

**The determinants of customers' continuance intention to use
digital banking: Public and Private Banks**

Macro Research Report

submitted to

**Indian Institute of Banking & Finance
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By

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Abstract

Service organizations need to understand post-purchase behavior of customers to survive in the competitive world. The banking sector is no exception to this. Indian banking sector has been continuously making investments in technology using a customer centric approach paving the way for digital banking service channels. Over time, the adoption or acceptance of digital banking by customers has been improving. However, of late, there has been a volatile trend in terms of value and volume of digital banking. This study aimed at understanding the important drivers of the continuance intention usage. The important determinants were identified with UTATU2 model and Expectation-Confirmation Model. Accordingly, UTAUT2's seven constructs namely, financial cost, risk factors, confirmation on expectation and overall experience, were identified as determinants of continuance intention usage. Data was collected through structured questionnaire with a sample of 591 bank customers. The conclusions were that a majority of the sample respondents were familiar with mobile and other devices and 80 per cent of customers had better knowledge of digital banking channels. Among various factors for the lower usage of digital banking were technology related issues, lack of information, absence of need and security threat. Performance expectancy and hedonic motivation among the UTAUT2 constructs, financial cost, fulfilling customer expectation and risk reduction are the significant drivers of continuance intention usage of digital banking. On profiling the sample respondents, the study found performance expectancy and social influence as important variables that discriminate between public and private sector bank customers.

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CHAPTER 1 INTRODUCTION

1.1 Introduction

Digital banking is undergoing a sea change in the Indian economy. Electronic clearing through different modes like Unified Payment Interface and National Automated Clearing House has registered about 29 times increase in value and 2 times in volume from 2015-16 to 2017-18. Reserve Bank of India in its agenda highlights four strategic pillars namely: (a) responsive regulation (b) robust infrastructure (c) effective supervision and (d) customer centricity to achieve its vision of less-cash-based transaction through the smooth functioning of digital banking. To improve the awareness and adoption of digital banking among customers in India, a customer centric approach requires understanding of aspects like complaints handling systems through grievance and redressal mechanism, transparency in charges, and *customer choice on digital payment systems*.

Mobile banking users increased from 5.96 million in 2010-11 to 251 million by March 2018. RBI data indicates, “The payment and settlement systems recorded robust growth in 2017-18, with volume and value growing at 44.6 and 11.9 per cent, respectively, on top of an increase of 56.0 per cent and 24.8 per cent, respectively, in 2016-17”. With a huge population adopting digital banking, this decrease in value and volume is a cause for concern. This study aims to understand the reasons for the drop in value and volume by understanding the intention of consumers to continuously use digital tools for accessing banking services.

1.2 Unified Theory of Acceptance and Use of Technology2 (UTAUT2) and its relevance in Digital Banking System

Many studies in the past, investigating acceptance and use of technology, identified several factors that predict behavioral intentions to use technology. These factors included perceived behavioral control (Kurland 1995), ease of use (Petter et al. 2008; Seddon and Kiew 1996; Hwang et al. 2008; Petter and McLean 2009), social influence & cognitive instrumental processes (Venkatesh and Davis 2000), perceived usefulness, perceived ease of use and subjective norms (Wu and Wang 2003). The theoretical underpinnings to study the technology adoption models lay thrust on models like Innovation Diffusion Theory (IDT) (Park and Chen 2007), Davis's Technology Acceptance Model (TAM) (Park and Chen 2007; Surendran 2012; Agrawal 2013), TAM combined with Theory of Planned behavior (TPB) (Taylor and Todd 1995), TAM combined with Information Diffusion Theory (TAM-IDT) (Cheong & Park, 2005; Mao et al., 2005). The growing interest in the TAM model lead to a series of synthesis of previous models with newer variables and development of integrated models like TAM2 (Venkatesh and Davis 2000), followed by Unified Theory of Acceptance and Use of Technology (UTAUT) (Venkatesh et al 2003) and TAM 3 (Venkatesh and Bala 2008). Each of these models explains the behavioral intention before the behavior occurs. Behavioral Intention in the TAM models also emerged as an important predictor of actual behavior. Behavior is an individual's observable response (David Tang 2016) in a given situation with respect to a given target. Further research needs to uncover additional factors that can lead to use behavior.

Researchers criticized TAM and its extended models along with UTAUT because of their relatively low explanatory power on behavioral intentions and for their inconsistent or

even contradictory results (Jackson et al., 1997, Karahanna and Straub 1999, Chau and Hu 2001, Legris et al. 2003, Gallivan et al., 2005). Some studies found TAM to be an insufficient predictor of system usage, as they observed that after acceptance and use of technology, a user would typically adopt, explore and extend use of the technology (Jasperson et al., 2005). Researchers have found TAM models to be useful mostly within organizations for evaluating applications or technologies or to make comparisons between user groups or applications (Fu et al., 2006) and not for consumer usage in a voluntary environment. TAM has only ease of use, which is an internal control factor and does not identify the skills and resources needed to use the system. It also does not include any social variables and cooperation of others (Olushola and Abiola 2017). Similarly, UTAUT does not include individual factors that may help explain information system acceptance (Hakami et al 2014), UTAUT came under further criticism as studies tested the model mostly in developed countries. In addition, there were inconsistencies when studies applied the model in developing countries. In other words, researchers could not apply UTAUT, and needed further exploration in other situations (Venketesh et al 2003). Moreover, studies used UTAUT model in an organizational setting where companies instructed employees to use the technology mandatorily. This limits the model's usage to technologies that firms adopt to enhance their business performance.

Venkatesh et al (2013) extended the UTAUT model using new constructs namely, habit, hedonic motivation and price value, thus tailoring it to an individual consumer-use-context model called UTAUT2 model. This increased the technology acceptance model's applicability in utilitarian and hedonic uses in voluntary use contexts for individual usage. The current research aims to examine UTAUT2 model's ability to explain continuance intention and use behavior of digital banking consumers. Past studies on behavioral intentions have argued that continued intention to use should be excluded

from the UTAUT model, as the focus is more on the actual usage behavior. However, as predictions of actual use behaviors are always difficult, a new construct behavioral intention to continuous usage BICU (Cheung & Limayem 2005) emerged while studying Information Systems (IS) use.

The success of a technology not only depends on its initial acceptance but also on its continued usage. Prior work on technology use in the developing world has often focused on adoption and little on continuance (Olam et al 2017). Previous technology acceptance models like TAM, view continuance as an extension of acceptance behavior (Karahanna et al. 1999, Venkatesh and Davis 2000, Hong et al 2008). TAM uses the same pre-adoption variables to predict both adoption and continuance decisions. To investigate the difference between initial adoption and continuance, it is necessary to investigate the user's motivation after her initial adoption. Consumer's intention to continuous usage of information system is based on feelings of attachment (Fullerton, 2003; Gruen et al 2000) and the user's self-interest in a relationship (Gruen et al., 2000; Moliner et al., 2007). For instance, users' continued participation in an online community is not only attributable to the technology itself but also to the relationship with the social group (Koh and Kim 2003). With respect to these issues, the current research work intends to examine whether UTAUT2 constructs positively predict BICU in digital banking users.

1.3 Theoretical Background

This section includes a review of the literature pertaining to technology adoption model UTAUT2, key predictors in Information Systems (IS) continuance model that explain the intention to continuous usage of mobile banking and integrated information systems continuance model.

1.3.1 UTAUT2 Model

UTAUT model incorporates the benefits of other technology acceptance models and explains as much as 70 percent of the variance in intention to use technology, which is higher than the variance explained by other general models on technology acceptance (Venkatesh et al., 2016). By integrating 8 prominent models explaining individual adoption mechanisms, UTAUT hypothesizes that three main constructs namely (a) Performance Expectancy (“the degree to which an individual believes that applying the technology will help him or her to attain gains in job performance”), (b) Effort Expectancy (“the degree of ease associated with consumers’ use of technology/System”) and (c) Social Influence (“the extent to which an individual perceives that important others believe he or she should apply the new system”), determine Behavioral Intention (“the degree to which a person has formulated conscious plans to perform or not perform some specified future behavior(s)”). Behavioral Intention in turn, together with Facilitating Conditions (“the degree to which an individual believes that an organizational and technical infrastructure exists to support the use of the system influences”) influences Use behavior (“an action or specific behavior performed by a person when interacting with a technology system”) (Venketesh et al 2003, Aarts, Verplanken, Knippenberg 1998)).

The UTAUT model also includes gender, age, experience and voluntariness of use (Venkatesh et al., 2003) as moderating effects. However, the UTAUT model was developed to explain the individual adoption of IS in organizations. In the current study, we focus on consumer context of digital banking application adoption. Hence, we need a model that is specifically developed for the individual consumer context. The UTAUT2 was tailored specifically for consumer use context (Venkatesh et al., 2012). This

increased its applicability in utilitarian and hedonic contexts and voluntary set ups in a broad range of technology usage contexts. In the UTAUT2 model, the original UTAUT was supplemented with Hedonic Motivation, Price Value and Habit with Gender, age, experience to moderate and strengthen the relationship of variables on usage intention and behavior. UTAUT2 is applicable in both utilitarian and hedonic contexts for studying technology usage in both consumer and non-consumer settings (Venkatesh et al, 2012). New media technologies are meant for individuals for utilitarian and hedonic activities (Alexander, Jeyaraj, and Walinski 2013) and digital banking applications have both hedonic and utilitarian attributes.

1.3.2 Behavioral Intention to Continuous usage (BICU)

Behavioral intention (BI) refers to, “the degree to which a person has formulated conscious plans to perform or not perform some specified future behavior(s)” H. Aarts, B. Verplanken, and A. Van Knippenberg (1998). Thompson et al. (1991) and Shan et al., (2008) have argued that behavioral intention should be excluded from UTAUT models, as the focus is more on the actual usage behavior. However, as predictions of actual use behaviors are always difficult; a new construct behavioral intention to continuous usage (Cheung & Limayem 2005) emerged while studying IS use with individuals who had prior experience in (a) same IS use or (b) were at different stages of experience with the same technology or (c) were updating their beliefs and preferences with past experience of technology. There is significant variance on how USE is conceptualized and measured. Burton Jones and Jones (2006) have summarized various measures of the USE construct like “method of use, extent of use, proportion of use to perform a task, duration of use, frequency of use, decision to use, voluntariness of use, variety of use, specificity

of use (specific or general use), appropriateness of use (appropriate versus inappropriate use), dependence on use (degree of dependence on use)”.

1.3.3 IS Continuance Model

There has been a continued effort to build a robust model of both initial acceptance (Hong et al 2008) and continuous usage of technology. Studies suggest that determinants of user acceptance and continuance use differ (Karahanna et al., 1999; Venkatesh and Morris, 2000) and the focus of research has been diverted (Bhattacharjee, 2001; Limayem and Cheung, 2008; Venkatesh and Goyal, 2010; Zhou, 2013; Bhattacharjee and Lin, 2014) towards user continuance intention and behavior toward technology. Bhattacharjee adapted the Expectation-Confirmation Theory (ECM), to theorize a new IS continuance model for explaining post-acceptance behaviors. Extant literature finds an increase in studies in IS area examining why users continue or discontinue using information technology (Kim & Steinfield, 2004; Flavian et al., 2006; Thong et al., 2006).

Long-term value of any technology is realized when users continue its usage and not just with its adoption (Bhattacharjee, 2001; Limayem et al., 2007). A growing literature of continuance studies (e.g. Larsen et al., 2009; Thong et al., 2006; Limayem and Cheung, 2008; Zhou, 2013; Bhattacharjee and Lin, 2014), has been made in the developed world, which has left a scant knowledge of the phenomenon in the developing world. The ECM-IS looks into the post-acceptance research without the pre-acceptance theory framework which many of the previous Technology acceptance models failed to explain (Gang Lia, Xin Shi 2012).

In the IS continuance model, the user, it is assumed, after the initial adoption and use, forms an opinion due to the confirmation between his prior expectations before the use

and after the initial use, and this develops a enhanced expectations about the benefits (Larsen et al. 2009).

1.4 Objectives of the Study

1. To study the awareness among bank customers on various digital banking systems
2. To study the significant determinants on customers' continuance intention to use digital banking; and
3. To profile the digital banking customers based on the determinants by applying the UTAUT2 framework

1.5 Research Model and Hypotheses

The study proposes a research model by extending the well-established and validated UTAUT2 model (Venketesh et al 2013) with Expectation-Confirmation model of IS continuance (Bhattacharjee, 2001). to examine banking customer's continuance intention to use digital banking.

The key constructs of UTAUT2 model along with the model of IS continuance behavior was studied using the following hypothesis. Figure 1 depicts the comprehensive research model.

Performance expectancy (PE): Wu, Tao and Yang (2007) found performance expectancy and social influence as predictors of behavioral intention. Hong and Kang (2011) found that the influence of PE on BI to adopt MP3 and internet banking was insignificant. Similarly, PE was found significant in adoption of Mobile internet Technologies in a study undertaken in Saudi Arabia (Baabdullah et al 2014). In study

related to adoption of m-banking services in Ghana PE was not significant in affecting consumers BI (Kwateng, Atiemo, Appiah 2018), Hence

H1a: PE has a positive effect on the Continuance Intention Usage of digital banking

Effort expectancy (EE): Goncalo Baptista and Tiago Oliveira (2017), MK Gharaibeh, MRM Arshad (2018) and Maya F. Farah et al (2018) and Kwame Owusu Kwateng et al (2018) noted that effort expectancy does not significantly predict behavioral intention of mobile banking. Hence

H1b: EE has a positive effect on the Continuance Intention Usage of digital banking.

Social influence (SI): Research by Nasir (2013), Venkatesh et. al. (2012), and Pahnla et. al. (2011) shows that social influence has direct influence on behavioral intention. In mobile banking context, Maya F. Farah et al (2018) noted a positive effect of social influence on intention to use contrary to the findings of Syed Ali Raza, Nida Shah, and Muhammad Ali, (2018) who reported that there is no effect of social influence on behavioural intention, hence

H1c: SI has a positive effect on the Continuance Intention Usage of digital banking.

Facilitating conditions (FC): Venkatesh et. al. (2012) and Pahnla et. al. (2011) found that FC has direct influence on behavioral intention and also use behavior while Jambulingam (2013) found that FC is not a significant driver of BI in m-learning adoption. Maldonado, Khan, Moon and Rho (2009) found facilitating condition to be non-significant in predicting use behavior of e-learning technology. In mobile banking context, Syed Ali Raza, Nida Shah, and Muhammad Ali, (2018) reported that there is a positive effect of facilitating condition on behavioural intention. However, Maya F.

Farah et al (2018) and Kwame Owusu Kwateng et al (2018) have noted an insignificant association between facilitating condition and intention to use, therefore, the following hypothesis is proposed:

H1d: FC has a positive effect on the Continuance Intention Usage of digital banking.

Hedonic motivation (HM): Brown and Venkatesh (2005) found HM to be an important determinant of technology acceptance and use in consumer context. In mobile banking context, most researchers noted a positive effect of hedonic motivation on behavioural intention to use, hence,

H1e: HM has a positive effect on the Continuance Intention Usage of digital banking.

