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The Impact of Factors Influencing the Customer Satisfaction Of M-Banking Users

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ABSTRACT

The purpose of this study was to develop a new model that could integrate the level of customer satisfaction with the three aspects of the quality of the mobile banking service: the quality of the system, the quality of the interface design, and the quality of the information. This research was carried out in order to accomplish this goal. To be more explicit, the quality of the system, the quality of the interface design, and the quality of the information were all going to be merged into one system. Random sampling was executed to choose the participants from the sample group. 337 customers participated and these customers had already adopted, implemented and used the mobile banking apps and had the experience of using them to conduct banking transactions in order to collect the information required for the research. Reliability and validity tests were run using SPSS statistical software to validate the research model. The hypotheses were tested using the partial least squares method. This led to the revelation that the effectiveness of the information supplied, the system, and the

interface design had a substantial impact on a customer's satisfaction with the mobile banking service. The system's overall quality was the factor that defined the level of customer satisfaction

Keywords: Mobile banking, Satisfaction, E-transaction, Service quality.

1. Introduction:

The boom that the service sector has witnessed globally has seen a shift in the banking services. Banking operations are highly becoming customer centric as there is cutthroat competition across all banks. (Ernst & Young, 2011, Aldaihani & Ali, 2019). The services provided by banks are similar, so to create a competitive advantage a bank needs to reinvent the wheel and provide competitive offerings so customers do not think of switching banks. There has been a great progress in the way banks are operating in India (Wiedenbeck, S, (1999)). New financial solutions and custom-made commodities have boosted finance (Bamoriya, P. S., & Singh, P. , 2011). Banking no longer solely accepts deposits and loans (Banker, A., Jadhav, D., & Bhatt, V, 2020). Budgeting is another key area all banks are focussing on. One major aspect of any bank is to see its money grow. Digital Banking is essential in today's digital world (Bhatt, V., & Joshi, D., 2019).Covid- 19 has increased the usage of digital banking across the world. Some of the advantages of mobile banking include not going into banks physically as they **are** always **busy.** Branches are not located everywhere, and customers seek to avoid long banking queues and wait times (Ajmera, H., & Bhatt, V. , 2020). Customers over 65 are hesitant to go to the bank (Bhatt V. , 2021). Mobile banking is the best-known digital option (Bhatt V. G.). It links smartphones to banks. One can make 200 financial transactions from home, work, or anywhere around the globe (Jadhav, Upadhyay, & Bhatt, 2021). Mobile phones are the most used technology in daily life (Goonetilleke, R. S., Shih, H. M., & Fritsch, J, 2001). Mobile banking is gaining popularity across the globe and Covid 19 has forced banking customers to adopt mobile banking. India is the world's second-largest telecom market; therefore, there is a huge potential for the expansion of mobile banking services (Merdenyan, B., Kocyigit, O., Bidar, R., Cikrikcili, O., & Salman, Y. B., 2014).

India's growing mobile user base and improved network coverage have made mobile banking a must-have (Shaikh & Karjaluoto, 2015). Mobile banking and nationwide financial services are trending. ICICI Bank, a private sector bank, was the first to deploy digital banking

systems, however other private and public banks swiftly followed (Barnes, S. J., & Corbitt, B. J., 2003). Most Indian banks currently provide mobile banking. As communication technology advances, the business world becomes increasingly reliant on them (Goonetilleke, R. S., Shih, H. M., & Fritsch, J, 2001). Banks and financial organisations need new ways to stay competitive. The rapid adoption of new mobile devices has sparked innovation (Banker, Jadhav, & Bhatt, 2020). The banking sector is altering the way it delivers financial services to save time and cost. Mobile banking apps are an innovative way to remotely monitor financial processes (Baabdullah, A. M., et. al., 2019). These apps should be easy to use. It's crucial to have a user-friendly, functional interface. Mobile-banking apps provide a unique alternative to face-to-face financial transactions (Moudud-Ul-Huq, S. , 2021). This innovative system lets users manage assets, monitor balances and transaction history, pay bills, transfer money, trade equities, and buy/sell foreign currency (Gumelar, A.,et, al., 2020).

1.1 Research Problem

Customer satisfaction is a crucial aspect for customers to be loyal to a bank. Customer satisfaction is determined by the difference in expectations and perceptions of the banking service. Hence the research questions are formulated as follows:

Is the performance expectation of mobile banking significantly affecting the customers' satisfaction with mobile banking?

