A Study on Mobile Banking Customer Experience in the Indian Banking Industry

Nancyprabha
V. J. Sivakumar P
National Institute of Technology
(eunicenancy@gmail.com)
(vjs@nitt.edu)

The purpose of the study is to know about how the Indian customers adopt the newly introduced financial applications technology, namely mobile banking apps and mobile payments app. The study focuses on developing a conceptual framework for Mobile Banking Apps Customer experience (MBACE) by integrating the Mobile Application Customer Experience (MACE) model and the conceptual framework of the Mobile app adoption & continuous use. Moreover, the proposed model is extended with Perceived risk in the Indian mobile banking context. The results of the study will provide insights about the customer preference on utilitarian factors to Bank authorities and Mobile banking app developers and also help them to enhance their service quality and security.

1. Introduction

Acquiring and retaining customers are the goals of any business, but doing so is a difficult job. Companies are making an extensive effort and investing huge money in customer retention, especially technology-enabled business. One of the promising techniques in customer retention is customer experience management. Customer experience studies started on the way back in 1980 (Addis & Holbrook, 2001; Garg, Rahman, & Qureshi, 2014; Palmer, 2010). Still, it is an exploring topic for researchers (Mainardes, Gomes, Marchiori, Correa, & Guss, 2019; Mihardjo, Sasmoko, Alamsjah, & Elidjen, 2019). Research focus on online customer experience(Ding, Huang, & Verma, 2011; Jaziri, 2018; Martin, Mortimer, & Andrews, 2015; McLean & Wilson, 2016; Rose, Hair, & Clark, 2011) and mobile customer experience (Hussain, Mollik, Johns, & Rahman, 2018; Komulainen & Saraniemi, 2019; Mclean, Al-nabhani, & Wilson, 2018; Shin, 2015) are high in numbers and Customer experience has an influence on the business and financial performance of the companies (Grønholdt, Martensen, Jørgensen, & Jensen, 2015).

Nowadays, the banking business also relies on technology-enabled services for faster and reliable delivery of banking products(Kant & Jaiswal, 2017). Banks are providing their services through various alternative channels, namely online banking, SMS banking, Telephonic banking, and mobile banking (Larsson & Viitaoja, 2017). Payment banks, Digital wallets, and UPI (Unified Payment Interface) are also extending their services in providing part of banking transactions. Due to the stiff market competition, banks are forced to provide excellent customer service because loyal customers are strong advocates of the brand/ company(Garrett, 2010).

Observing the rapid growth in mobile applications, every bank shows more interest in developing its mobile banking applications(Gerhardt, Schilke, & Wirtz, 2010). These made banking easy and less time-consuming. Due to the highest usage of mobile phones, mobile banking emerged as an essential banking channel. According to Juniper research 2018, m-banking users grew at a rate of 20%, down from 27% in 2016, reaching just over 1.8 billion in 20.

2. Problem Identification

As discussed earlier, banks are very keen to provide excellent customer service among all alternative channels. Even though Internet usage in rural India is increasing, internet penetration is much low compared to mobile penetration(Singh & Srivastava, 2016). So, providing banking services through a mobile platform will reach a vast unbanking population (Afshan & Sharif, 2016). Almost all banks in India launch their mobile banking technology. Due to the higher adoption of mobile payments and digital wallets and low penetration of mobile banking applications, studies on mobile banking application will help the bankers, mobile banking service providers and mobile banking app developers to understand better on customer preferences. Measuring customer experience of the mobile banking user is one the promising way of retaining customers. So based on the explored research gap, the following research questions are developed

RQ1: Do utilitarian factors affect the customer experience of mobile banking users?
RQ2: Does perceived risk relate to the customer experience of mobile banking users?
RQ3: Is there a difference in mobile banking customer experience based on gender and age of mobile banking users?
Therefore, the research objective is to address the questions mentioned above.

3. Research Objective

The primary objective is of the study is to measure the mobile banking customer experience (MBCE) using the MACE model, and the secondary objective is extending the MACE model with perceived risk construct. Moreover, the final objective of this study to find a difference in mobile banking customer experience based on the gender and age of mobile banking users. The theoretical background of this study is discussed in the following section.

4. Theoretical Background

The theoretical framework of this paper is developed based on the Mobile Application Customer Experience (MACE) model, mobile app adoption, and continuous use model and the theory of perceived risk (Featherman & Pavlou, 2002; Mclean et al., 2018).