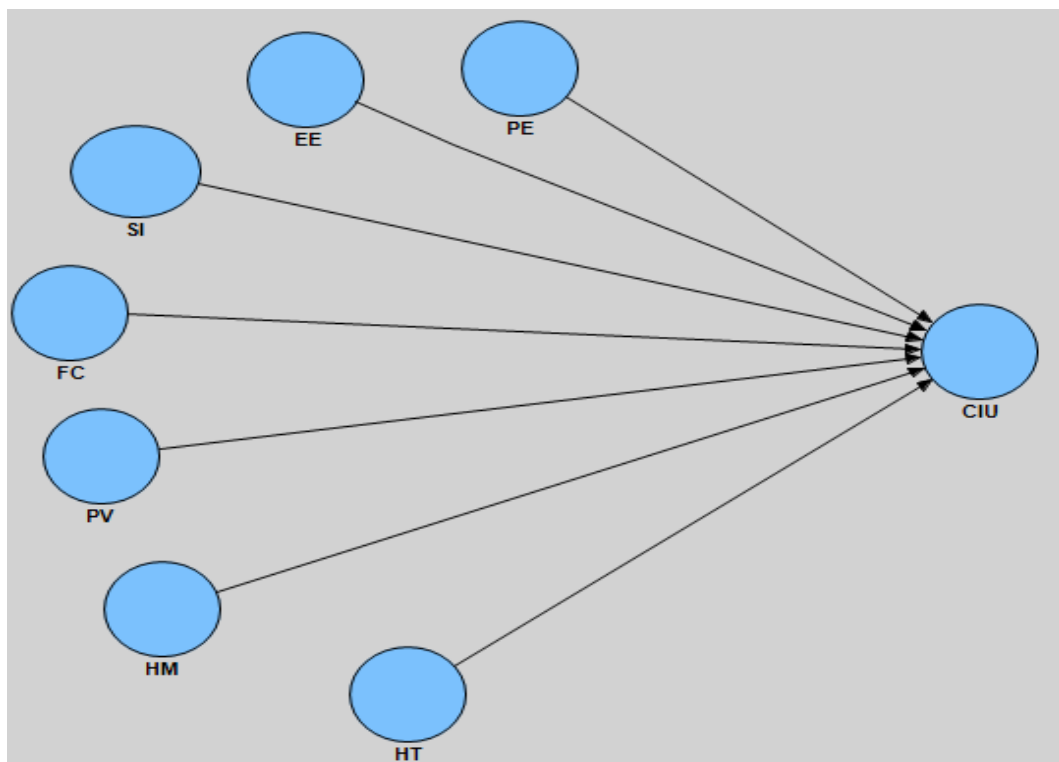


Fig.1: Model 1 - UTAUT2

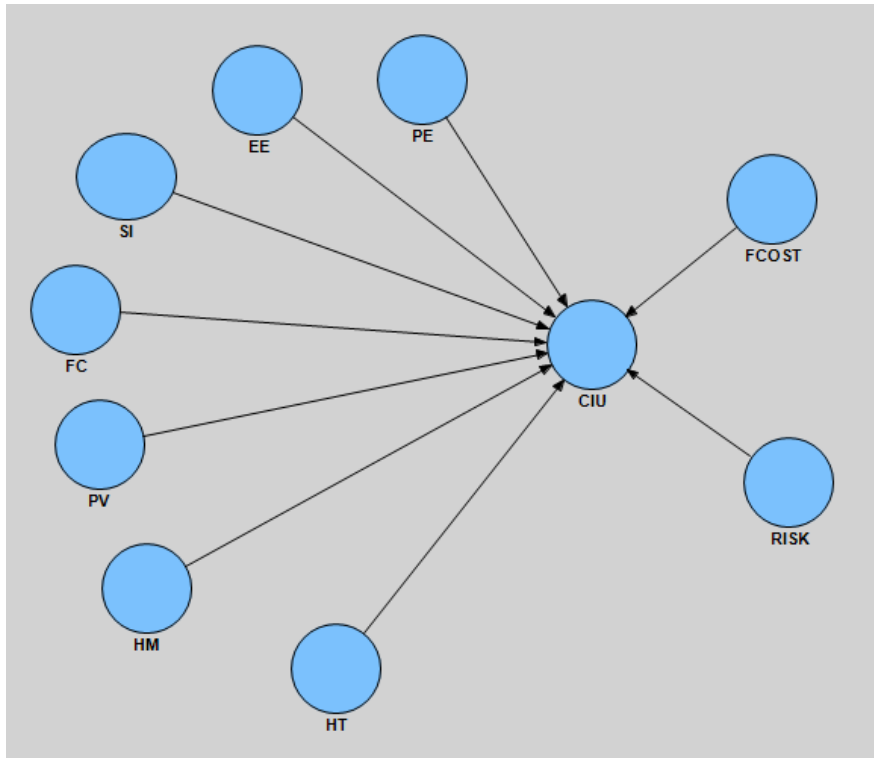
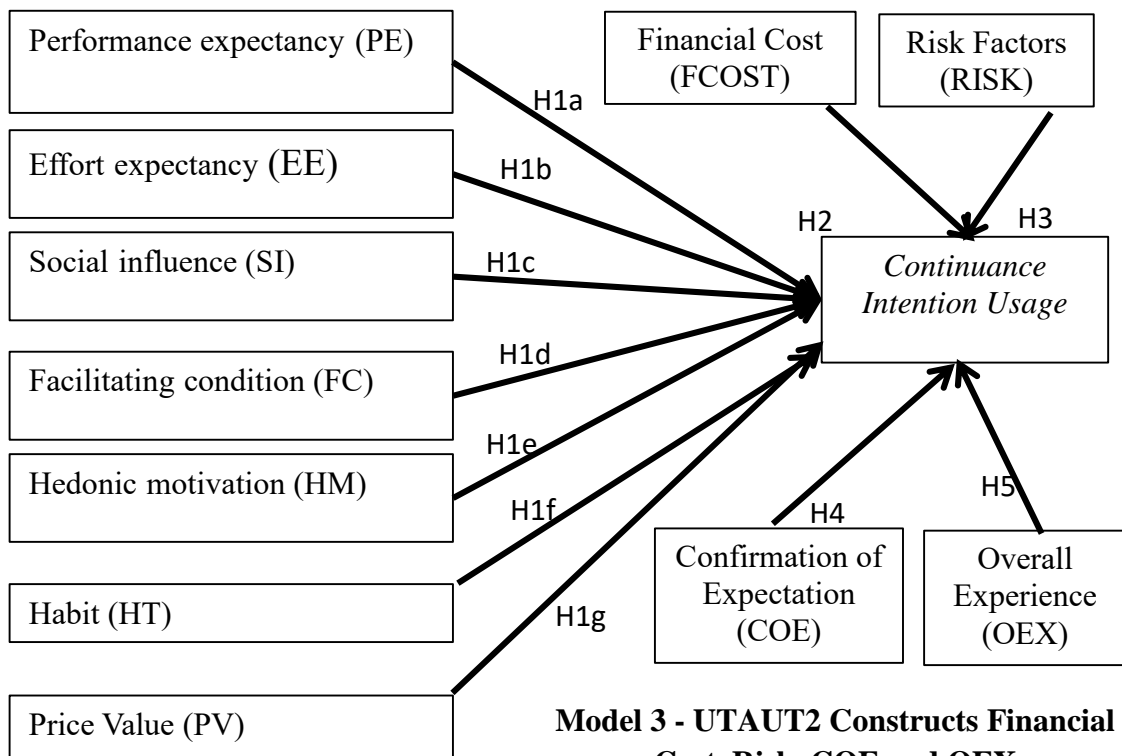


Fig.1: Model 1 - UTAUT2, Financial Cost (FCOST) and Risk Factors (RISK)



Model 3 - UTAUT2 Constructs Financial Cost, Risk, COE and OEX

Habit (HT): Easy learning has been referred to as Habit in many of the earlier studies. Jorge et al (2015), Albashrawi & Motiwalla (2017), Huey et.al (2017) and other researchers have stated that internet banking was greatly influenced by habit which relates to how easy is learning internet banking. Accordingly, the following hypothesis is stated:

H1f: HT has a positive effect on the Continuance Intention Usage of digital banking.

Price Value (PV): Several researchers have defined PV as representing Cost benefit comparison by consumers in using or continuing to use the technology. In technology adoption and usage studies like the ones by Gupta and Dogra (2017) and Paulo (2018), price value did not affect usage of the technology. To test the findings, in this study the proposed hypothesis is:

H1g: PV has a positive effect on the Continuance Intention Usage of digital banking.

Financial Cost (FCOST)

Several earlier studies noted that financial cost acts as a barrier for use of technology. In mobile banking context, Cudjoe et.al (2015), Bhatiasevi (2016) and Singh & Srivastava (2018) observed that financial costs were not a major consideration for adoption of mobile banking. Accordingly, the study proposes:

H2: Financial Cost does not effect to Continuance Intention Usage of digital banking.

Risk Factors (RISK)

Earlier studies like Koenig-Lewis et.al (2015) Afshan, S., & Sharif, A. (2016) and Cocosila & Trabelsi (2016) have found that risk affects adoption. However, theoretical

and empirical studies have given mixed findings on the effect of perceived risk on intention to use. In this study it is proposed that

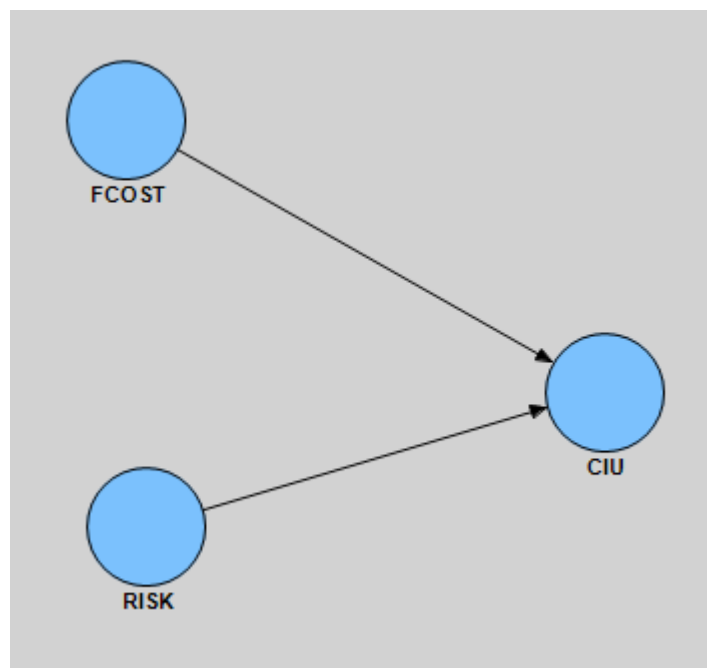
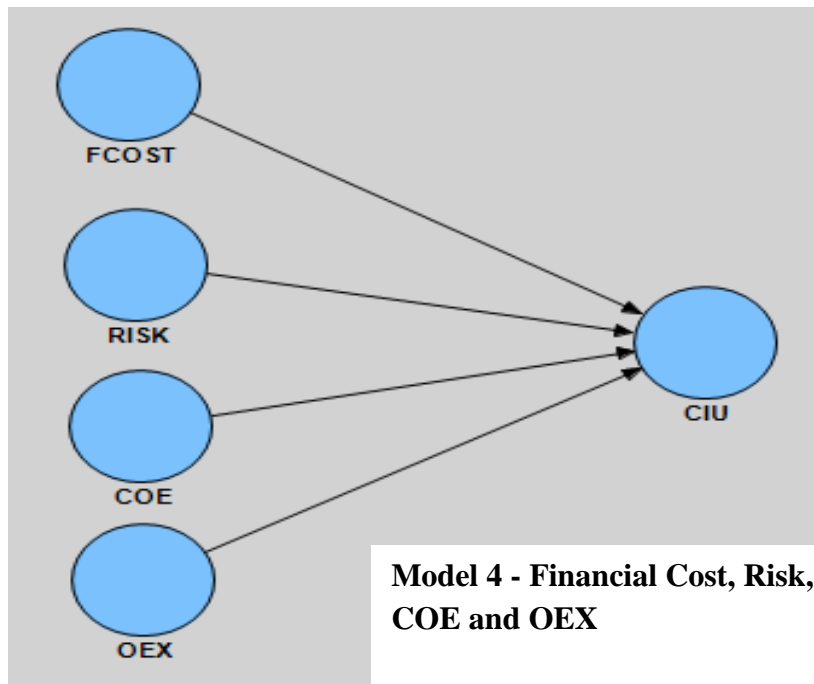
H3: Risk factors positively affect to Continuance Intention Usage of digital banking.

Confirmation on Expectation (COE): Anol Bhattacharjee (2001) observed that confirmation explains the effect of continuance intention through satisfaction. Other scholars like Vedadi, A., & Warkentin, M. (2016), Susanto, A (2016), Rahi, S., & Abd. Ghani, M. (2019) have confirmed the findings of Anol Bhattacharjee (2001). However, this study intends to study the direct effect of confirmation-on-expectation on continuance intention of digital banking and proposes:

H4: COE has a positive effect on the behavioral intention to continue using digital banking.

Overall Experience (OEX): Anol Bhattacharjee (2001) found that overall experience in terms of satisfaction with four indicators directly and positively influences the continuance intention to use. Researchers like Lee and Kwon (2011), Shunbo Yuan (2014), Susanto (2016), Ahmed Alghamdi et al (2018) have reported findings in line with Anol Bhattacharjee on satisfaction. This study proposes

H5: PV has a positive effect on the behavioral intention to continue using digital banking.



1.6 Scope

The study highlights the most important drivers of continuance intention usage of digital banking by customers of public and private sector bank. By understanding the barriers and drivers, banks can formulate strategies to increase the consumers' continuous use rather than adoption of technologies like digital banking.

Many studies have concentrated only on the UTAUT2 factors related to adoption or acceptance of technology. The inclusion of constructs based on the Expectation-Confirmation Model (ECM) namely Confirmation and Overall Experience along with financial cost and risk factors would give more insight on the predictors of continuance intention usage of digital banking.

1.7 Chapters

This report consists of five chapters.

The first chapter provides a brief introduction to the study, highlights the relevance of UTAUT2 in digital banking and briefs about the theoretical framework, background of three conceptual models used in this study, objectives, models, hypotheses and scope.

The second chapter summarizes earlier studies related to continuance usage of technology in general and digital banking in particular and the development of various models to lay a foundation for understanding the theoretical context of the study.

The third chapter explains the study methodology including research design, instrument development, sampling design, and analysis plans.

Chapter four presents the data analysis and inferences, structural equation model through Partial Least Square, MANOVA, and step-wise discriminant analysis.

Chapter five enumerates the important findings, implications and conclusion.

CHAPTER 2

REVIEW OF LITERATURE

The literature review for the study can be grouped under 2 broad dimensions namely UTAUT 2 model use and continuance usage intention. These two are the key aspects of the study of digital banking in this macro research project.

2.1 Extended Unified theory of acceptance and use of technology UTAUT 2

The Extended Unified theory of acceptance and use of technology (UTAUT) model is a result of the efforts in the marketing profession to understand the factors that lead to the acceptance and use of technology. This theory is called so as it combines 8 different theories that explain technology usage behaviour. The 8 theories are theory of reasoned action, technology acceptance model, motivational model, theory of planned behavior, a combined theory of planned behavior/technology acceptance model, model of personal computer use, diffusion of innovations theory, and social cognitive theory. Venkatesh et al. (2003) validated this new theory using a longitudinal study. They found that UTAUT could explain 70% of the variance in Behavioural Intention to Use (BI) and about 50% in actual use.

The prevalence of technology in consumer use of products and services compels researchers and practitioners to probe into the reasons for acceptance and use of technology in various products and services. In the initial stages of the research on technology acceptance and use, the focus was on businesses and organisations. Technology use first started with automation of several processes in business both in the manufacturing and the services sector. Infusion of technology in businesses was not without its initial reluctance for acceptance of technology and the fears of large scale

unemployment. In addition, introduction of technology needed relook and reorganising the processes in businesses to bring in efficiencies. Thus, business process reengineering preceded attempts at automation of processes. This led to human resource related issues in technology acceptance and use, in addition to the constraints in training employees into new processes and upgrading their skills to deal with a new workplace. Thus, much of the management research in the 1980s was focused on organisational behaviour with the introduction of technology.

In the banking sector too in the Indian context, many studies were conducted to understand why employees and banks accepted or opposed automation in various banking processes. A key fear was the fear of job loss and, in addition, the reskilling required that would make the current job routines irrelevant. However, with growing population, the banking of the unbanked in a large scale, and the opening up of the banking sector to private sector players, technologically savvy banks caught the attention of the young banking population. Most of the young consumers were happy to do transactions without visiting a bank branch. The advent of core banking solutions and remote ATMs resulted in hastening this trend. Consumers were no more consumers of a specific branch but of the bank, as they could easily shift their accounts from one location to another without changing their bank accounts or opening new accounts. Digital banking expanded with the increase in the various services (Internet banking, Mobile banking, UPI, National Automated Clearing House NACH - centralised web-based payment solution to handle bulk payments (like dividend and salary) and Point of Sale (POS) provided through the digital mode. The infusion of technology in services brought in benefits in a variety of sectors.

An another study by Venkatesh et.al (2012) with UTAUT2 is a refinement of the UTAUT model (Venkatesh et.al (2003)) that focused on what factors influenced employees in

acceptance and use of technology. UTAUT represented an organisational context and the 4 major factors identified in its initial formulation were organisation factors namely, performance expectancy, effort expectancy, social influence, and facilitating conditions. Venkatesh et al (2012) however found that in the case of consumers (who do not relate to an organisational context), three other factors also influenced their decision making in service consumption. These three factors are Hedonic motivations, Price Value and Habit. Therefore, the UTAUT2 model has 7 factors that lead to behavioural intention and use behaviour.

The key factors that were identified meant the following for acceptance and use of technology:

1. Performance expectancy – benefit
2. Effort expectancy – ease and comfort
3. Social influence – peer pressure
4. Facilitating conditions – conducive environment
5. Hedonic motivation –pleasure
6. Price value – cost benefit comparison
7. Habit – easy learning

Most of the research using UTAUT2 model have followed one of the following modes.

1. Use of the model in different technology enabled services contexts like mobile based health systems, social networking games, job search apps, etc.
2. Use of the model to study the link to only behavioural intention or use behaviour
3. Extending the model by adding new variables like privacy, trust

4. Mediating and moderating variables like age, gender have also been used to find their influence on the dependent variable namely behavioural intention or use behaviour.
5. Citing the different-country and within-country contexts, the model has also been tested in different geographies.

In banking services, the UTAUT as well as UTUAT2 models have been tested for different services like online banking, sms banking, mobile banking etc. individually.