Does the perceived value of mobile banking have a substantial impact on customer satisfaction?

Does the condition of the mobile banking facility have a substantial impact on customer satisfaction?

Does the perception of mobile banking security have a substantial impact on consumer satisfaction?

Does the user interface of mobile banking have a substantial impact on the level of client satisfaction?

1.2 Objectives & Aims

The goal of this research is to create a new model that can take into account the relationship between customer satisfaction and the calibre of the m-banking services. The main objectives

of this research based on the research challenge and the literature on mobile banking were as follows:

To identify the extent to which performance expectations impact mobile banking customer satisfaction

To identify the extent to which perceived value of the service impact mobile banking customer satisfaction.

To identify the extent to which banking facility conditions impact mobile banking customer satisfaction.

To identify the extent to which perceived security of the service impact mobile banking customer satisfaction.

To identify the extent to which the user interface impact mobile banking customer satisfaction

2. Literature Review

Mobile banking (M- banking) is highly correlated with trust, and trust may be used to mitigate mobile banking's effect on consumer satisfaction (Bamoriya, P. S., & Singh, P. , 2011). Mobile and online banking are developing technologies. Mobile banking allows users to access their money remotely. The growth of mobile banking technologies is astounding (Devadevan, V., 2013). Due of demonetization in India, people choose online and M-banking. India has the second-largest mobile subscriber base, leading to an increase in mobile banking customers. Mobile banking's influence on customer satisfaction was studied (Borikar, H., & Bhatt, V.). "Technology boosts job performance" is considered performance. Users claim M-Banking will alter banking, navigation, and transactions. Performance affects M-Banking usage, according to Bhatiasevi (2016) and Zhou et al. (2010). Perceived relative benefit and utility impact the usage of M-Banking. Research has indicated perceived relative advantage influenced M-Banking understanding. Perceived utility boosted M-Banking adoption. (Tam, C., & Oliveira, T, 2017)**.** The focus on M-Technologies rather than M-Banking, Park et al. (2007) found that performance influenced M-Technology use.

Perceived Value is "consumers' cognitive trade-off between apps' perceived advantages and monetary cost." Users of a technical service sometimes compare the price they paid for the services and the savings they may obtain if they keep using it (Bhatt, V., & Mehta, B. , 2020). Customers are more inclined to increase consumption when given discounts. When a

technology's supplier increases its charges, like Internet and M-Banking, consumers will be unwilling to use it. In such instances, customers may switch to a rival (Bhatt, V., & Saiyed, M., 2015). Customers are more excited about using technology when the perceived value is greater. The advantages of employing technology by the customers should exceed the cost, the customers have to pay for it. Inability to pay for enhanced technology (such as M-Banking) discourages customers from utilising it (Merdenyan, B., et., al., 2014).

Facility Condition is "the extent to which an organisational and technical infrastructure supports the system's utilisation." Studies have indicated that facility condition increases customer consumption. (Vora, H., Jadhav, D., & Bhatt, V., 2020). M-Banking supports personal account logins, money transfers, and interoperability. Good technology infrastructure and organisational development may impact people's perceptions and encourage them to utilise a service (Tam, C., & Oliveira, T, 2017). Under favourable circumstances and full customer support, 334 participants said Indians are more likely to utilise M-Banking. Internet connectivity and online banking have increased people's desire to utilise technology. Compatibility and relating with the technology implemented, increases customers' desire to adopt the technology (Singh, J., & Yadav, P., 2012). Customers may utilise online banking systems due to technological advances, such as the internet's convenience.

Several financial institutions have implemented these technological facilities as m- banking and online banking. Due to lack of strong technology, there has been a compromise in account privacy, security, and hacks in several financial institutions. SMS banking has a similar difficulty (Merdenyan, B., et., al., 2014). Payment service provider (PSP) and its strength is another aspect that organisations need to address. PSP is a service offered by third parties that enables electronic payment methods which can include debit and credit card payments, bank transfers, digital wallets etc. The provider’s credibility is extremely important for customers to trust and use this platform for their banking needs. Several studies have also discussed PSP's significance (Nayak, K. M., Bhatt, V., & Nagvadia, J, 2021). Results of studies indicated that security was of prime importance while executing online transactions. Customers consider PSP as a very crucial aspect while using m-banking, which reveals their sentiments towards the facility conditions that the bank is providing. Many bank clients are hesitant to share confidential information over the phone or the internet since they can't control it after it's sent to a third party (Aggrawal, A. , 2014; Malek & Zala, 2021).

