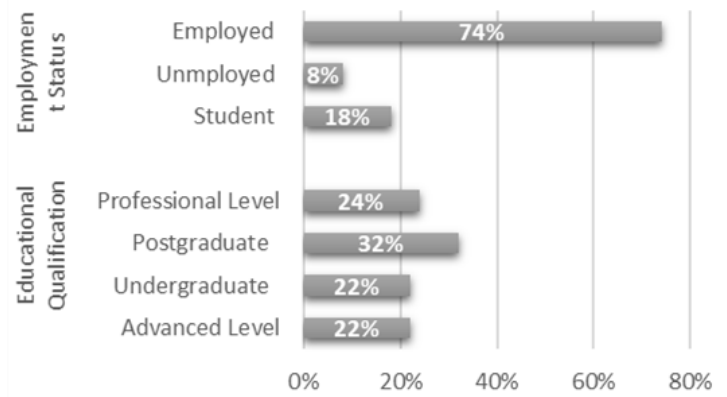


Figure 4: Experience with Bank

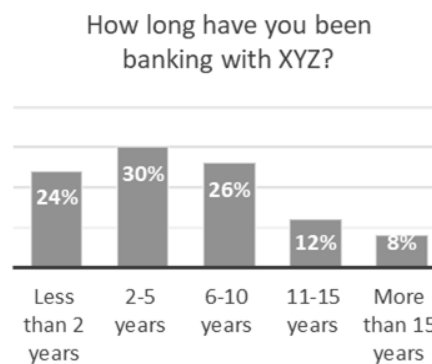
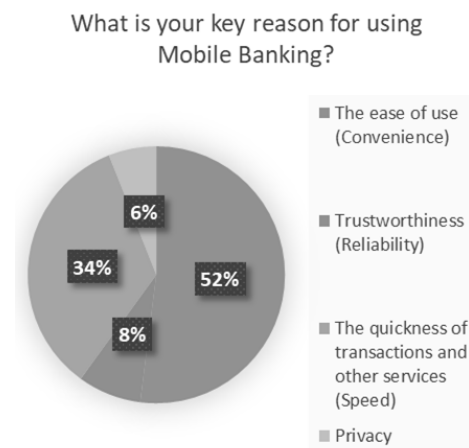
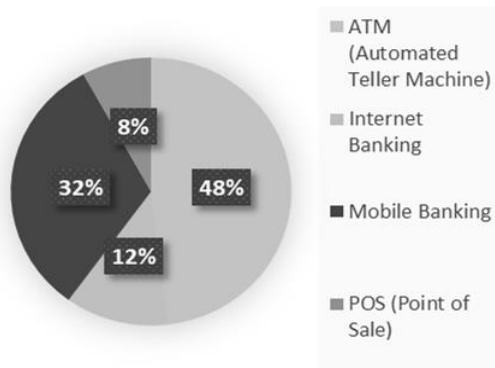


Figure 5: Reason for using M banking & features of e-banking



Which of the following features of e-banking have you frequently used in XYZ?



Furthermore, 52% of the respondents are using M-banking due to its convenience, whereas 34% and 8% use the facility since it is speedy and reliable. But the pie chart also shows that only 6% of the people in the sample use M-banking because it keeps their privacy safe. Secondly, respondents frequently use ATMs, which means 32% use M-banking and 16% use internet banking. More importantly, the results demonstrate that only 4 respondents, or 8%, use POS machines.

Considering convenience, 80% of respondents agree that XYZ M-banking enables its customers to use M-banking services at anytime, anywhere, whereas over 75% agree that in terms of convenience, responses show that M-banking is more flexible and faster than traditional banking methods. So, this finding backs up what Goel (2015) found in the literature: that the speed and flexibility of e-banking can improve CS. 50% of those who answered agree that XYZ's mobile app has the right language support for its customers to make transactions. But 42% of people, which is closer to the agreed-upon response rate, say that XYZ does not help them with their transactions in their own language. As a result, it can be seen that the instructions for the XYZ mobile app are only in English. This may have made 42% of respondents disagree with the statement that English is the national language since Sinhala is not included in the app. Masoud and AbuTaq (2017) say that the ease of use could be improved by adding features like letting users change the language and interface of the mobile app based on their knowledge of technology, age, and other needs. This would also increase customer satisfaction.

Reviewing reliability, a striking finding could be observed as 66% of respondents disagree that M-banking is more reliable than ordinary banking techniques, whereas only 32% agree with the statement. Therefore, this finding is contrary to that of Hammoud et al. (2018), who view M-banking as a more reliable process of banking than traditional methods. However, 54% of respondents agree with the statement, which proves that XYZ often updates and maintains its mobile application to provide malfunction-free, reliable services to its customers.