Rita et.al (2018) observed that Perceived Value influenced intention to use and recommend Mobile Hospitality Services and also explain behavior intention. Baabdullah (2018) studied Mobile Social Network Games applying the UTAUT2 model and found that awareness affected performance expectancy social influence impacted behavioural intention. Neeraj & Neelika (2018) in their study on E-Recruitment Mobile Apps using UTAUT2 model found that use job search apps was significantly affected by efforts expectancy and social influence affected adoption. Huey et.al (2017) in their study on use of Airbnb services noted that hedonic motivation, price value and habit affected BIU while actual use was affected by facilitating conditions and behavioral intention. Jorge etal (2015) in their study on elderly and internet banking observed that internet banking was greatly influenced by habit which relates to how easy is learning internet banking. Tandon et.al (2018) found that performance expectancy significantly influenced behavioral intention. Gan Wee Leong et al (2017) in their study on behavioural intention to adopt IoT for Smart City in Malaysia noted that Performance expectancy was the key influencer. Al-Magrabhi et.al (2011) observed that while perceived risk negatively affected online shoppers' satisfaction, website functionality positively impacted their satisfaction

In their study using UTAUT2 model on mobile applications usage, Paulo (2018) found that price value and social influence as factors did not affect usage. Adoption of mobile augmented reality in tourism (MART) utilising a combination of the UTAUT2 and task technology fit (TTF) models have been studied. Albashrawi & Motiwalla (2017), claimed in their conceptual study that satisfaction, habit, performance expectancy, and effort expectancy could explain adoption.

Hew et.al (2015) noted that the most important drivers of continuance intention of mobile apps are satisfaction, habit, performance expectancy, and effort expectancy. Martins et.al (2018) observed that Habit, Effort Expectancy and Facilitating Conditions influenced e-books adoption. In a study on Malaysian university students, Tarhini et.al (2017) opined that effort expectancy (EE), social influence (SI), facilitating conditions (FC), hedonic motivation (HM) and habit (HT) have significant effects on Buying Intention (BI). Gao et.al (2015) in a study on healthcare wearable technology noted that technology, health, and privacy affected their adoption. In addition, they found that among fitness device users, perceived privacy risk and perceived vulnerability were important factors in influencing adoption.

Gu et.al (2016) found that privacy and trust were factors other than the utaut2 factors that affected consumer's initial trust in wearable commerce. Baptista & Oliveira (2017) in a study among Brazilian local banking consumers observed that gamification enhanced the use of mobile banking services. A Jordanian study concluded that effort expectancy (EE), social influence, and perceived e-banking services quality significantly predicted e-banking services adoption. Vinod et.al (2016) observed that personalizing the Web increased behavioral intention to use e-government services. Yapp et.al (2018) in their study on on-demand services trying to differentiate between males and females concluded that personalization and compatibility were important for males and females

respectively. In addition, they found that immediacy and innovativeness impacted buying intentions for on-demand services.

Khatimah et.al (2019) found that payment habit mediated usage of e-money when they used the utaut2 model. Makanyeza & Mutambayashata (2018) noted that Social influence, facilitating conditions and perceived financial cost did not have a significant effect on behavioural intention to adopt plastic money in Harare Zimbabwe. Gupta and Dogra (2017) observed that travellers' intentions and their habits of using mapping apps affected adoption of mapping applications to use the technology. However, it was noted that effort expectancy, social influence and price value had no significant effects on the tourist's intentions to use mapping apps while travelling

2.2 Financial Cost and Risk Factors

De Kerviler et.al (2016), while studying the adoption of in-store mobile payment, noted that privacy risk among the various risk types was a key driver in adoption. Cudjoe et.al (2015) in their study in Ghana for a bank's customer in adopting mobile banking found that perceived financial cost was a major barrier to mobile banking adoption. Bhatiasevi (2016) noted that financial costs was not a major consideration for adoption of mobile banking whereas perceived credibility influenced mobile banking adoption in Thailand. Afshan, S., & Sharif, A. (2016) noted in their Pakistan based study that initial trust and familiarity with the bank which relate to perceived risk as influencing acceptance of mobile banking. Cocosila & Trabelsi (2016) observed that an integrated value-risk perception played a key role in contactless mobile payments adoption. In an India based study, Singh & Srivastava (2018) found that perceived financial cost influenced customers' intention to adopt mobile banking. Slade et al (2015) in their study on consumer adoption of proximity mobile payments in the UK observed that trust and

risk had an influence on mobile payments adoption. Koenig-Lewis et.al (2015) in their study found that perceived enjoyment lowered perceived risk. Similarly social influence reduced perceived risk.

2.3 Expectation and Confirmation Model (ECM)

The post-behaviour of technology adoption and/or acceptance by the customer is explored with expectation-confirmation model (Lin, Wu and Tsai, 2005). The ECM focus on the predictors of continuance intention usage which is primarily based on the Expectation-Confirmation Theory by Oliver (1980). Accordingly, Anol Bhattacharjee (2001) noted that confirmation affects satisfaction and satisfaction is strong predictor of continuance intention in Information System context. Many empirical studies have confirmed the findings of Anol Bhattacharjee (2001) in difference context and the sample studies are given below:

Author(s)	Context
Lin, C. S., Wu, S., & Tsai, R. J. (2005)	Web portal
Lee, M. C. (2010)	e-learning
Lin, T. C., Wu, S., Hsu, J. S. C., & Chou, Y. C. (2012)	IPTV
Shunbo Yuan, Yong Liu, Ruihong Yao (2014)	mobile banking in China
Yonnim Lee a,1 , Ohbyung Kwon b,(2010)	Web based services
Vedadi, A., & Warkentin, M. (2016)	Mobile Banking Applications
Susanto, A., Chang, Y., & Ha, Y. (2016)	smartphone banking services
Yuan, S., Liu, Y., Yao, R., & Liu, J. (2016)	mobile banking in China

2.4 Continuance Usage

UTAUT 2 model stopped at studying the factors that facilitate technology adoption in either influencing behavioural intentions or the use behaviour. However, in the case of repeated use services like banking, banks would be interested in consumers taking to technology continuously rather than discontinuing it due to various reasons. This intention is studied using 2 major statements namely whether the consumer is willing to continuously use the technology in the future and 2 if the consumer would recommend the technology to other users. These two statements capture the continuance intention. These can be easily related to UTAUT as the same factors can have an influence on continuance usage.

Unlike the UTAUT model related papers, the papers that have tried to study continuance intention have used multiple dissimilar variables to relate as antecedents to continuance usage/ intention. These variables include variables like Information system quality.

Al-Magrabi et al (2011) in study based in Saudi Arabia on e-shopping found that perceived usefulness, enjoyment and social pressure were key factors that influenced continued usage of e-shopping. Aries (2016) in their smartphone banking services study noted that user satisfaction and self-efficacy determined continued usage of these services. In their study on IPTV usage in Korea, Geena Shin et.al (2013) observed that interactivity trust and emotion affected continuous use of IPTV. Mohammed et.al (2013) in a study based in Bangladesh on mobile payment system felt that customer satisfaction significantly influenced continuance usage intention. Ahmad and Alran (2016) in their review on e-banking continuance intention to use, viewed contentment and attitude of consumers as contributing to continuous usage. They felt that personality attributes moderated this effect on continuance intention.

Ra'ed Masa'deh et.al (2017) in a study in Jordan found that knowledge, system and service quality, along with perceived ease of use, user satisfaction influenced continuous intention to use a website. Ahmad (2017) in this doctoral thesis observed that attitude partial mediated the effect of perceived usefulness and perceived ease of use in continuance usage of e-banking in Malaysia. Alghamdi A et al (2018) noted that cognitive perceptions, customers' psychological traits are key determinants of Internet banking continuance to use. Ming-Chi Lee (2010) found that in Web-based learning program designed for continuing education. Satisfaction has the most significant effect on users' continuance intention. Walid (2016) observed that satisfaction has a positive impact on continuance intention, while emotional exhaustion has a negative effect.

Daniel Kofi Maduku (2016) noted in a study on South African retail banks, m-banking users' study that trust, self-efficacy, and quality of mobile network connectivity affected CIU. In a study done in China based on online social network users, researchers (Sun et.al 2014) observed that, tie strength, shared norms and trust influenced continuance intention. In a similar study (Wang et.al 2017) based on WeChat users, researchers concluded that users' perceived values (including social, information, emotional and hedonic value) and continuance intention were affected by social interaction ties and social and hedonic values influenced continuance intention

In study on mobile banking, Chen (2012) found that technology readiness and service quality affected continuance intention. Zhou et.al (2012) observed that affective and calculative commitment played a major role in predicting Continuance Intention in Social Virtual World Services. In a study among Malaysian consumers, Azyanee etal (2016) observed that personal innovativeness, expertise, and self-efficacy added to the Expectation Confirmation Model in predicting continuance intention in Mobile Commerce. Inma and Antoni (2016) in a study on continuance of e-learning concluded

that didactic resource quality and instructor attitude facilitate the user's intention. In a Pakistan based study, Samar and Mazuri (2019) noted that expectation confirmation theory ECT and self-determination theory SDT greatly influenced customers' continuance usage intention for internet banking. In a literature review on mobile banking adoption, Shaikh & Karjaluo (2015) found compatibility, perceived usefulness, and attitude are the most significant drivers of adoption. In another review on internet banking adoption, Luqman et.al (2016) opined that customers' personal, social, psychological, utilitarian and behavioural aspects are key to adoption

CHAPTER 3

METHODOLOGY

3.1. Introduction

This chapter includes research approach adopted for studying objectives, coverage and sampling plan (consists sampling methodology and sample size for public and private sector bank customer sample), data collection design – survey instrument development and method of data collection, and the statistical tools applied for hypotheses testing namely, Partial Least Square – Structural Equation Modelling (PLS-SEM), MANOVA and Discriminant Analysis.

3.2. Research Design

This study on the drivers of continuance intention usage of digital banking modes has used both exploratory research design and descriptive approach. The exploratory design techniques like survey of earlier studies and experience survey with stakeholders like bank experts and selected customers of public and private sector banks were applied to identify relevant factors other than UTAUT2 constructs to expand the model.

With the help of secondary sources, namely journals in management and other related disciplines from different publishers and databases like EBSCO, ABI-INFORM-ProQuest, etc., relevant literature was identified for the study. After survey instrument design, another exploratory technique – experience survey was conducted with bank experts comprising middle and senior level bank managers and bank customers to understand the relevance and importance of questions (scaled items) used for various constructs.

Descriptive research approach was adopted to find the answers for the study objectives and to test the models.

3.3. Coverage and Sampling Plan

3.3.1 Coverage of the Study

Customers of Public and Private sector banks in Tamil Nadu were part of the study. As of March 2019, the total number of functioning commercial bank branches in Tamil Nadu was 9938 (which excludes administrative offices – Source: RBI <https://dbie.rbi.org.in/DBIE/dbie.rbi?site=publications#!17>). The banks included were nationalized banks, other public sector banks, private sector banks and SBI & its associated banks in Tamil Nadu. The study population included bank account holders in the bank branches and those that used digital banking.

3.3.2 Sampling Plan

The following Sampling Process was adopted for the data collection:

Stage I: The average (of maximum and minimum) and standard deviation (SD) of the number of bank branches across districts in Tamil Nadu was first arrived at. Using average and SD, districts were segmented into four categories namely low (mean minus 2 sigma), medium, high and very high (mean plus 2 sigma) based on density of branches.

Stage II: By applying a simple random sampling process (lottery method), two districts from the first two segment of districts (low and medium) were selected.

Stage III: A sample of 80 customers from private (40) and public (40) sector banks were identified as the final sample from the selected 4 districts of the first two segments. A sample of 80 customers each from Kancheepuram and Coimbatore districts and 160 from Chennai district were chosen from the rest of the districts. The final sample of study participants were selected using non-probability sampling method.

After eliminating non-responses and unusable responses, 591 respondents data was used for the final analysis .

Table 3.1. Sampling Process

Districts	March 2019					Sampling Process				Final Respondent Numbers
	Rural	Semi-urban	Urban	Metropolitan	Total	Stage I	Stage II	Stage III		
Perambalur	38	31			69	Group 1	two districts based on random sampling procedure	District 1 = 80 sample	Public - 40	160
Ariyalur	45	27			72					
Dharmapuri	44	60			104					
Nilgiris	17	89			106					
Ramanathapuram	46	68			114			Private - 40		
Karur	44	94			138					
Thiruvarur	69	81			150					
Theni	23	129			152					
Pudukkottai	105	38	28		171			District 2 = 80 sample	Public - 40	
Nagapattinam	85	62	25		172					
Krishnagiri	62	72	51		185					
Tiruvannamalai	91	75	34		200				Private - 40	
Toothukudi	65	70	66		201					
Virudhunagar	58	118	25		201					
Sivaganga	95	83	31		209					
Namakkal	94	146			240	Group 2		Public - 40	160	

Cuddalore	100	94	50		244	any two districts based on random sampling procedure	District 2 = 80 sample	Private - 40		
Dindigul	89	129	46		264					
Villupuram	133	131			264					
Kanyakumari	85	127	61		273					
Thanjavur	111	84	104		299					
Erode	97	169	82		348					
Tirunelvali	90	158	101		349			District 2 = 80 sample		Public – 40
Tiruppur	92	159	105		356					
Salem	79	143	149		371					
Vellore	129	178	86		393					Private – 40
Tiruchirapalli	102	104	192		398					
Thiruvallur	85	188	40	131	444					
Madurai	87	96		271	454			Group 3		two districts
Kancheepuram	154	337	155	109	755					
Coimbatore	136	242	5	394	777	Group 4		160 Sample	Public - 80 + Private 80	160
Chennai				1465	1465					
Total	2550	3582	1436	2370	9938			Total Sample	640	

3.4 Data Source

Primary data from the survey was the source data for the study. These customers were account holders in public and private sector banks in Tamil Nadu. Data was collected through a structured questionnaire. The survey questionnaire contained items adapted from existing instruments in the form of statements for the seven constructs of UTAUT2 namely performance expectancy, effort expectancy, facilitating condition, price value, hedonic motivation, social influence and habit and the other constructs namely financial cost, risk factors, confirmation of expectation, overall experience and continuance intention usage.

3.4.1 Instrument Design

The instrument for data collection was developed using existing scales that measured the following dimensions – effort expectancy, facilitation conditions, performance expectancy, social influence, habit, price, and hedonic motivation that affect continuance intention. All the UTAUT2 seven dimensions' scales were modified from the scales used in the study of Venkatesh et al (2012). The financial cost related scales were adopted from the study of Poon WC (2008) and scales on perceived risk were adopted from Joaquin Aldas-Manzano et al (2009) and the expectation on confirmation, experience and continuance intention scales were used from the study by Anol Bhattacharjee (2001). In addition, respondents' demographic details were included in the survey instrument.

3.4.2 Pilot Study

Pilot study is a prerequisite in any survey, as it helps remove unnecessary questions. The pilot study was conducted with 50 customers of banks, and modifications were made accordingly. Further, reliability analysis was also done, and results are as follows:

Table 3.2: Reliability Value for the constructs based on the Pilot Study

Constructs	Alpha Values
Performance expectancy	0.891
Effort expectancy	0.794
Facilitating condition	0.929
Price value	0.769
Hedonic motivation	0.712
Social influence	0.947
Habit	0.852
Financial cost	0.793
Risk factors	0.519
confirmation of expectation	0.720
overall experience	0.826
Continuance Intention Usage	0.588

3.5 Data Analysis

We used Partial Least Square – Structural Equation Modeling (PLS-SEM), MANOVA and discriminant analysis as the major tools to analyse the data to draw inferences and conclusions.

CHAPTER 4

DATA ANALYSIS AND RESULTS

4.1 Introduction

Data was collected using both a paper-based survey and a Google survey. Data Analysis using the data collected and its interpretation is presented in this chapter. The data collected included demographic details, broad banking habits, internet usage, digital banking modes, UTAUT2 constructs, financial cost, risk factors (security, privacy, social and time loss), confirmation of expectation, overall experience and continuance intention usage. The respondent could provide responses to demographic details from the pre-set options available for gender, age, marital status, education and monthly income. Data to be used for the validating the models was collected using a 5-point Likert Scale. These included responses for UTAUT2 factors, financial cost, risk factors, confirmation of expectation, overall experience and continuance intention usage.

Demographic data and basic banking related data was analyzed using descriptive statistics like frequency, mean and standard deviation. The models were tested using Partial Least Square – Structural Equation Modelling (PLS-SEM). In addition, MANOVA and Discriminant Analysis was also undertaken.