Virtual components are commonly used in applications for several reasons (Malek, M. S., Bhatt, V., & Patel, A., 2020). Weidenbeck (1999) stated that icons are significant as cognitively it can be easily recalled by the customer. End-users prefer icons to words. With the appropriate design, icon-based interfaces decrease system complexity and mental stress (Wardhana, 2015; Malek, Saiyed, & Bachwani, 2021).

3. The Conceptual Model and Hypotheses Formulation

Based on the literature review the following hypotheses were formulated.

H1: Performance of the banking platform has a significant positive impact on Mobile-banking customer satisfaction.

H2: Good Perceived value of the banking platform has a significant positive impact on Mobile-banking customer satisfaction.

H3: A good facility condition has a significant positive impact on Mobile-banking customer satisfaction.

H4: A good perceived security of the banking platform has a significant positive impact on Mobile-banking customer satisfaction.

H5: A good user interface has a significant positive impact on Mobile-banking customer satisfaction.

The conceptual model is illustrated in Figure 1.

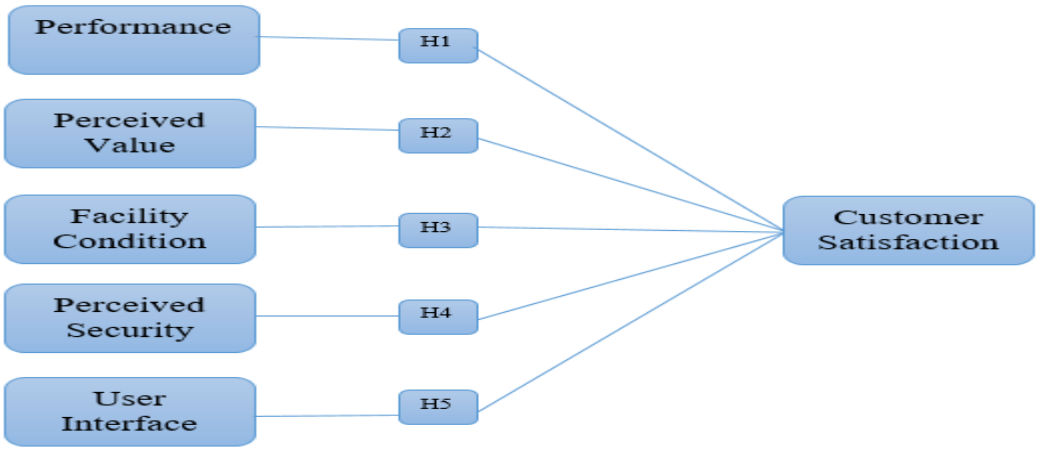

Fig. 1 The Conceptual Model

4. Methodology

The data was collected via a questionnaire that was sent to the participants. The study instrument was heavily modified to fit mobile banking. Content validity was confirmed by running tests that validated the items in the questionnaire. Various questions were used to measure the variables. The questionnaire was divided into two sections. The first section of the questionnaire took details of the respondents' demographics and the second section led to the mobile banking service quality being appraised. All items measuring the variables were measured using the same five-point Likert scale, with 1 and 5 representing "strongly disagree" and "strongly agree" respectively. After validating the questionnaire, all 24 items were included. So, this study's analysis will include the analysis of the 24 items contained in the questionnaire.

Indians with commercial bank mobile banking accounts were targeted. The inquiry focused on customers who had bank accounts and downloaded mobile banking apps. According to statistics from Gujarat's retail banks, 194,016 people will utilize mobile banking in 2022. Random sampling was used for this study**.** The minimum representative sample required was calculated by taking the population, maintaining the confidence level at 95% and the margin of error at 5%. The required sample size was 337. Questionnaires were sent out to 1000 mobile banking customers. Researchers like Nulty (2008) and Guo et al. (2016) have concluded that on an average the response rate for online based questionnaires was only 30%. It took three weeks to receive 337 completed questionnaires. The survey's sample size makes it ideal for statistical analysis.