56% of respondents believe that XYZ M-banking has a lack of security and risks. Also, 54% do not trust the company to solve problems with M-banking quickly when they come up. Therefore, by analyzing the responses, causes identified for the high rate of disagreements and measures of the reliability of the XYZ M-banking application are security concerns and risks such

as viruses, insecure Wi-Fi networks, unauthorized third-party hacking, phishing scams, etcetera (Tembely, 2017). In fact, the discussion above is in accordance with the literature of Hamid et al. (2018), which implies malfunctions and error-prone e-banking services could cause frustration and distress in users, thus lowering the reliability and CS.

In terms of speed, 78% of people who answered the survey agree that M-banking is a great way to get around what people think are time and location limits at banks and other smart banking locations. In the same way, the speed of an M-banking app is one of the most important things that customers look for before using it. This is because many people do not want to spend more time at the bank making transactions in person (Chiu et al., 2017). As a reason, it can be seen that XYZ only has 93 branches, 127 ATMs and 45 CDMs, which is low compared to other banks in Sri Lanka. Because of this, customers of XYZ were more likely to have to wait in line for paperwork at the bank, which made them unhappy and led them to switch to other banks with better e-banking services. 34% of respondents state that there is a propensity to move from XYZ to another service provider considering their CS.

When it comes to privacy, 54% of respondents agree that M-banking provides more privacy than traditional banking methods, while only 30% of negative responses are received as disagreements. As Hammoud et al., So, these results back up the previous survey on M-banking privacy, which found that 89.43% of M-banking users around the world are worried about security and privacy policies because their savings and personal information are linked to the M-banking app (Berraies et al., 2017). As they say (2018), privacy is one of the most important things to look at when judging customers' online financial activities because it gives them control over risks and danger. Therefore, these findings support the previous survey on M-banking privacy, which indicates that 89.43% of users of M-banking across the globe are apprehensive about security and privacy Customers' savings and personal data are linked with the M-banking application (Berraies et al., 2017).

56% of the people who responded disagreed with the statement because they do not feel safe using M-banking apps to make transactions. As a result, these findings may indicate customer insecurities about M-banking, which have led to the development of a lack of confidence. 55% of respondents disagree with the statement, even though the company has taken important steps to make people aware of its privacy policies. This suggests that XYZ's M-banking instruction process is not as good as it could be. In reviewing results, an even distribution of both agree and disagree responses can be observed, which proves that M-banking users, in the context of Sri Lankan society, are weaker in overall knowledge of e-banking concepts than e-banking accounts, which are freely installed by their respective banking service providers without delivering an overview of the service.

Through the literature review, the first two objectives of the study have been successfully attained. In fact, the first objective, reviewing the concepts of M-banking and CS, has been completed with the use of critical discussions and literature by multiple authors, whereas the second objective was fulfilled using literature and statistics related to theoretical and empirical studies. The third objective of the research has been achieved with the conduction of a survey and analysis of data. Accordingly, a

questionnaire comprised of 7 demographics and 19 Likert scale questions was distributed among 175 M-banking users of XYZ, and 50 responses were analyzed and measured through Microsoft Excel to identify the effectiveness of M-banking on CS. The final objective of the research was achieved and the author analyzed issues identified in terms of M-banking and CS at XYZ. The recommendations are provided to the company to overcome the identified issues.

### Recommendations

As of right now, 2,660 more people are deactivating the XYZ M-banking app every month, even though the company has been investing a lot more money into the development of e-banking every year. The following points discuss the recommendations for three key issues related to XYZ m-banking.

- Developing a mobile application that consists of multiple languages would create a competitive advantage for XYZ as there is no M-banking application that gives many language options to the customers in the country.
- Establish a special department or a team of individuals; dedicated to customer relationships 24 hours in order to degrade customer frustrations and complaints, since support is highly required when dealing with modern banking technologies.
- Provide comprehensive instructions on how customers' privacy is protected in mobile transactions prior to an M-banking app installation.

### CONCLUSION

This research project was conducted to find out how well M-banking works for CS at XYZ, with a focus on the branch in Thalawathugoda. Overall, the results of this study show how important it is for M-banking service providers to take the steps needed to deal with customer service issues.

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#### AUTHORS

**First Author** – Jayaweera, U., ACIM, Chartered Institute of Marketing, BSc. (Hons), Northumbria University