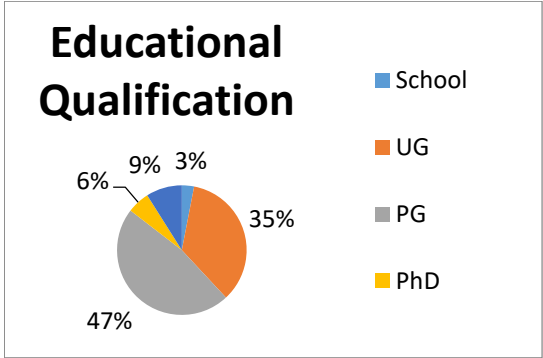
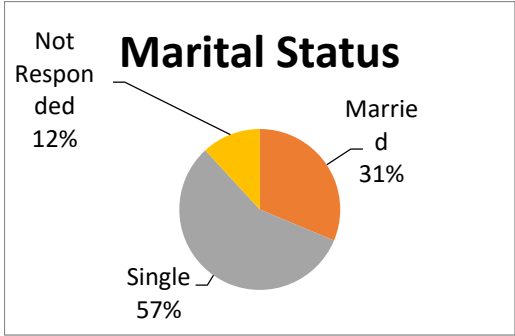
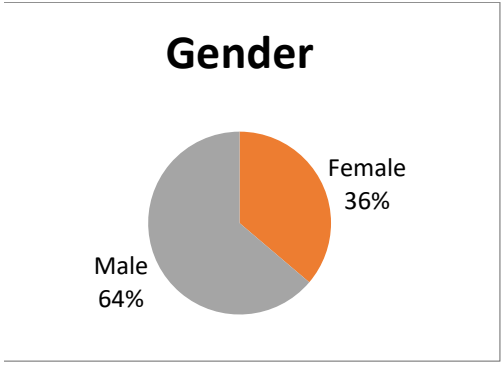
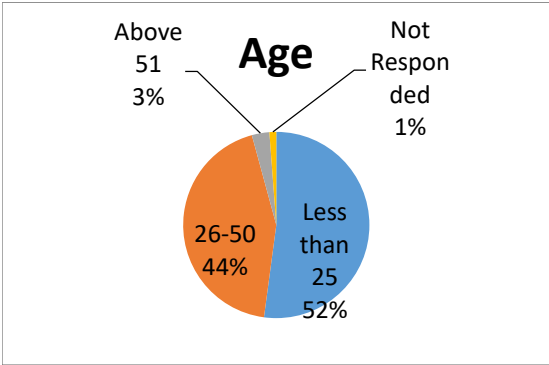
4.2 Demographic details and broad banking habits of Combined Bank Samples

Table 4.1: Demographic details

Age	Number of Respondents	Percentage
Less than 25	308	52.12
26-50	258	43.65
Above 51	18	3.05
Not Responded	7.0	1.18
Gender		
Female	214	36.21
Male	377	63.79
Marital Status		
Married	185	31.3
Single	336	56.9
Not Responded	70	11.8
Educational Qualification		
School	18	3.05
UG	207	35.03
PG	280	47.38
PhD	33	5.58
Not Responded	53	8.97
Monthly Income		
Less than 50000	311	52.62
50001-100000	17	2.88
100001-150000	47	7.95
Greater than Rs.150001	33	5.58
Not Responded	183	30.96

The Table 4.1 provides the demographic details of the combined sample respondents for this study. It is noted that 52.12 per cent of the respondents belong to the age group of less than 25 years of age followed by those from 25-50 age bracket with 43.65 per cent. It shows that majority of the respondents are within the 50 years age group. Majority of

the respondents were male (63.79 per cent) while female respondents accounted for 36.21 per cent. On marital status, 56.9 per cent of the respondents were single. In terms of educational qualifications, 47.38 per cent of the respondents were post-graduates and the minimum qualification was schooling. Nonetheless, more than 80% of the respondents were either undergraduates or post graduates. While the reported monthly income for more than 50% of the respondents was less than Rs 50000, a significant number did not want to reveal their income.



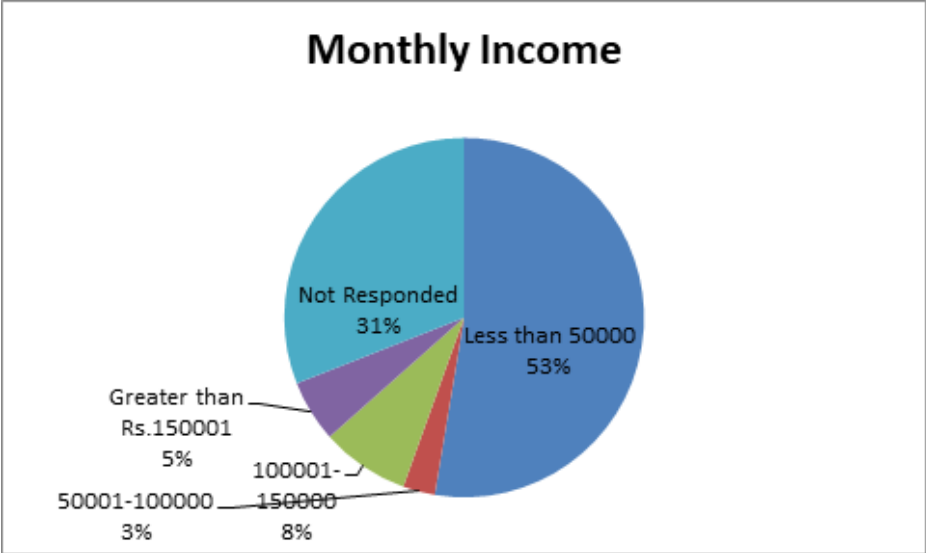


Fig. 4.1: Demographic details

Table 4.2: Relationship with bank and Internet use per day

Relationship with bank (in Years)	Number of respondents	Percentage
0 - 5 Years	279.0	47.21
6 - 10 Years	207.0	35.03
11-15 Years	59.0	9.98
16-20 Years	34.0	5.75
21 Years & Above	12	2.03
Internet use per day (in Hours)		
1 - 4 Hours	280	47.38
5 - 9 Hours	176	29.78
Above 10 Hours	135	22.84

Table 4.3: Familiarity with Mobiles and PC/Laptop, Expertise and Frequency of digital transaction

	Number of respondents	Percentage
Familiarity		
Familiar	416	70.4
Not Familiar	34	5.8
Somewhat Familiar	141	23.9
Expertise		
Basic Knowledge	224	37.9
Expert	253	42.8
Novice	114	19.3
Frequency of Monthly Digital Banking Usage		
1 – 10	373	63.11
11 – 20	159	26.90
21 and above	59	9.99

This study is about continuance usage intention of digital banking. In accordance with the focus of the study, the endeavor was to collect some broad banking habits of the respondents and Table 4.2 provides details on banking habits of the respondents. 47.21 per cent of combined sample of the study had relationship with banks for less than 5 years, followed by 35.03 per cent of sample between 6 and 10 years. The minimum percentage noted was those with 21 and above years of relationship with a bank. Most

bank consumers in this study sample had banking relationship for up to 10 years. Among them a majority had up to 5 years of banking relationship followed by those in the range of 6-10 years.

Digital banking requires internet usage in most cases. Therefore, an understanding of internet usage habit becomes important. 47.38 per cent of combined bank respondents used internet between 1 and 4 hours per day and 22.84 per cent used the internet with above 10 hours per day. Thus, a majority of the respondents used up to 9 hours of internet per day, and most of them were familiar with various computing devices like mobile, PC, laptop and desk top. Less than 20% of the study sample felt that they were novices in handling computing devices compared to more than 80% reporting that they either had basic knowledge or were experts. A majority of the respondents for this study used digital banking up to 10 times in a month for performing different transactions

transactions.

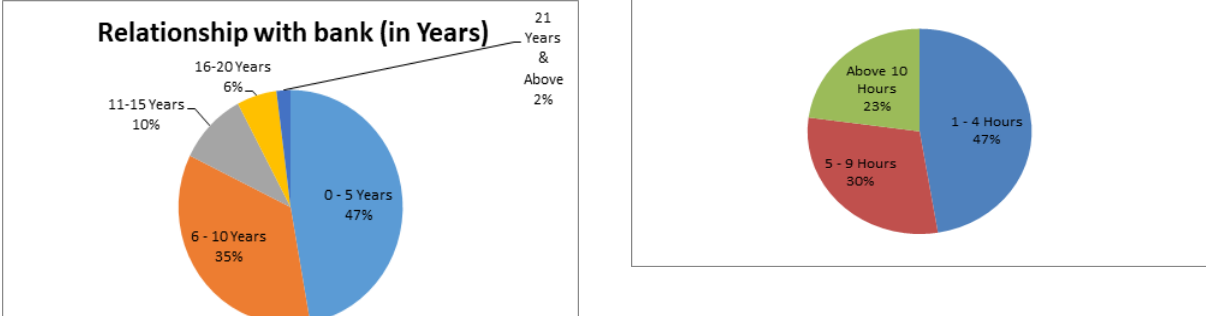


Fig. 4.2: Relationship with bank and Internet use per day

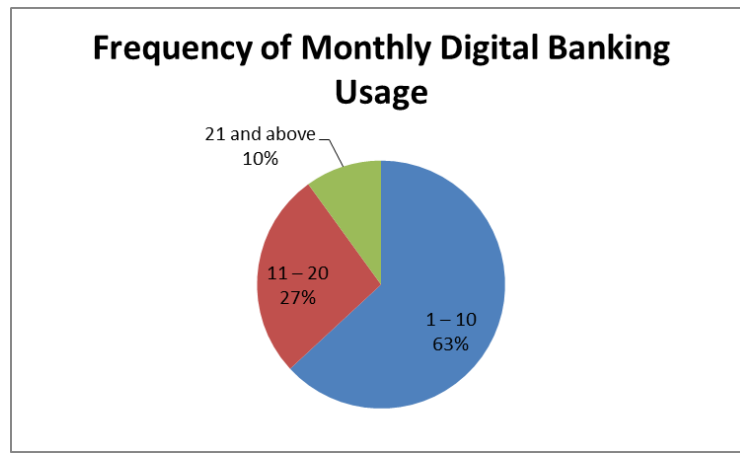
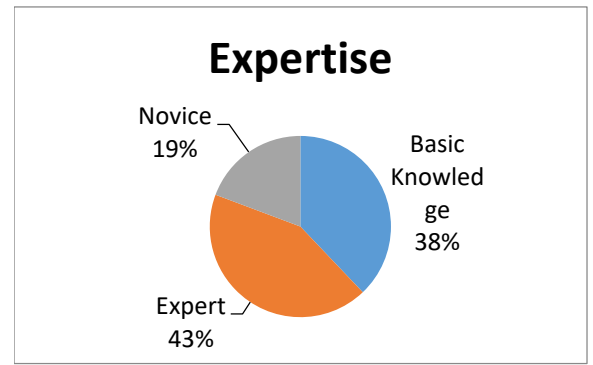
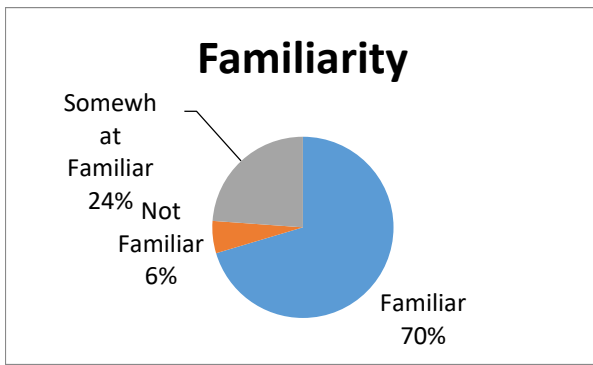


Fig. 4.3: Familiarity with Mobiles and PC/Laptop, Expertise and Frequency of digital transaction

Table 4.4: Transaction type, Year and Opinion on Usage level

Transaction Type	Number of Respondents	Percentage		
Internet Banking	587	99.32		
Cards	557	94.25		
Mobile Payments	411	69.54		
Mobile Wallets	226	38.24		
Aadhar Based (Micro ATMs)	45	7.61		
Transaction Type / Year	2005 & Before	2006-2010	2011-2015	2016-2019
Internet Banking	8	35	135	209
Cards	28	66	203	260
Mobile Payments	NA	4	60	347
Mobile Wallets	NA	2	38	186
Aadhar Based (Micro ATMs)	NA	NA	6	39
Increase in Transaction Type Usage	Yes	No		
Internet Banking	364	127		
Cards	436	155		
Mobile Payments	412	179		
Mobile Wallets	260	331		
Aadhar Based (Micro ATMs)	76	515		

Digital banking follows different modes. These modes have largely replaced customers' visit to branches for routine transactions and have increased convenience to them too.

The details on the transaction type, year and respondents opinion on usage level in given in Table 4.3. Out of 591 respondents, 99.32 per cent of respondents use internet banking, 94.25 per cent of respondents use cards, 69.54 per cent of respondents use mobile payments and a minimum of 7.61 per cent use Aadhar based ATM facilities. Thus, among the major modes of digital banking, internet banking, use of different cards like credit

and debit cards and mobile based banking and payments through mobile applications are widely used.

It is observed from transaction type (year-wise) that in the last 3 years, mobile payments and use of mobile applications in digital banking have increased.

Table 4.5: Reasons for lower usage of digital banking modes

Reasons for less usage	Number of respondents
Technology related issues	28
Lack of Information	25
Absence of Need	20
Security Threat	17
Mobile Payment Easy	16
Bad Service	12
Other reasons	12

Majority of the respondents for the study seem comfortable with the various digital banking modes. However, among the respondents who expressed issues that did not favour usage of digital banking, technological glitches, lack of information or awareness and an absence of need for the convenience of digital banking were the common reasons.

Table 4.6: Ease of doing and number of monthly digital transactions

Ease of doing digital transactions	Number of Respondents	Percentage
Not Responded	161	27.24
Very Easy	254	42.98
Moderately easy	164	27.75
Very Difficult	12	2.03
Total	591	100.00
Monthly Digital transactions	Number of Respondents	Percentage
None	277	46.87
Less than 2	56	9.48
More than 2	258	43.65
Total	591	100.00

The table above shows that the majority of the respondents felt that doing digital transactions was easy (very easy or moderately easy). Just above 40% of them expressed that they did more than 2 transactions a month.

4.3 Level of Agreement and Descriptive Statistics – Combined and bank-wise customer sample

Table 4.7: Customers Opinion on UTAUT2 Indicators – Combined Samples (N=591)

UTAUT2 Indicators	SDA	DA	N	A	SA	Mean	SD
Performance Expectancy							
I find digital banking useful in my daily life	9	13	44	196	329	4.404	0.836
Using digital banking helps me accomplish banking transactions faster than traditional banking.	3	10	65	238	275	4.317	0.770
Using digital banking increases my productivity.	7	18	125	225	216	4.060	0.896
Effort Expectancy							
Learning how to use digital banking is easy for me.	7	27	82	253	222	4.115	0.890
Digital banking processes are clear and logical.	10	28	138	250	165	3.896	0.920
I find digital banking easy to use.	7	25	90	245	224	4.111	0.893
It is easy for me to become skilful at using digital banking.	6	19	117	278	171	3.996	0.842
Social Influence							
People who are important to me think that I should use digital banking.	9	40	139	254	149	3.829	0.932
People who influence my behavior think that I should use digital banking.	12	51	157	244	127	3.704	0.962

People whose opinions that I value prefer that I use digital banking.	10	36	141	263	141	3.819	0.918
Facilitating Condition							
I have the resources necessary to use digital banking.	4	27	102	273	185	4.030	0.854
I have the knowledge necessary to use digital banking.	5	31	103	244	208	4.049	0.901
Digital banking is compatible with other technologies I use.	10	28	131	255	167	3.912	0.916
I can get help from others when I have difficulties using digital banking.	11	31	155	245	149	3.821	0.929
Price Value							
Digital banking is reasonably priced.	13	48	178	218	134	3.686	0.978
Digital banking is a good value for the money.	5	31	148	257	150	3.868	0.880
At the current price, digital banking provides a good value.	8	39	132	255	157	3.862	0.926
Hedonic Motivation							
Using digital banking is fun.	25	63	177	203	123	3.550	1.060
Using digital banking is enjoyable.	21	48	143	238	141	3.715	1.024
Using digital banking is very entertaining.	32	61	194	196	108	3.463	1.066
Habit							
The use of digital banking has become a habit for me.	24	61	146	209	151	3.665	1.084
I am addicted to using digital banking	57	98	180	129	127	3.302	1.243
I must use digital banking.	31	44	157	207	152	3.672	1.092

SD: Standard Deviation

The combined sample of customers' of public and private sector banks and level of agreement on the UTAUT2 construct-wise indicators is presented in Table 4.7. On Performance Expectancy, more than 400 customers agreed (including strongly agreed) to three indicators which measure performance expectancy. The mean score of these three statements is above 4 meaning that customers have agreed to these statements. Around 20 per cent of customers have given neutral opinion on the statement – “Using digital banking increases my productivity”.

Four items are used to measure the bank customers' level of agreement on the Effort Expectancy related to the digital banking. It is noted that more than 400 customer have agreed to the four statements. The mean scores range from 3.896 to 4.115 that suggests that customers have agreed with effort expectancy measures. 138 customers have given neutral opinion on the statement – “Digital banking processes are clear and logical”.

Social Influence is measured with three items. Out of 591 customers, around one-fourth of combined bank customer sample gave neutral opinion on the items of social influence. However, the mean score of these three items is around 4, which indicates that the customers have agreed to the statements measuring social influence.

Four items are used to study the customers' level of agreement on the Facilitating Condition for using digital banking platforms. Around 400 combined bank sample customers have agreed to the items which measure the facilitating condition for the use of digital banking platforms. Seventeen to twenty six per cent of customers have expressed neutral view on the facilitating condition. Nevertheless, the mean score of four of these items signifies that the customers have agreed to the statements.

The Price Value construct of UTAUT2 is measured with three items and between 22 and 30 per cent of customers have had neutral agreement on the items of price value. The

mean scores of these items is also around 4 and therefore supports that most customers have agreed to the price value items in the scale.