5. Data Analysis and Findings

5.1 Demographics of Participants

The data collected by the bank customers from the questionnaires was then analyzed using SPSS version 23 and Smart PLS3.The entire data consisted of 337 records. The demographics of the participants indicated that the sample consisted of 226 men (67.1%) and 111 women (32.9%). Findings of age indicated that the highest chunk of the participants 67% were from the age group of 20 to 30 years, followed by the age group between 30 to 45 years (30%). Only 3% of the participants were above 45 years of age which does indicate that the older age group may be more hesitant to adopt mobile banking. Findings of education indicate that 675 of the respondents hold graduate degrees, 14% were undergraduates and 12% hold a post graduate degree. Findings of income indicate that

40.9% of the participants have a monthly income of 20,000 to 50,000, 26% has a monthly income of 50001-100000 and 23% has an income of less than 20,000. The information gathered allowed the researcher to comprehend that 40.9% of the participants with household incomes between Rs. 20,000 and Rs. 50,000 use mobile banking.

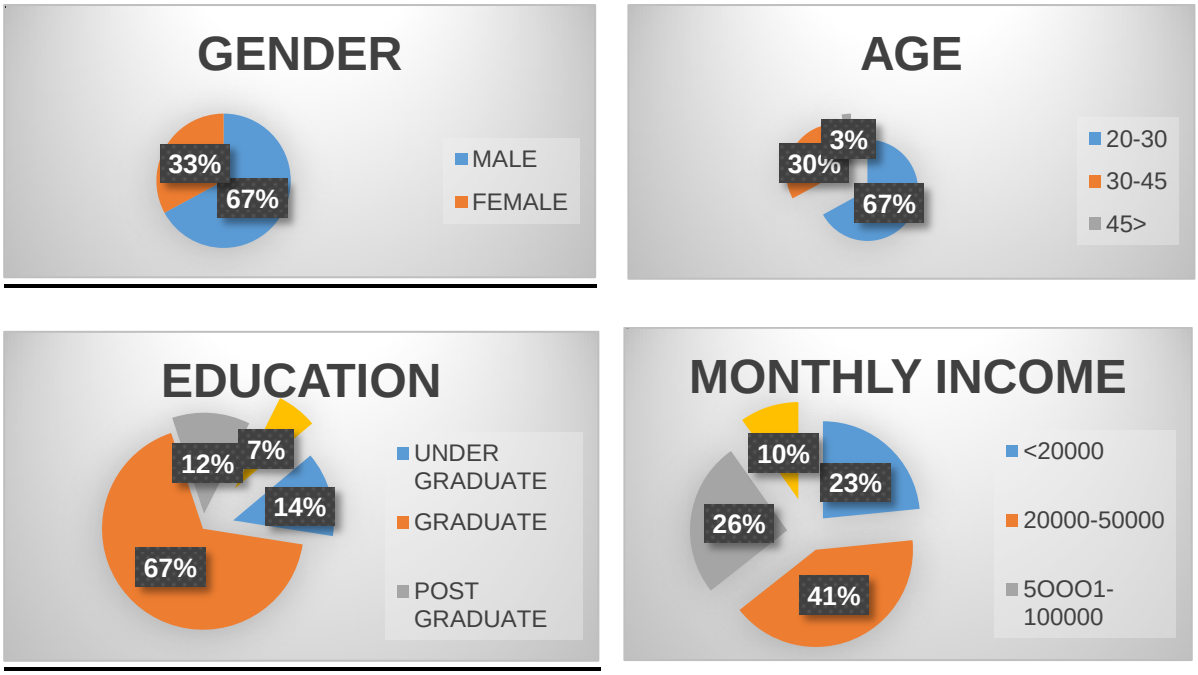

Fig. 2. Personal characteristics of the respondents

5.2 Validity and Reliability of the Model

Validity and Reliability tests were run to establish the validity and reliability of the conceptual model, namely the items and the constructs used for the study**.** Smart PLS was used to run the validity and reliability tests.

The indicator reliability and composite reliability must be above 0.70 for each construct and 0.60 for each item to ensure the reliability of the model**.** Findings for the convergent and reliability validity are provided in Table 1.The findings indicate that the indicator and composite reliability meet the required standards and the items and constructs are apt for studying the research framework. (Bhatt, V., & Shastri, S., 2018; Malek & Gundaliya , 2020). Other tests were run to measure the conceptual model's validity, which measures the validity of the questions used to measure a construct. Convergent and discriminant validity tests were run. Each item's factor loading, composite reliability and average variance extracted (AVE) must be above 0.70 for convergent validity (Fornell & Larcker, 1981; Malek & Gundaliya, 2020). AVE studies the validity of each construct and it must be above 0.70. Table 3 displays

each construct's discriminant validity. To achieve discriminant validity, the square root of the AVE for each concept should be greater than its correlation with the other components (Fornell & Larcker, 1981; Malek & Bhatt, 2022).