4.1 Mobile Application Customer Experience

From the literature, the MACE model is proposed by Graeme McLean, Khalid Al-Nabhani, Alan Wilson (2018). The model developed to study the retailers' customer experience in m-commerce mobile applications. The model adapts its constructs from the TAM model (Davis, 1989) and Customer experience construct from (Song & Zinkhan, 2008). The model is consists of the following variables, namely, Customisation, Convenience, Ease of use, Enjoyment, Timeliness, and Customer experience as a second-order construct with Level of satisfaction, Frequency, and Positive emotions (Mclean et al., 2018). The study also highlights the m-commerce environment regarding Flow theory and the length of the time spent to complete the desired activity in mobile applications. The study found that there is a direct relationship between the customer experience and the utilitarian factors, namely Ease of use, Convenience, and Customization. It also discussed the moderating effect of Gender and Smartphone screen size on Mobile Application Customer Experience (MACE).

4.2 Mobile App Adoption and Continuous use

The conceptual framework on Mobile app adoption and continuous use is proposed by Malik, Suresh, & Sharma (2017). The idea was developed to study the changing consumption patterns and arrival of new technology. The model focused on the primary categories of mobile applications, namely, Hedonic applications, and Utilitarian applications. Hedonic applications are used for shopping, social media activities, and entertainment purposes, whereas utilitarian applications used for task-oriented apps or information-seeking apps.

The conceptual model is developed based on existing technology-related models, specifically TRA (Theory of Reasoned Action), TAM (Technology Acceptance Model), UTAUT (Unified Theory of Acceptance and Use of Technology) and its extension UTAUT2, TPB (Theory of Planned Behaviour), and Expectation confirmation theory. The proposed model includes the constructs of Performance Expectancy, Ease of Use, Social Influence, Enjoyment, Incentives, Facilitating conditions Aesthetics, Trust, App satisfaction, Habit, and Continuous Use.

4.3 Theory of Perceived Risk

The perceived risk theory is introduced in marketing literature in early1960 by Bauer(Crespo, Del Bosque, & De Los Salmones Sanchez, 2009). Peter and Ryan (1979) defined perceived risk as "The expectation of loss associated with the purchase of the product. Later, Perceived risk emerged as an essential aspect of internet adoption studies due to security issues associated with the Internet. Many authors studied about perceived risk in internet adoption studies (Buehler & Maas, 2018; Featherman & Pavlou, 2002, 2003; Marafon, Basso, Espartel, de Barcellos, & Rech, 2018; Martin et al., 2015; Miyazaki & Fernandez, 2000; Namahoot & Laohavichien, 2018; Q. Yang, Pang, Liu, Yen, & Tarn, 2015). Furthermore, many researchers studied perceived risk in mobile commerce (Berraies, Ben Yahia, & Hannachi, 2017; Hampshire, 2017; Y. Yang, Liu, Li, & Yu, 2015). However, the studies on the perceived risk in mobile technology acceptance are limited (Y. Yang et al., 2015). So, the current study will provide new insights about the perceived risk in mobile application context.

5. Research Model and Propositions

The base model is developed to evaluate the customer experience of mobile shopping users. For this study, the base model is developed with variable adapted from two different models in the mobile banking context, and the model is extended with a perceived risk construct. The proposed research model is depicted in Figure 1.

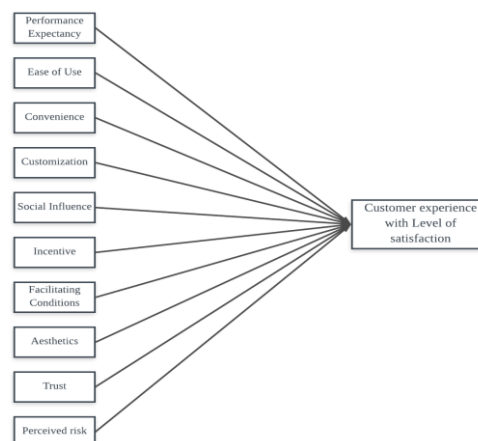**Proposition1:** Performance expectancy (PE) has a positive influence on MBACE

Figure 1 *Proposed Research Model*

5.1 Performance Expectancy (PE)
Performance Expectancy is the primary construct of UTAUT theory defined by Venkatesh et al., (2003). Performance expectancy defines as "the degree to which using technology will provide benefits to consumers in performing certain activities."(Venkatesh, Thong, & Xu, 2012).In a mobile banking context, Performance expectancy is a bank user's perception of performance improvement associated with using the mobile banking app, (Martins, Oliveira, & Popovič, 2014). Hussain et al.,(2018) argued that Performance expectancy is a critical utilitarian factor in mobile adoption context. Thus, we want to test the Performance expectancy in the Mobile Banking Application Customer Experience (MBACE) context. Hence the proposition is:

5.2 Ease of Use/Effect Expectancy (EOU)
"Effort expectancy is the degree of ease associated with consumers' use of technology."(Venkatesh et al., 2012).It also mentioned as Ease of Use by some authors(Malik et al., 2017). "Ease of use is defined as the extent to which a person believes that using a particular system will be free of effort" (Wang, Wang, Lin, & Tang, 2003). Ease of use is an essential dimension of any technology service because most the consumer prefers technology-enabled services (Davis, 1989). Moreover, ease of use determines the technology usage (Bapat, 2017). The relationship between ease of use and mobile banking adoption has been already explored by (Gu, Lee, & Suh, 2009). Moreover, ease of use is studied in a multi-channel banking context proves that ease of use is a significant determinant in technology use (Bapat, 2017). According to Komulainen & Saraniemi (2019), ease of use creates a customer experience for a mobile banking user. Thus, studying ease of use in a mobile banking app is relevant and vital. Hence, we propose the proposition is:
Proposition2: Ease of Use (EOU) has a positive influence on MBACE

5.3 Convenience (CON)
Mclean et al. (2018)claimed: "Convenience refers to the ability to efficiently complete tasks, in a way that suits the customer's situation." Convenience is the primary motivation for using technology-enabled services. It has been found as an influential factor for opting for electronic banking (Bapat, 2017). It is the main reason for creating customer experience (Garg et al., 2014). Ease of use, customization, and convenience are interlinked." and they cumulatively influence customer experience (Mclean et al., 2018). Kaura (2013) stated that convenience is an essential driver of customer satisfaction in the Indian retail banking context. Hence the proposition is:
Proposition3: Convenience (CON) has a positive influence on the MBACE

5.4 Customization(CUS)
Customization is defined as "an extent up to which the services are customized for a particular customer."(Garg et al., 2014) Tailored products or services are provided to a particular segment of customers. Initially, customization of products is done, but nowadays, with the help of mobile phones and internet, highly customized services offered to the privileged customer segments. Garg et al. (2014) already found and developed a scale for measuring customer experience in banks, including customization as an essential factor, and they also stated that customization is a value addition to service provided by the service provider. Hence studying customization in the m-banking app customer experience context will be meaningful. The proposition is:
Proposition 4: Customization (CUS) has a positive influence on MBACE

5.5 Social Influence (SI)
Venkatesh et al. (2012) defined Social Influence as "the extent to which consumers perceive that important others (e.g., family and friends) believe they should use a particular technology.". Here it indicates how the mobile banking app user perceives their family and friends to use mobile banking apps. Social Influence also knew by the similar concept of Subjective norm proposed by Ajzen (1991). "Consumer's decisions are highly influenced and shaped by the reviews and posts of the peers, relatives, friends, and other users."(Malik et al., 2017) . So, Social Influence will be a significant predictor in a mobile banking context (Hussain et al., 2018). Hence the proposition is:
Proposition 5: Social Influence (SI) has a positive influence on the MBACE

5.6 Incentive (IN)
Incentives are financial or nonfinancial benefits offered to the customers by the service providers in order to encourage them to try their new services or continue their existing service. Kim, Cha, Knutson, & Beck (2011) claimed that customer experience is influenced by the right incentive received by the customer, and they also highlighted that many researchers stated that price promotion is a decent influencer of customer experience. Hence learning incentives in the mobile banking app context will give considerable insights to this study. Therefore, the proposition is:
Proposition 6: Incentives (IN) has a positive influence on MBACE

5.7 Facilitating Conditions
Facilitating conditions refer to consumers' perceptions of the resources and support available to perform a behavior" (Venkatesh et al., 2012). Facilitating conditions mentioned as a critical aspect in Mobile apps because mobile apps need the sources technology and the Internet. So, measuring the Facilitating Condition in a mobile context is vital (Malik et al., 2017).

Initially, this construct is developed to evaluate the organizational user technology adoption later this used for users' perspective (Hussain et al., 2018). Facilitating conditions in the mobile banking app context referred to as one's skill in operating a smartphone, accessing play store & download the required mobile banking app and learning to perform the banking transaction through mobile banking apps. According to Morosan & DeFranco (2016), Facilitating conditions has positively affected the customer experience of mobile device users. Therefore, the construct has the potential to be investigated in a mobile banking context. Hence the proposition is:

Proposition 7: Facilitating Conditions (FC) has a positive influence on MBACE

5.8 Aesthetics

Aesthetics referred to as a visual/physical appearance of the website or mobile site. Xu, Peak, & Prybutok (2015) claimed that aesthetics is an essential determinant of IT adoption, and he also stated that it is a relevant concept for mobile apps too. Sahoo & S. Pillai (2017) found that aesthetics plays a crucial role in influencing mobile banking behavior. So, it will be essential to study aesthetics in mobile banking app customer experience, and the proposition is:

Proposition 8: Aesthetics (AS) has a positive influence on MBACE

5.9 Trust

Trust is defined as "the willingness of a party to believe the actions of another party"(Tingchi Liu, Brock, Cheng Shi, Chu, & Tseng, 2013). Malaquias & Hwang (2016)stated that Trust is a catalyst for building a mutual relationship between customer and service provider. Furthermore, (Hampshire, 2017) said that trust and risk are the key drivers influencing mobile payments adoption. Trust is the platform of any financial services provider to continue the services. A banking study without trust is improper. Here also trust is included as one of the antecedences of the mobile banking app customer experience, and the proposition is:

Proposition 9: Trust (TRU) has a positive influence on MBACE

5.10 Perceived Risk

When there is lack of trust, the perception of risk emerges. Perceived risk is defined as the uncertainty associated with a purchase of product or availing a service. Risk a significant hindrance to use technology-enabled services. Risk in mobile banking refers fearing to lose their personal information, transaction data, money, and security breach in their device. Risk can be classified into eight dimensions namely, financial risk, performance risk, privacy risk, psychological risk, security risk, social risk, time risk, and overall risk. The survey conducted in Europe regarding m-banking usage found that 56% of non-mobile bankers, this is due to fear of risk associated with mobile banking. Hence, studying the perceived risk in the mobile banking app is vital, and the proposition is:

Proposition 10: Perceived risk (PR) has a negative influence on MBACE

5.11 Customer Experience

Customer experience is unique and personal to each customer. Even though the service is highly uniform and standardized, each customer perceived their own experience. Customer experience creation is two-way. The service provider/organization create part of it, and another part will be created and perceived by the customer to whom the service provided. So the memorable, good experience made them revisit or repurchase their Service/product. (Jaziri, 2018). Customer experience will be a separating factor for every service provided; It serves as a competitive edge ((Gentile, Spiller, & Noci, 2007)(Shaw & Ivens, 2002). Due to its high individuality to each customer, measuring and providing a unique experience to the customers is quite a challenging job ((Bolton et al., 2018; McLean & Wilson, 2016). Hence the study focuses on the above factors and their influence on the customer experience.

6. Research Methodology

6.1 Measurement Instruments

All items are measured using existing scales adapted from various studies. Customization, Convenience, and Customer experience with the level of satisfaction are adopted from Mclean et al., (2018). Performance expectancy, Ease of use, Facilitating conditions, Social Influence are adopted from Venkatesh, Thong, & Xu,(2012). Trust and Perceived risk via taken from Liébana-cabanillas, Sánchez-fernández, & Mu, (2014), (Featherman & Pavlou, 2003) correspondingly.

6.2 Sample

The targeted population for the study is any Bank customers (Public banks, Private banks, foreign banks, and Small finance banks) who are using corresponding banks' mobile banking app for their day to day transactions. Their recent usage is taken into consideration to the measure Mobile Banking App Customer Experience reliably. So, the filter question will be asked to respondents about their last transaction using mobile banking apps.

6.3 Data Collection

The online survey will be used to collect the required sample data from the customers based on India, who are using mobile banking apps. All the items in the questionnaire are measured using a 7-point Likert scale (1--strongly disagree, 2--disagree,

3--somewhat disagree, 4--neither agree nor disagree 5--somewhat agree, 6--agree, 7--strongly agree).Structural Equation Modeling (SEM) technique will be used to analyze the data.

7. Findings

The distinctiveness of this study is to extend the Mobile Application Customer Experience (MACE) model into a Mobile application Customer experience (MBACE) context and adding perceived risk construct with an existing model. If the model empirically validated, it will give information about how the independent variables, namely Performance expectancy, Ease of use, Social Influence, facilitating conditions, Customization, Convenience, Incentive, Aesthetics, Trust and Perceived risk will influence the Customer experience of Mobile Banking Application users.

8. Implications

As mentioned earlier, if the conceptual model of the study empirically validated, the results of the study will help the authorities of banks in India, mobile application service providers, mobile banking software developers, policymakers, and companies who are going to launch the mobile payment. The results will help them to know the reason why the customers are going for mobile banking applications and in which aspects developers should enhance the mobile banking app features to attract more mobile banking app users. Moreover, the study also gives understandings of the level of satisfaction among mobile banking app users.

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