It is noted that between 300 and 400 customers have agreed to three items measuring Hedonic Motivation of customers. Around one-fourth of the sample customers have had neutral agreement on the hedonic motivation items.

Habit is measured using three items in the scale. It is noted that between 250 and 260 respondents have agreed to the items and around one-fourth of the responses have given “neutral” on the hedonic motivation items. This is also evident from the mean score of the items from 3.30 to 3.67.

Table 4.7a provides the details on the public and private sector bank-wise customers’ level of agreement in terms of mean score and standard deviation on the UTAUT2 constructs. It is noted that the mean score of the items related to Performance Expectancy of private sector banks’ customers are marginally higher than their public sector counterparts. Similar situation is witnessed with the mean scores of Effort Expectancy and Facilitating Conditions.

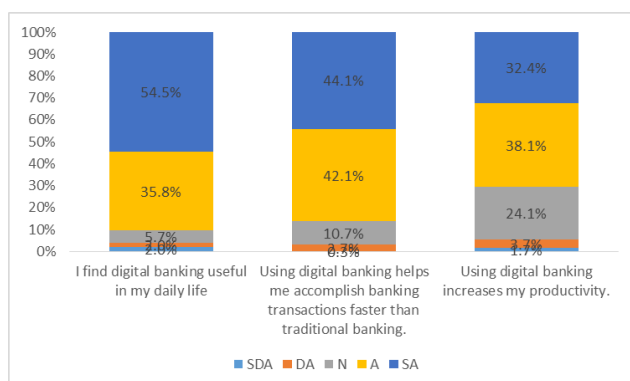
With respect to Price Value, Hedonic Motivation and Habit, the mean score of the items measuring the respective constructs exhibit mixed results on the level of agreement.

Table 4.7a: Descriptive Statistics on Customers Opinion on UTAUT2 Indicators – Bank-wise

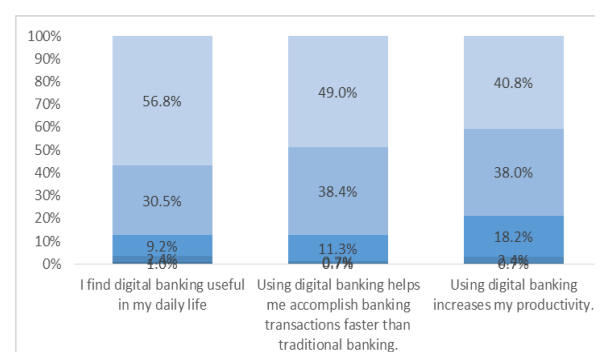
UTAUT2 Indicators	Public Sector Banks (N=299)		Private Sector Banks (N=292)	
	Mean	SD	Mean	SD
I find digital banking useful in my daily life	4.40	0.84	4.40	0.83
Using digital banking helps me accomplish banking transactions faster than traditional banking.	4.28	0.78	4.35	0.76
Using digital banking increases my productivity.	3.96	0.93	4.16	0.85
Learning how to use digital banking is easy for me.	4.09	0.93	4.14	0.85
Digital banking processes are clear and logical.	3.85	0.96	3.95	0.87
I find digital banking easy to use.	4.10	0.91	4.12	0.88
It is easy for me to become skilful at using digital banking.	3.95	0.87	4.04	0.82
People who are important to me think that I should use digital banking.	3.93	0.86	3.72	0.99
People who influence my behavior think that I should use digital banking.	3.71	0.95	3.70	0.98
People whose opinions that I value prefer that I use digital banking.	3.89	0.89	3.75	0.94
I have the resources necessary to use digital banking.	4.00	0.88	4.07	0.82
I have the knowledge necessary to use digital banking.	4.03	0.91	4.07	0.89
Digital banking is compatible with other technologies I use.	3.88	0.94	3.94	0.90

I can get help from others when I have difficulties using digital banking.	3.79	0.96	3.85	0.89
Digital banking is reasonably priced.	3.68	0.98	3.69	0.98
Digital banking is a good value for the money.	3.90	0.88	3.83	0.89
At the current price, digital banking provides a good value.	3.84	0.93	3.89	0.92
Using digital banking is fun.	3.51	1.07	3.59	1.05
Using digital banking is enjoyable.	3.68	1.05	3.75	0.99
Using digital banking is very entertaining.	3.44	1.09	3.49	1.05
The use of digital banking has become a habit for me.	3.65	1.06	3.68	1.11
I am addicted to using digital banking.	3.34	1.21	3.27	1.28
I must use digital banking.	3.68	1.06	3.66	1.12

Performance Expectancy - PuSB

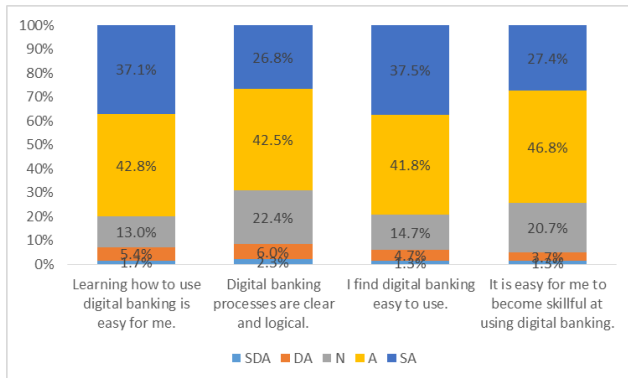


Performance Expectancy - PrSB

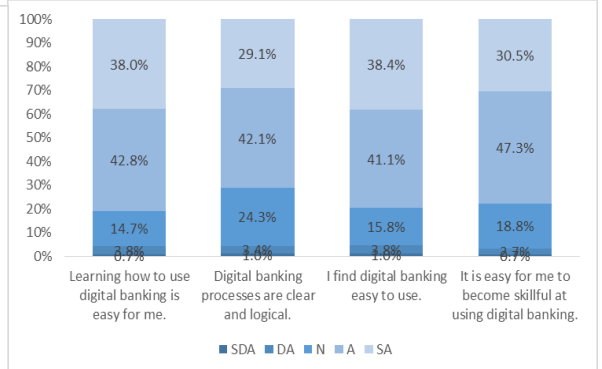


Bank-wise customers' level of agreement on the Performance Expectancy reveals that a relatively higher percentage of the private sector bank customers have strongly agreed compared to that of the public sector customers on the three items which measure performance expectancy.

Effort Expectancy - PuSB

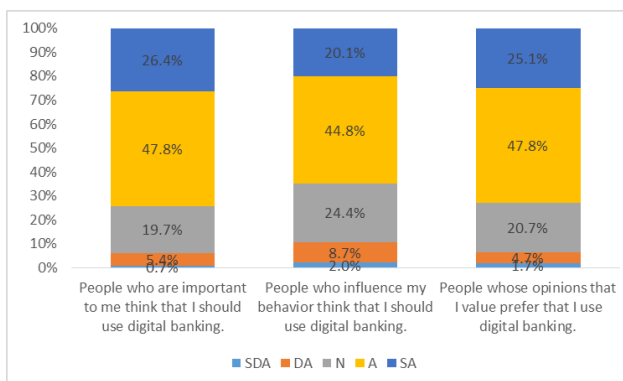


Effort Expectancy - PrSB

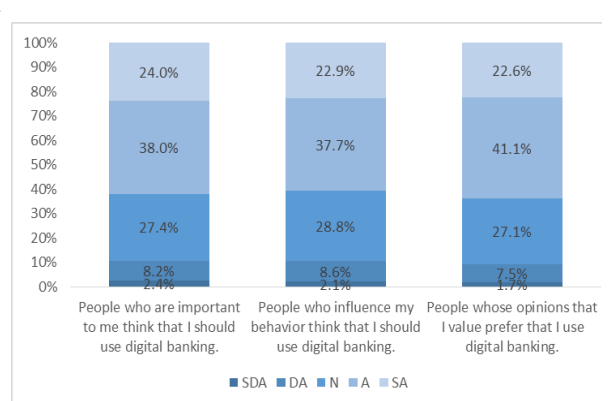


The comparison between public and private sector bank customer samples in terms of level of agreement on Effort Expectancy items indicates that greater percentage of customers of private sector banks have strongly agreed compared to their counterparts in public sector banks. No major difference is seen with other level of agreement scale points – agreed, neutral, etc.

Social Influence - PuSB

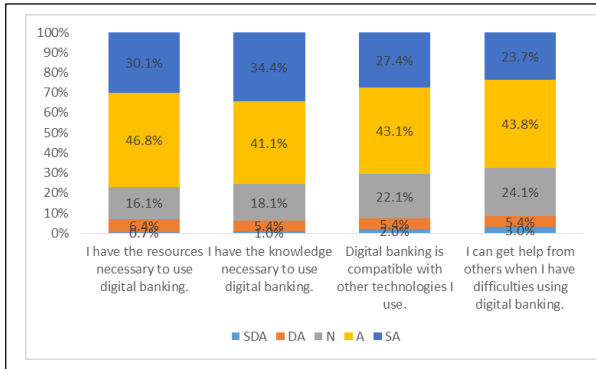


Social Influence - PrSB

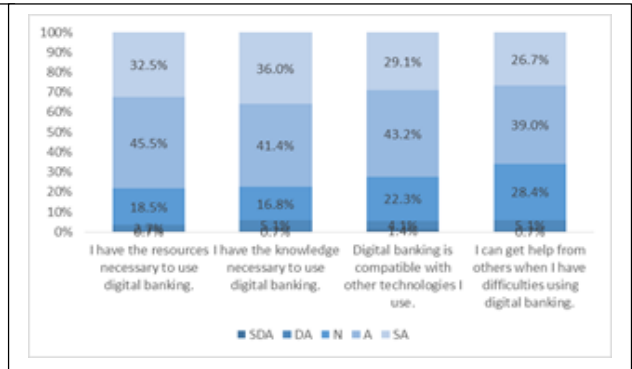


On the statements measuring Social Influence, (three items) the percentage of public sector bank customers that have agreed to the statements is relatively higher than the customers of private sector banks. A mixed scenario is witnessed with other scaled points of agreement level.

Facilitating Condition - PuSB



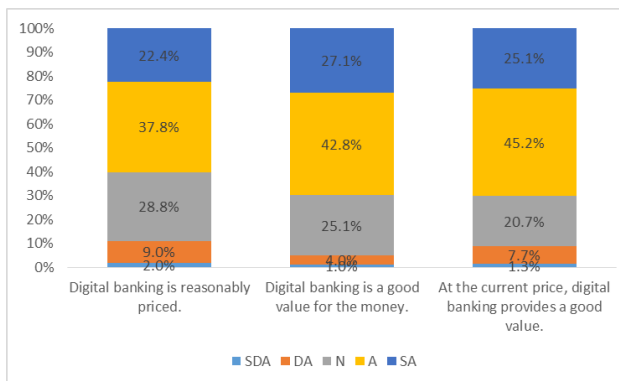
Facilitating Condition - PrSB



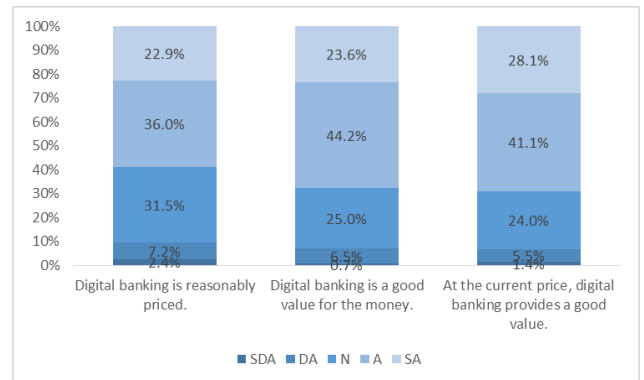
The percentage of strongly agreed customers (for the factor Facilitating Condition) is higher among private sector bank samples compared to that of public sector bank sample and not much difference was noticed with respect to those who only agreed. .

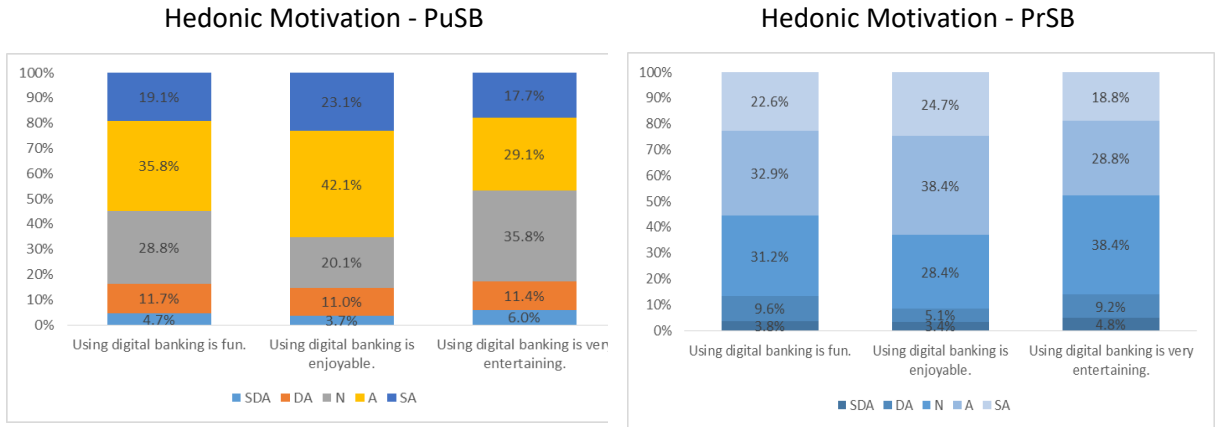
On Price Value, not much difference in the level of agreement is witnessed between two groups of bank respondents.

Price Value - PuSB



Price Value - PrSB





On the Hedonic Motivation construct, a relatively higher percentage of public sector customers have expressed agreement compared to the private sector bank customers. With the measures of Habit constructs, a moderate percentage difference is noted between public and private sector bank customers' response. On the response on 'agreed', the percentage is higher with public sector bank customer than their counter part.

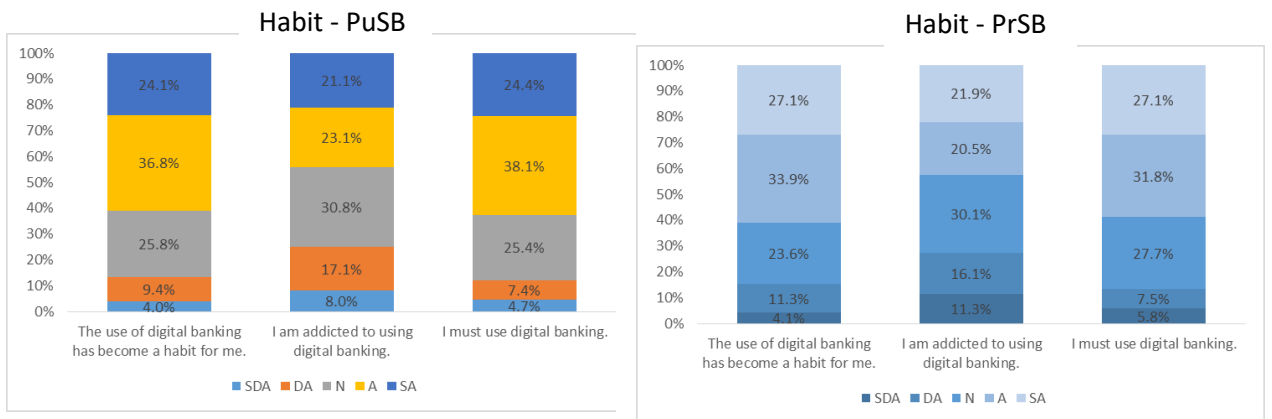


Fig 4.4: Bank-wise customer level of agreement on UTAUT construct indicators

Table 4.8: Customers Opinion on Financial Cost Indicators – Combined Samples

Financial Cost Indicators	SD A	DA	N	A	SA	Mea n	SD
Prices of devices are reasonable and affordable for using digital banking	32	54	153	207	145	3.631	1.108
Fee of internet connection is affordable to use digital banking	22	71	158	232	108	3.550	1.035
E-banks charge lower transaction fees compared to traditional banking modes	32	78	215	162	104	3.403	1.083
Service fees is acceptable	54	91	285	174	87	3.311	1.654
Annual subscription for digital banking services is affordable	47	85	222	173	86	3.292	1.121
I won't terminate services even if bank charges high fee	84	116	170	151	70	3.012	1.223
I am able to save time by using digital banking services	23	42	128	217	181	3.825	1.063
Continue using although need to pay high fees for digital banking	57	96	217	143	78	3.156	1.139

Financial Cost that drives the continuance intention use of digital banking platform is measured using eight items (Table 4.8). It is noted that 20 to 48 per cent of customers of combined bank sample have a given neutral response on the financial cost indicators related to digital banking. Among 591 customers, 33.8 per cent of customers have disagreed (plus strongly disagreed) to the statement – ‘I won't terminate services even if bank charges high fee’, and its mean score is around 3, supporting disagreement.