Table 1 *Convergent and Reliability Validity*

Latent	Stat.	Indicator reliability	Item loadings	Composite reliability	(AVE)
Performance	PER 1	.804	.689		
	PER 2	.845	.758		
	PER 3	.857	.856	0.758	0.720
	PER 4	.862	.754		
Perceived value	PEV 1	.904	.754		
	PEV 2	.921	.698		
	PEV 3	.910	.758		
	PEV 4	.901	.657	0.721	0.775
	PEV 5	.915	.759		
Facility condition	FC1	.857	.685		
	FC2	.856	.832		
	FC3	.895	.758	0.768	0.747
	FC4	.874	.784		
Perceived security	PS1	.897	.847		
	PS2	.887	.821		
	PS3	.880	.728	0.761	0.768
	PS4	.865	.720		
User interface	UI1	.904	.847		
	UI2	.898	.759	0.745	0.756
	UI3	.879	.689		
Customer satisfaction	CS1	.854	.658		
	CS2	.958	.745		
	CS3	.874	.847	0.762	0.710
	CS4	.847	.856		

Table 2 *Discriminant Validity*

Variables	Mean	Standard Dev.	Sig.	PE	PV	FC	PS	UI	CS
Performance	3.5824	0.7546	0.0267	**0.79**					
Perceived value	3.5421	0.7854	0.0283		**0.75**				
Facility condition	3.2564	0.7854	0.0270			**0.84**			
Perceived security	3.5952	0.7249	0.0208				**0.71**		
User interface	3.0298	0.7684	0.0208					**0.68**	
Customer satisfaction	3.5474	0.7421	0.0225						**0.76**

5.3 Structural Model

The suggested research model's validity and reliability were examined, and the structural model's performance was evaluated using the partial least square (PLS) method. The R square statistic is used in the structural model PLS test to quantify the fraction of the dependent variable's fluctuation that can be ascribed to the independent variable and to show the overall predictive capacity of the model. The PLS test for the structural model may be used to determine this fraction. R square must indicate a value of 10% for the argument to be deemed valid. A study was carried out to establish the strength of the relationship between the variables using path coefficients and significance levels where $p< 0.050$. The model has an R square value of 0.756. This result illustrates the excellence of the model. The findings establish the model fit, as shown by the R square value of 0.756 and Durbin-Watson value of 1.942 as is displayed in Table 4. The Durbin Watson test indicates the autocorrelation in a regression model’s output and the values should be close to 2. In this study the value is below 2 indicating a positive autocorrelation. (Prajapati, K., & Bhatt, V., 2019).

Model	Unstandardized coefficient		Standardized coefficient	t sig.	
	B	Std. Error	*B*		
(Constant)	0.221	0.286		0.560	0.232
Performance (PE)	0.254	0.065	0.250	2.625	0.002
Perceived value (PV)	0.321	0.076	0.320	3.274	0.000
Facility condition (FC)	0.245	0.064	0.243	2.561	0.001
Perceived security (PS)	0.156	0.061	0.155	3.268	0.000
User interface (UI)	0.126	0.068	0.125	2.685	0.000

Table 3 *Coefficients Test*

Table 4

Model	R	R square	Std. of estimate	Durbin-Watson
1	0.784	0.756	0.56984	1.942

The following equation may be used to show the extent customers are satisfied with the quality of mobile banking services.

$$\mathbf{CS= \alpha 0 + \beta 1(PE) + \beta 2(PV) + \beta 3(FC) + \beta 4(PS) + \beta 5(UI) + \varepsilon}$$

where CS is the dependent variable, 0 is the constant or intercept, 1, 2, and 3 are the slopes (Beta coefficients) for PE, PV, FC, PS, and UI, respectively, ε is the symbol for error.

The results of the performed multiple regression analysis is shown in Table 3. A p value equal to 0.050 represents 95% confidence. A p value < 0.050 represents a higher confidence. According to the findings, performance, perceived value, facility condition, perceived security, and user interface all have a direct and significant impact on customer satisfaction. These findings are used to answer the following hypotheses.