Around 25 per cent of combined sample customers have disagreed with ‘Continue using although need to pay high fees for digital banking’ and the mean score is 3.156, which implies that the customers are concerned about the fee charged by banks on the digital banking platforms’ products and services.

From the mean scores, it can be found that the customers have agreed to the statements (a) Prices of devices are reasonable and affordable for using digital banking (mean=3.631); (b) Fee of internet connection is affordable to use digital banking (mean=3.55) and (c) I am able to save time by using digital banking services (mean=3.825).

The combined sample bank customers have had a neutral response to other items measuring financial cost.

Table 8a: Descriptive Statistics on Customers Opinion on Financial Cost Indicators – Bank-wise

Financial Cost Indicators	Public Sector Banks		Private Sector Banks	
	Mean	Standard Deviation	Mean	Standard Deviation
Prices of devices are reasonable and affordable for using digital banking	3.711	1.106	3.548	1.105
Fee of internet connection is affordable to use digital banking	3.554	1.015	3.546	1.057
E-banks charge lower transaction fees compared to traditional banking modes	3.404	1.084	3.401	1.084
Service fees is acceptable	3.257	1.165	3.367	2.038
Annual subscription for digital banking services is affordable	3.295	1.175	3.289	1.065
I won't terminate services even if bank charges high fee	3.031	1.219	2.994	1.230
I am able to save time by using digital banking services	3.806	1.015	3.846	1.111
Continue using although need to pay high fees for digital banking	3.150	1.162	3.162	1.116

The bank-wise sample analysis on the construct Financial Cost (Table 4.8a) indicates that the public sector bank customers' mean score is relatively higher with (a) reasonable price of devices and (b) affordable internet fee compared to that of their counterparts in the private sector banks. A very marginal percentage difference exists between public and private sector respondents with other indicators except service fee. In terms of

service, the mean score of public sector bank customers is marginally higher than the mean score of private sector bank customers.

It is evident from the comparison between the sample customers of public and private sector banks that higher percentage of customers of public sector banks agree with reasonable price of devices and affordable internet fee, acceptable service fee, and affordable annual subscription fee. It is also noted that there is no difference in the mean score between private and public sector bank customers on lower transaction fees, saving time and continue using although need to pay high fee.

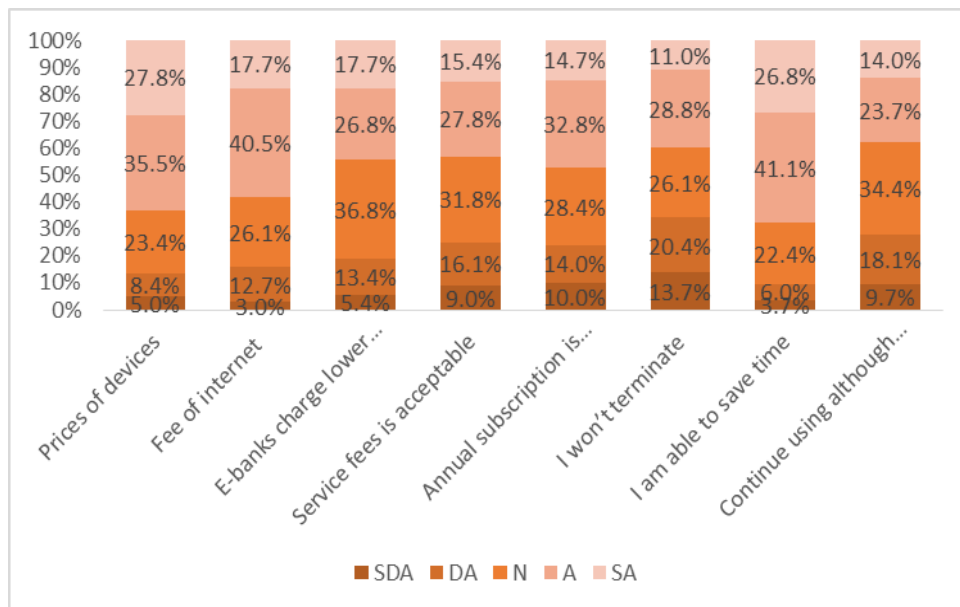


Fig.4.5: Financial Cost Indicators – Public Sector Bank Customer Sample



Fig.4.5a:Financial Cost Indicators – Private Sector Bank Customer Sample

Table 4.9: Customers Opinion on Risk factor Indicators – Combined Samples

Risk factor Indicators	SDA	DA	N	A	SA	Mean	Standard Deviation
I worry about logging into digital banking (Security Risk1)	35	83	237	184	135	3.490	1.156
When I send data using digital banking, I am worried that they will be intercepted and modified by unauthorized third parties like hackers (Security Risk2)	14	53	200	270	107	3.670	0.948
I think digital banking could provide my personal information to other companies without my consent (Privacy Risk1)	22	64	228	236	105	3.555	1.017
Digital banking increases the likelihood of receiving spam (Privacy Risk2)	23	64	236	227	105	3.534	1.023
I think digital banking endangers my privacy by using my personal information without my permission (Privacy Risk3)	29	64	219	232	111	3.544	1.062
I think using digital banking services worsens the image my friends and relations have of me (Social Risk1)	67	111	322	139	63	3.035	1.142
Some people whose opinion I value think I am not acting correctly when I use digital banking services instead of brick and mortar branches (Social Risk2)	44	96	318	154	75	3.213	1.090
My friends and relations think I am being imprudent when I use digital banking services instead of brick and mortar branches (Social Risk3)	46	118	340	147	58	3.094	1.070
When I use digital banking I feel I waste a lot of time choosing the banking operation I need (Time Loss1)	76	130	312	146	57	2.961	1.170
When I use digital banking I am concerned about having to wait too long for the banking operation to take effect, having to waste time on additional procedures, etc. (Time Loss2)	56	102	298	164	73	3.169	1.139
When I use digital banking I am concerned about wasting too much time performing banking operations (Time Loss3)	66	121	314	138	73	3.055	1.174

The level of agreement of customers of combined bank sample on the risk is given in Table 4.9. Risk was measured with four constructs namely, security risk, privacy risk, social risk, and time loss. More than 50 per cent of customers of combined sample have

agreed with the items related to security risk, and the mean score of around 4 supports the percentage. With respect to privacy risk, more than 55 per cent of customers agreed to the privacy and security risk and the mean score above 3.5 clearly backing the percentage. Majority of the respondents have expressed neutral response to social risk and time loss.

Table 4.9a: Customers Opinion on Risk factor Indicators – Bank-wise

Risk factor Indicators	Public Sector Banks		Private Sector Banks	
	Mean	Standard Deviation	Mean	Standard Deviation
I worry about logging into digital banking (Security Risk1)	3.513	1.166	3.467	1.147
When I send data using digital banking, I am worried that they will be intercepted and modified by unauthorized third parties like hackers (Security Risk2)	3.667	0.915	3.672	0.982
I think digital banking could provide my personal information to other companies without my consent (Privacy Risk1)	3.561	1.024	3.549	1.012
Digital banking increases the likelihood of receiving spam (Privacy Risk2)	3.539	1.013	3.528	1.033
I think digital banking endangers my privacy by using my personal information without my permission (Privacy Risk3)	3.529	1.073	3.559	1.052
I think using digital banking services worsens the image my friends and relations have of me (Social Risk1)	3.132	1.132	2.936	1.145
Some people whose opinion I value think I am not acting correctly when I use	3.215	1.062	3.210	1.119

digital banking services instead of brick and mortar branches (Social Risk2)				
My friends and relations think I am being imprudent when I use digital banking services instead of brick and mortar branches (Social Risk3)	3.115	1.076	3.072	1.066
When I use digital banking I feel I waste a lot of time choosing the banking operation I need (Time Loss1)	2.998	1.182	2.923	1.158
When I use digital banking I am concerned about having to wait too long for the banking operation to take effect, having to waste time on additional procedures, etc. (Time Loss2)	3.212	1.156	3.124	1.123
When I use digital banking I am concerned about wasting too much time performing banking operations (Time Loss3)	3.150	1.189	2.957	1.152

The level of agreement on the security risk indicators between public and private sector bank customer reveals that percentage “Agreed” is relatively higher with public sector bank customer response compared to private sector bank customers. However, the mean score is close to four (Table 4.9a), signifying that there is no difference between two bank customer samples.

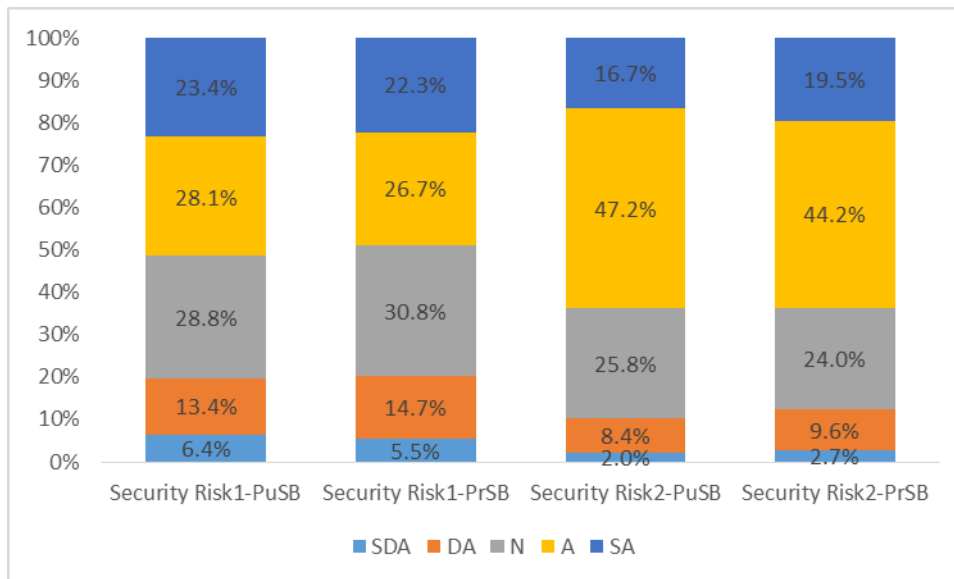


Fig.4.6: Security Risk–Bank-wise Customer Sample

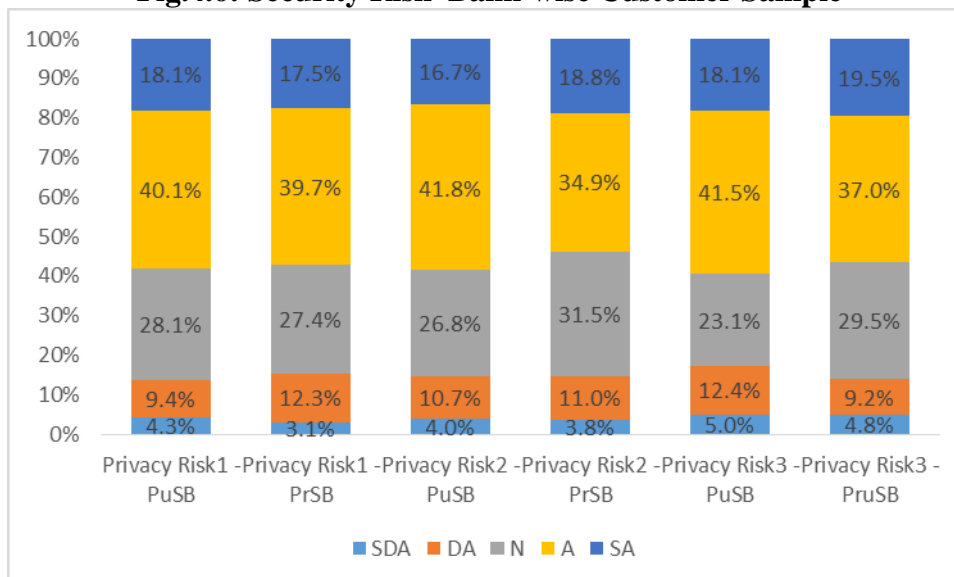


Fig.4.7: Privacy Risk–Bank-wise Customer Sample

The level of agreement on the Privacy Risk revolves around 40 per cent with private and public sector banks customers having agreed to the statement – ‘I think digital banking could provide my personal information to other companies without my consent’. That is, there is no difference between the two sample customers.

On the other two items of privacy risk, the percentage of public sector bank customers on ‘agreed’ response is marginally higher than that of private sector bank customers - Digital banking increases the likelihood of receiving spam (41.8 per cent / 34.9 per cent)

and “I think digital banking endangers my privacy by using my personal information without my permission” (41.5 per cent / 37 per cent).

The third dimension of risk factor is social risk, which is measured using three items. Relatively higher percentage of public sector bank customers have agreed to the statements compared to their counterparts, namely private sector bank customers. Neutral responses also show similar difference between two sets of sample customers.

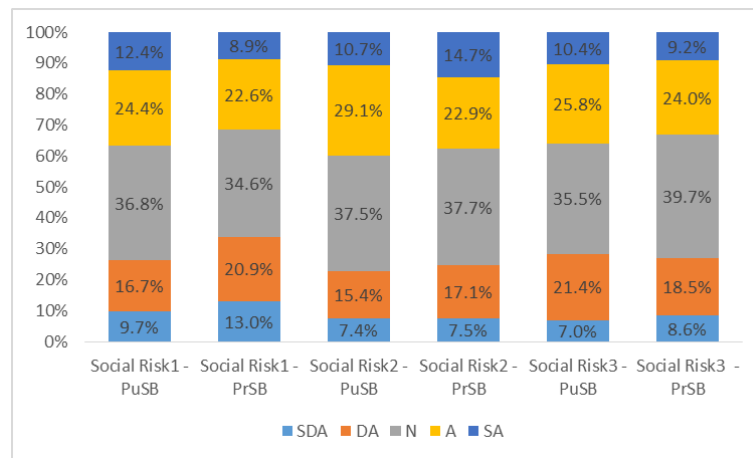


Fig.4.8: Social Risk–Bank-wise Customer Sample

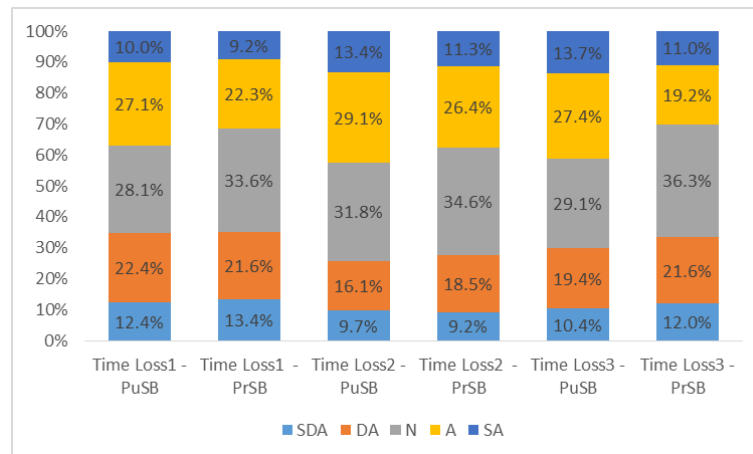


Fig.4.9: Risk related to Time Loss–Bank-wise Customer Sample

The fourth dimension of risk factor is time loss, and this was measured with three items. Relatively higher percentage of PSB customers have agreed that they waste a lot of time,

wait too long for the banking operations and waste too much time performing banking operations, compared to private sector bank customers.

Table 4.10: Customers Opinion on Confirmation on Expectation – Combined Sample

Confirmation on Expectation Indicators	SDA	DA	N	A	SA	Mean	Standard Deviation
My experience with using digital banking was better than what I expected.	4	8	83	272	224	4.199	0.773
The service level provided by digital banking was better than what I expected.	4	17	133	321	116	3.889	0.766
Overall, most of my expectations from using digital banking were confirmed.	4	26	133	267	161	3.937	0.855

The level of agreement on the indicators related to confirmation on expectation for combined bank sample is presented in Table 4.10. The confirmation on expectation has been measured with three items. More than 73 per cent of customers have agreed (and strongly agreed) with three items of confirmation on expectation.

Table 10a: Customers Opinion on Confirmation on Expectation – Bank-wise

Confirmation on Expectation Indicators	Public Sector Bank		Private Sector Bank	
	Mean	Standard Deviation	Mean	Standard Deviation
My experience with using digital banking was better than what I expected.	4.221	0.779	4.176	0.767
The service level provided by digital banking was better than what I expected.	3.857	0.813	3.922	0.714
Overall, most of my expectations from using digital banking were confirmed.	3.943	0.877	3.930	0.834

The bank-wise mean score on the items measuring Confirmation on Expectation is given in Table 4.10a. It is found that there is no difference between the two sample customers on the items of confirmation on expectation.

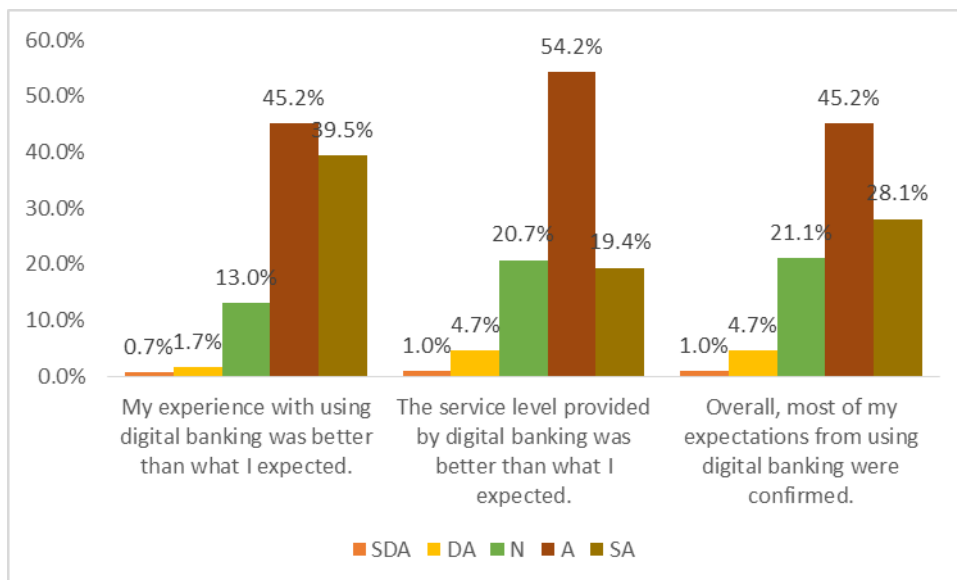


Fig 4.10: Confirmation on Expectation – Public Sector Bank Sample

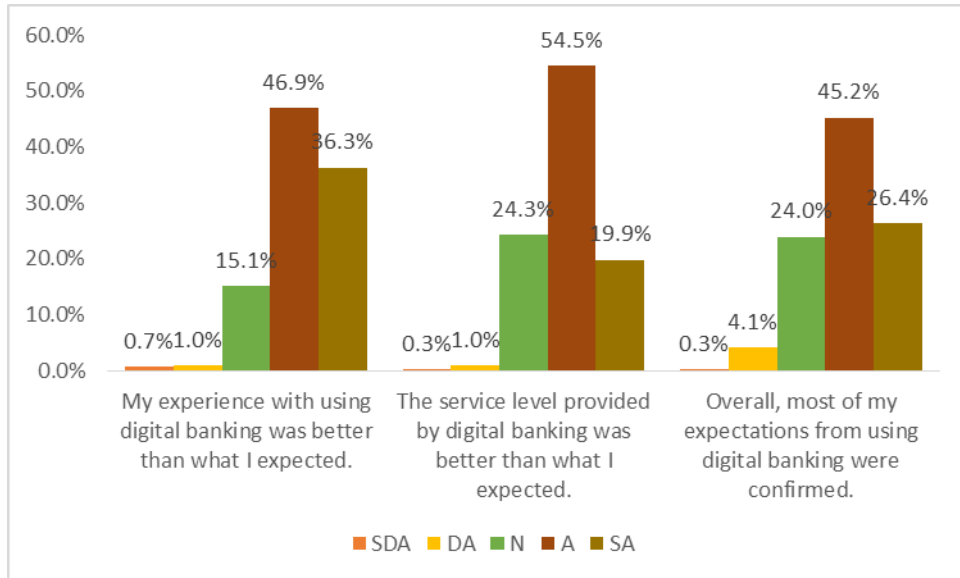


Fig 4.10a: Confirmation on Expectation – Public Sector Bank Sample

We can see from the comparison between public and private sector bank samples that there is no difference between the two groups of bank customers on the “agreed” response. However, on the “strongly agreed” responses, the percentage of public sector bank customer sample is somewhat higher than the percentage customers with private sector bank sample.

Table 4.11: Customers Opinion on Overall Experience – Combined Sample

Overall Experience Indicators	1	2	3	4	5	Mean	Standard Deviation
Satisfaction	1	15	54	209	312	4.439	0.755
Pleasure	0	9	52	283	247	4.380	0.674
Contentment	0	20	65	266	240	4.295	0.765
Delight	3	13	60	275	240	4.319	0.751

The Overall Experience on digital banking platform of combined sample customers is exhibited in Table 4.11, and four indicators – satisfaction, pleasure, contentment and delight are used to measure overall experience. Around 90 per cent of customers have agreed and strongly agreed with overall experience indicators and the mean score of all the items is close to four reveals customers agreed to these items.

Table 4.11a: Customers Opinion on Overall Experience – Bank-wise

Overall Experience Indicators	Public Sector Bank		Private Sector Bank	
	Mean	Standard Deviation	Mean	Standard Deviation
Satisfaction	4.502	0.721	4.374	0.784
Pleasure	4.407	0.660	4.352	0.687
Contentment	4.299	0.724	4.290	0.806
Delight	4.342	0.713	4.295	0.789

Table 4.11 a illustrates the bank-wise mean score on the overall experience indicators. A marginal percentage difference on satisfaction between public and private sector bank group customers is noted. That is, the public sector bank customer sample's mean score (4.502) is higher than the private sector bank sample's (4.374). This implies that public

sector bank customers are highly satisfied compared to private sector customers. Except satisfaction, mean scores of other indicators of overall experience exhibits no difference between the samples of the two groups.

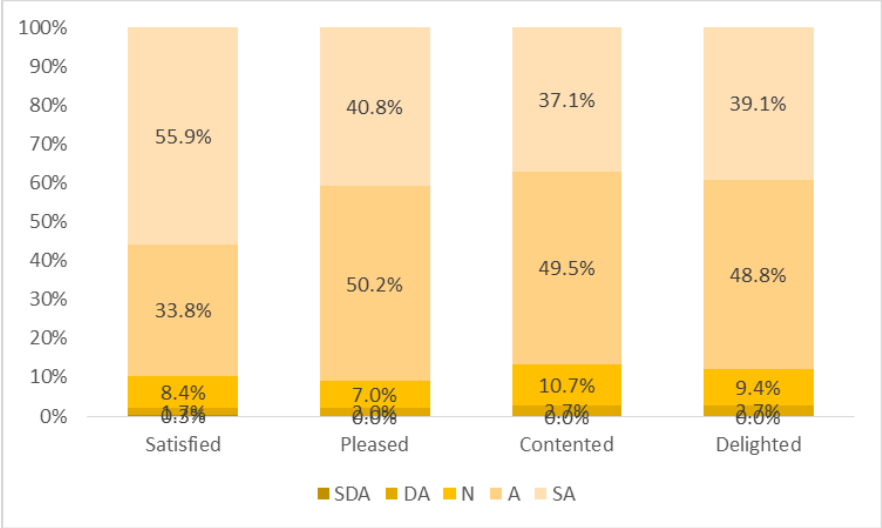


Fig.4.11: Overall Experience – Public Sector Bank Sample

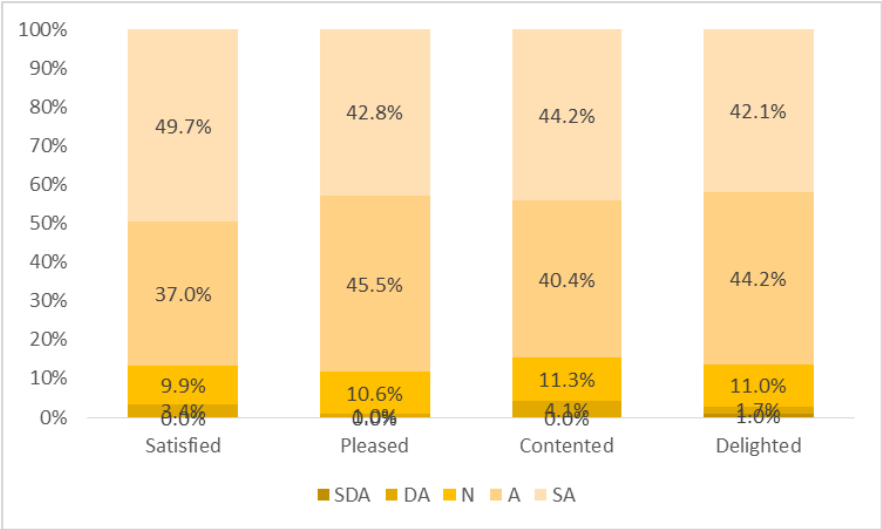


Fig.4.11a: Overall Experience –Private Sector Bank Sample

The following observation is made from the comparison on the level of agreement between public and private sample on overall experience – (a) satisfied – 55.9 per cent

of customers of public sector banks have strongly agreed, whereas it is only 49.7 percent with private sector bank customers; (b) pleased – private sector bank customers’ percentage (42.8 per cent) is slightly higher than that of the customers of public sector banks (40.8 per cent); (c) contented – 44.2 per cent and 37.1 percent of private and public sector bank customers respectively expressed that they were contented; and (d) delighted – the customer sample of private sector banks (42.1 per cent) is higher than the public sector bank customers (39.1 per cent).

Table 4.12: Customers Opinion on Continuance Intention Usage – Combined Sample

Continuance Intention Usage	SDA	DA	N	A	SA	Mean	Standard Deviation
I intend to continue using digital banking rather than discontinue its use.	7	27	98	250	209	4.063	0.898
My intentions are to continue using digital banking than use any alternative means (traditional banking).	11	37	128	297	118	3.793	0.891
If I could, I would like to discontinue my use of digital banking	69	113	210	120	79	3.048	1.182

Continuance Intention Usage is measured with three items, and the level of agreement of the combined bank customer sample is presented in Table 4.12. It is observed that more than 70 per cent and 78 per cent of bank customers have agreed (plus strongly agreed) with two statements – (a) I intend to continue using digital banking rather than discontinue its use and (b) My intentions are to continue using digital banking than use any alternative means (traditional banking). Around 31 per cent of customers have

disagreed (plus strongly disagreed) with ‘If I could, I would like to discontinue my use of digital banking’.

Table 4.12a: Customers Opinion on Continuance Intention Usage – Bank-wise

Continuance Intention Usage	Public Sector Bank		Private Sector Bank	
	Mean	Standard Deviation	Mean	Standard Deviation
I intend to continue using digital banking rather than discontinue its use.	4.047	0.902	4.080	0.895
My intentions are to continue using digital banking than use any alternative means (traditional banking).	3.727	0.910	3.860	0.869
If I could, I would like to discontinue my use of digital banking	3.029	1.212	3.067	1.151

The mean score between bank-wise samples indicates that there is no difference between the samples of the two groups on the level of agreement with the stated indicators (Table 4.12a). It is observed that both the groups have agreed with first two indicators and both groups have provided neutral responses on the third item of continuance intention usage. The level of agreement (figure below) is reflected in mean scores.

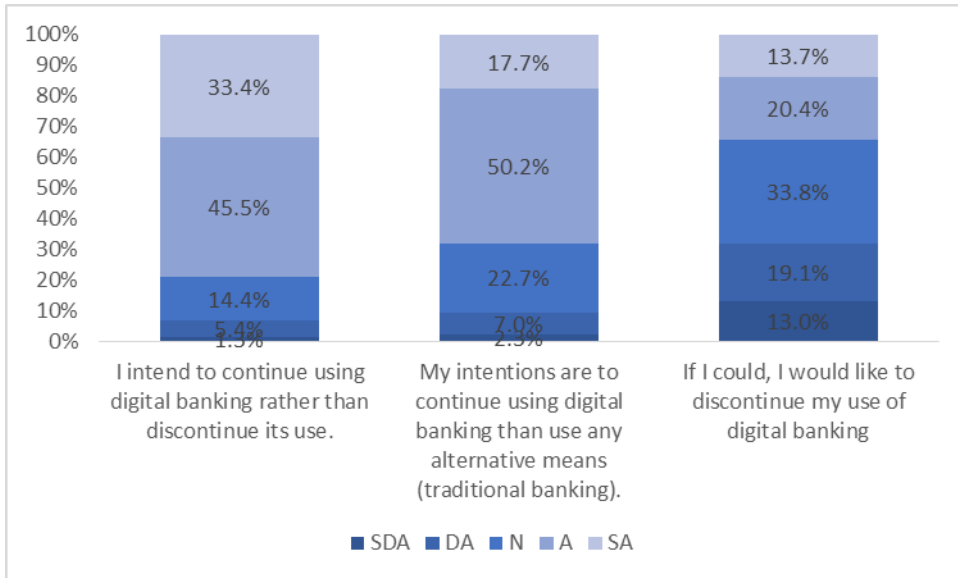


Fig.4.12: Continuance intention usage – Public Sector Bank Sample

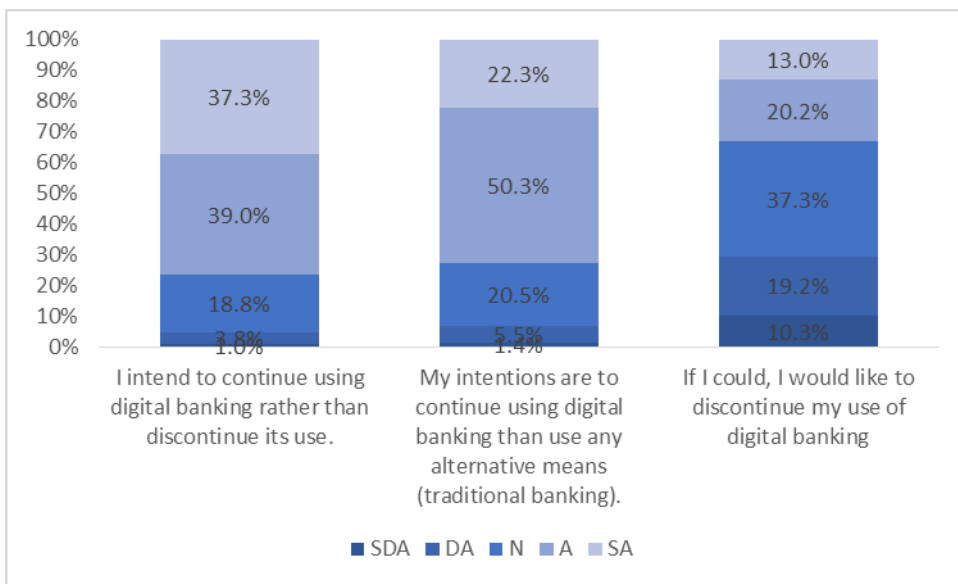


Fig.4.12a: Continuance intention usage – Public Sector Bank Sample

4.4 Model Testing

The following section provides an insight into the results of the different models tested in the study using Partial Least Square – Structural Equation Modelling (PLS-SEM) method. Initially, model 1 that studies the effect of UTAUT2 constructs on continuance intention usage was tested. Model 2 illustrates the inclusion additional two constructs namely, Financial Cost and Risk Factor with UTAUT2 constructs and their impact on continuance intention usage. Model 3 is a comprehensive model, which highlights the addition of Confirmation of Expectation and Overall Experience with model 2 variables. The effect of Financial Cost, Risk Factors, Confirmation of Expectation and Overall Experience on Continuance Intention Usage is given in Model 4 and finally Model 5 describes the impact of Financial Cost and Risk Factors on continuance intention usage.

All the above stated models were tested for the combined sample of bank customers as well as public and private sector sample customers individually.

The constructs of the model were examined for data reliability and validity for further analysis. Finally, the models were tested through PLS-SEM with path coefficients and boot strapping method.

Table 4.13: Reliability and Validity Values

Constructs	AVE	Composite Reliability	Cronbach's Alpha
Continuance Intention Usage	0.508	0.714	0.460
Confirmation of Expectation	0.686	0.868	0.772
Effort Expectancy	0.588	0.851	0.766
Facilitating Condition	0.516	0.809	0.686
Financial Cost	0.418	0.849	0.797
Hedonic Motivation	0.721	0.886	0.807
Habit	0.711	0.881	0.797
Overall Experience	0.697	0.902	0.857
Performance Expectation	0.642	0.843	0.722
Price Value	0.626	0.834	0.701
Risk Factors	0.269	0.780	0.862
Social Influence	0.662	0.854	0.745

Table 4.13 presents details on Average Variance Extracted (AVE), Composite Reliability and Cronbach's Alpha of the constructs used in the study. It is noted that the Cronbach's Alpha for the selected constructs are well above the suggested cut-off or thumb-rule value (0.7) except continuance intention usage. However, the AVE and composite reliability values ensured that the constructs were reliable and that the data was valid for further analysis.

Table 4.14: Model 1 - UTAUT2 Constructs-Path Coefficients

Constructs	All	PuSB	PrSB
EE -> CIU	-0.007	-0.013	0.016
FC -> CIU	0.188	0.186	0.217
HM -> CIU	0.162	0.051	0.259***
HT -> CIU	0.021	0.115	-0.062
PE -> CIU	0.171	0.130	0.198***
PV -> CIU	0.111	0.083	0.115
SI -> CIU	0.017	0.040	0.006
R-Square	<i>0.247</i>	<i>0.196</i>	<i>0.328</i>

*Note: Independent Variables - EE-Effort Expectance; FC-Facilitating Conditions; HM-Hedonic Motivation; HT-Habit; PE-Performance Expectancy; PV-Price Value; SI-Social Influence
Dependent Variable: CIU-Continuance Intention Usage
PuSB-Public Sector Banks; and PrSB-Private Sector Banks
*** Significant at .10 level*

Model 1 explains the effect of UTAUT2 constructs as independent variables namely, Effort Expectance (EE), Facilitating Conditions (FC), Hedonic Motivation (HM), Habit (HT), Performance Expectancy (PE), Price Value (PV) and Social Influence (SI) on the Continuance Intention to Use (CIU) as independent variable for public sector banks (PuSB), private sector banks (PrSB) and total banks (All). It is noticed that all the seven constructs of UTAUT2 explain 24.70 per cent of variation in CIU for the aggregated bank customers sample. With respect to PuSB and PrSB, the variation accounted for 19.60 per cent and 32.80 per cent respectively.