H1: Performance of the banking platform has a significant positive impact on Mobile-banking customer satisfaction. This hypothesis is supported as the results indicate a p value of 0.002 and a beta value of 0.250.

H2: Good Perceived value of the banking platform has a significant positive impact on Mobile-banking customer satisfaction. This hypothesis is supported as the results indicate a p value of 0.000 and a beta value of 0.320.

H3: A good facility condition has a significant positive impact on Mobile-banking customer satisfaction. This hypothesis is supported as the results indicate a p value of 0.001 and a beta value of 0.243.

H4: A good perceived security of the banking platform has a significant positive impact on Mobile-banking customer satisfaction. This hypothesis is supported as the results indicate a p value of 0.000 and a beta value of 0.155.

H5: A good user interface has a significant positive impact on Mobile-banking customer satisfaction. This hypothesis is supported as the results indicate a p value of 0.000 and a beta value of 0.125.

The findings indicate that the strongest impact on customer satisfaction is perceived value, followed by performance, facility condition, perceived security and the user interface.

6. Discussion and Recommendations

Due to the wide variety of phone models (supporting multiple types of technologies) available in the market, a study reveals that "mobile handset operability" is a significant challenge in mobile banking. Service providers, such as banks, must work with mobile phone manufacturers to find a solution that will make all phones, regardless of manufacturer or technology (Global System for Mobile Communications[GSM] or Code-division multiple access method[CDMA]), interoperable with a single mobile banking system (Bhatt, V., & Prajapati, M. F., 2018). The majority of clients considered "privacy and security" to be a serious problem. Banks are urged to enhance client awareness by educating them about this problem. In particular, users are concerned about losing money if a mobile device is lost (a substantial number of respondents are worried about it) (Gaver, W. W., 1991). For clients to feel secure when using mobile banking at both the bank and telecom operator levels, it is advised that banks and telecom operators create thorough joint policies

covering security and privacy. Another significant problem is "standards". The country's lack of mobile banking service standardisation has made utilising these services more difficult (especially when using mobile banking services of multiple banks). Banks are encouraged to create mobile banking standards under RBI's (Reserve Bank of India) direction to address this problem (Kahandawa, K., & Wijayanayake, J, 2014). Telecom service quality, customisation (using the user's choice language), download and installation of application software were not seen as significant or major issues. The lack of a local or preferred language, technical aspects of the application software, and telecom service quality concerns such as network unavailability may have been overlooked as key difficulties since the research was done in an urban region. Banks should be well informed about the aforementioned issues as they could be crucial in the widespread adoption of mobile banking in India.

Financial institutions may use mobile banking, which is still under development, to increase their market share and client happiness (Shaikh & Karjaluoto, 2015). The impact of technological advancements on marketing techniques is especially significant in emerging nations. The financial system has advanced greatly due to information technology. The utilisation of mobile banking services in creating customer satisfaction was the main topic of this research. This study's theoretical framework, which is a synthesis of many technical frameworks, addresses the moral justification for utilising technical support and the use of external flexibility while also talking about the acceptance of an online collaboration. Five factors, including perceived value, user interface, facility conditions, perceived security, and the dependent variable customer satisfaction, have a substantial impact on consumers' pleasure with mobile banking. These vital constructs may be utilised again as a source of information or literature to further evaluate them as a crucial element in figuring out the level of satisfaction in consumers where mobile banking is concerned. (Tam, C., & Oliveira, T, 2017).

This research also indicated that older customers are hesitant to adopt mobile banking services which could be attributed to lack of knowledge, confidence in the services provided and security concerns. In comparison to other nations, India has an extremely low utilisation of mobile banking. Customers may connect with the bank via the standard platforms provided by mobile banking. During COVID -19, mobile banking was very useful and reliable for transactions, money exchanges, fund transfers, credit card data, debit card details, and payments. Many customers were forced to switch to mobile banking due to lockdown and social distancing. Mobile banking has numerous advantages and is simple to

use, however it is not short of drawbacks. Some problems customers faces are server problems, connection problems, user interface problems, account information protection issues, safe transaction issues, and security issues. Banks need to resolve these issues, gain the confidence of the customers especially the security of online transactions, and enable and encourage all banking customers to adopt mobile banking. It is beneficial for the banks as well as it will save costs and time which will lead to the banks reaping in more profits. This transition of an increase in mobile banking will be a win-win situation for both the banks and the banking customers.

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