With all banks' and PuSB customer samples, the path coefficients of UTAUT2 constructs positively influence CIU except EE. However, the values are statistically insignificant. In relation to PrSB customer sample, the path coefficients of HM ($\beta=0.259$, $t=1.886$) and PE ($\beta=0.198$, $t=1.816$) are positive and statistically significant, whereas all other constructs are positive but statistically insignificant except HT. Thus, the path

coefficients of Hedonic Motivation and Performance Expectancy signifies that they positively influence the private sector bank customers continuance intention use of digital banking.

The tested models for combined samples (All), public sector banks (PuSB) and private sector banks (PrSB) are presented in Fig. 1, Fig. 1a and Fig. 1b.

Based on the path coefficients, the hypotheses H1a and H1e related to performance expectancy and hedonic motivation are accepted for the private sector customer sample only. All the hypotheses are not supported by the path coefficients related to combined samples and public sector samples.

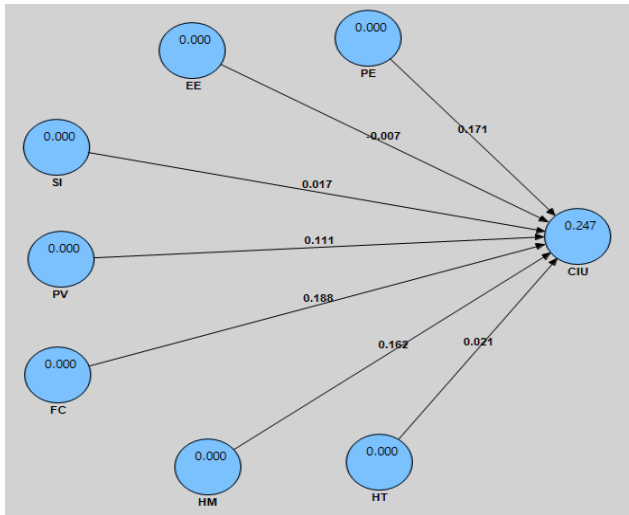


Fig.4.13: Model 1 - UTAUT2 for All Banks

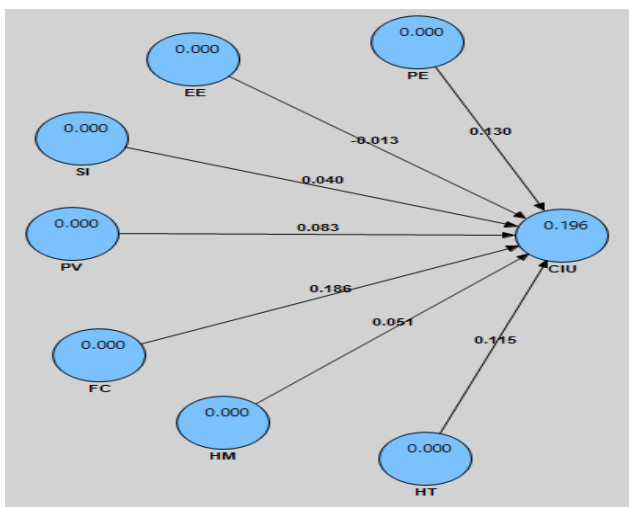


Fig.4.13a: Model 1 - UTAUT2 for Public Sector Banks

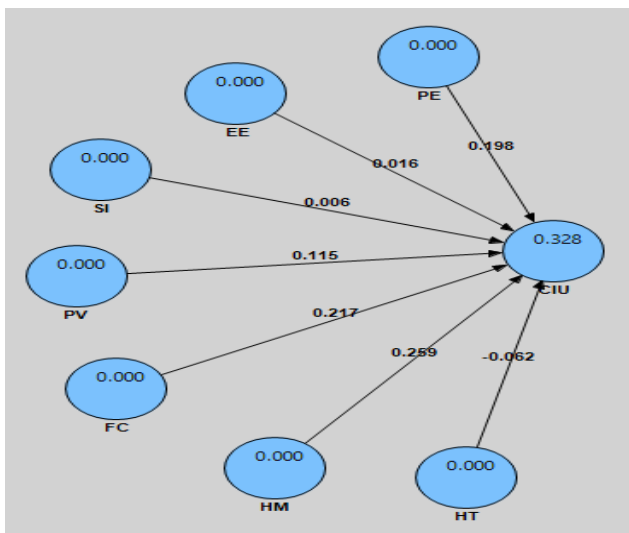


Fig.4.13b: Model 1 - UTAUT2 for Private Sector Banks

Table 4.15: Model 2 - UTAUT2 Constructs Financial Cost and Risk-Path Coefficients

Constructs	All	PuSB	PrSB
EE -> CIU	-0.040	-0.025	0.000012
FC -> CIU	0.170	0.204	0.197
HM -> CIU	0.148	0.032	0.240***
HT -> CIU	0.025	0.076	-0.047
PE -> CIU	0.168	0.094	0.181***
PV -> CIU	0.086	0.048	0.101
SI -> CIU	0.034	0.146	0.018
FCOST -> CIU	0.152	0.232**	0.085
RISK -> CIU	0.196	0.032	0.177
<i>R-Square</i>	<i>0.299</i>	<i>0.257</i>	<i>0.356</i>

Note: **Independent Variables** – UTAUT constructs, FCOST-Financial Cost; and RISK-Risk factors
 *** Significant at .10 level; ** Significant at .05 level

Model-2 illustrates the inclusion of Financial Cost (FCOST) and Risk factors (RISK) with UTAUT2 constructs. In Model-2, the R-square values for all three samples have increased considerably compared to that of Model-1, that is 29.90 per cent, 25.70 per cent and 35.60 per cent for combined samples (All), public sector banks (PuSB) and private sector banks (PrSB) respectively.

With respect to combined samples (All), the path coefficients of the six constructs of UTAUT2 (except negative path coefficient for effort efficiency), financial cost and risk are positive but statistically insignificant.

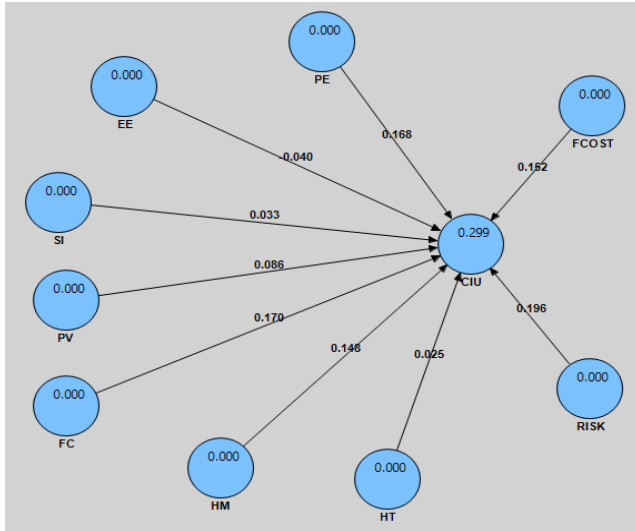
It is evident from the path coefficient of public sector banks customer sample that the UTAUT's six constructs (except negative and insignificant path coefficient for effort efficiency) and risk factors have positive coefficients; however, they are not statistically significant. The positive and statistically significant (at 0.05 significance level) path

coefficient for financial cost ($\beta=0.232$, $t=2.169$) reveals that the financial service fees charged by public sector banks for its customers positively impacts the continuance intention usage of digital banking services.

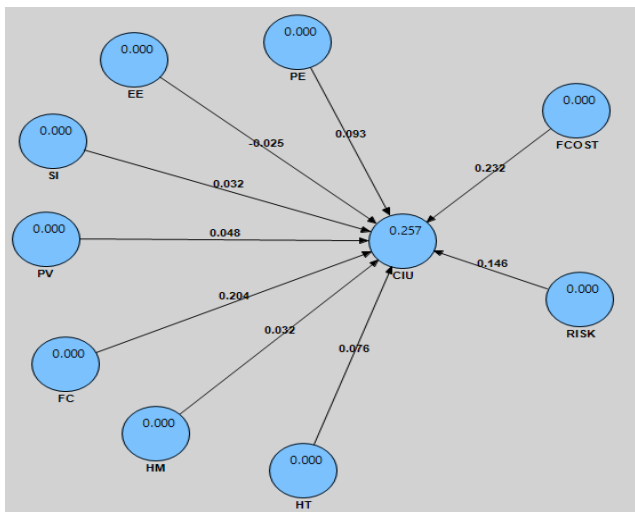
On the samples of private sector banks, the path coefficients of HM ($\beta=0.240$, $t=1.886$), PE and ($\beta=0.198$, $t=1.816$) are positive and statistically significant, whereas other constructs of UTAUT2, Financial Cost and Risk do not have statistically significant path coefficients.

It is noticed that after the inclusion of financial cost and risk, the path coefficients do not support the hypotheses related to UTAUT2 from 1a to 1e with combined bank sample. Only H2 with financial cost is supported with public sector bank sample and H1a and H1e related to Performance Expectancy and Hedonic motivation respectively are accepted and other hypotheses are not supported.

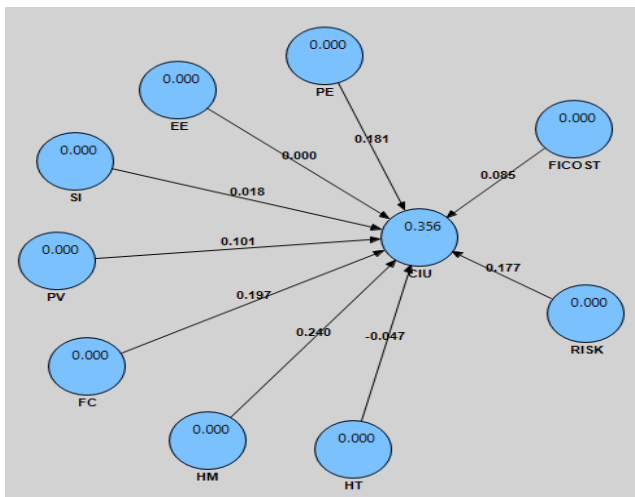
The tested models are presented in Fig.4.14, 4.14a and 4.14b.



**Fig.4.14: Model 2 - UTAUT2
Constructs Financial Cost and Risk
– All Banks**



**Fig.14a: Model 2 - UTAUT2
Constructs Financial Cost and
Risk – Public Sector Banks**



**Fig.4.14b: Model 2 - UTAUT2
Constructs Financial Cost and
Risk – Private Sector Banks**

Table 4.16: Model 3 - UTAUT2 Constructs Financial Cost, Risk, Confirmation on Expectation and Overall Experience-Path Coefficients

Constructs	All	PuSB	PrSB
EE -> CIU	-0.051	-0.034	-0.028
FC -> CIU	0.181	0.205	0.192
HM -> CIU	0.137	0.031	0.240
HT -> CIU	-0.013	0.057	-0.068
PE -> CIU	0.121	0.010	0.160
PV -> CIU	0.053	-0.005	0.102
SI -> CIU	0.004	0.033	0.001
FCOST -> CIU	0.092	0.138	0.068
RISK -> CIU	0.106	0.144	0.184
COE -> CIU	0.204	0.261***	0.153
OEX -> CIU	0.051	0.109	-0.028
R-Square	0.309	0.318	0.369

*Note: Independent Variables – UTAUT constructs, FCOST-Financial Cost; RISK-Risk factors; COE-Confirmation on Expectation; OEX-Overall Experience
 *** Significant at .10 level; ** Significant at .05 level*

Table 4.16 describes the path coefficients of comprehensive Model 3 which consists of UTAUT2 constructs, Financial Cost (FCOST), Risk factors (RISK), Confirmation on Expectation (COE), and Overall Experience (OEX) and their effect on the continuance intention usage (CIU) of digital banking. The value of R-square for combined sample is 0.309 reveals that the 30.90 per cent of variation in CIU of digital banking is explained by the independent variables included in the model. For the public sector bank customer sample, the independent variables of the model accounted 31.80 per cent of variation in CIU, whereas it is 36.90 per cent in the case of private sector bank customer sample.

With the presence of COE and OEX, it is noted from the path coefficients of combined and private sector bank samples that CIU is not influenced by any of the independent variable included in the model.

In public sector bank sample, only confirmation on expectation (COE) is positive and statistically significant at 0.10 levels, thus H4 is accepted. Two of UTAUT2 constructs – EE and PV are with negative coefficients without statistical significance level. It is also noted that no other independent variables significantly influences the CIU of digital banking services by the public sector bank customers.

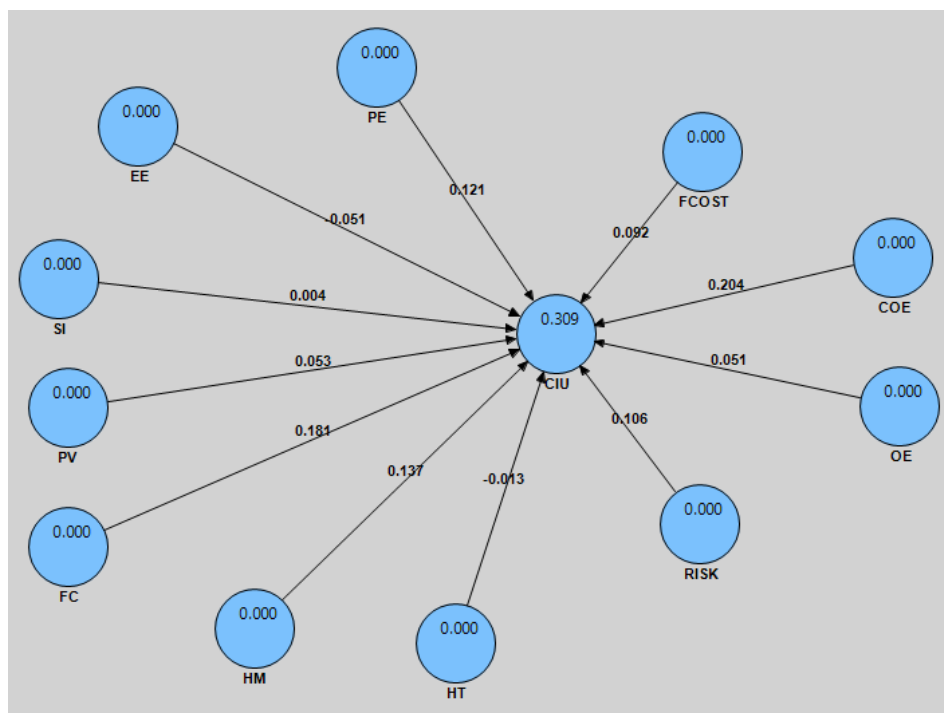


Fig.4.15: Model 3 - UTAUT2 Constructs Financial Cost, Risk, COE and OEX – All Banks

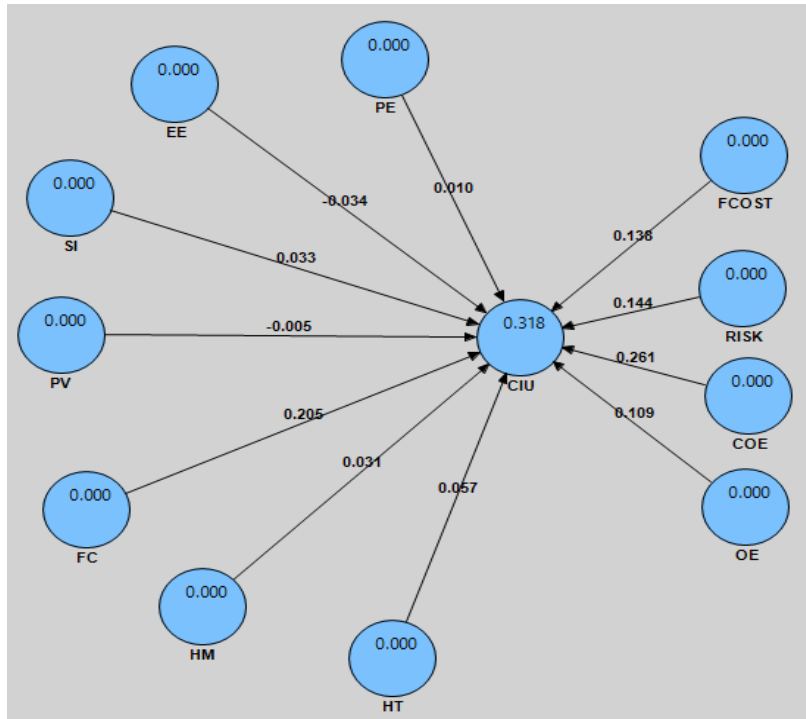


Fig.4.15a: Model 3 - UTAUT2 Constructs Financial Cost, Risk, COE and OEX –Public Sector Banks

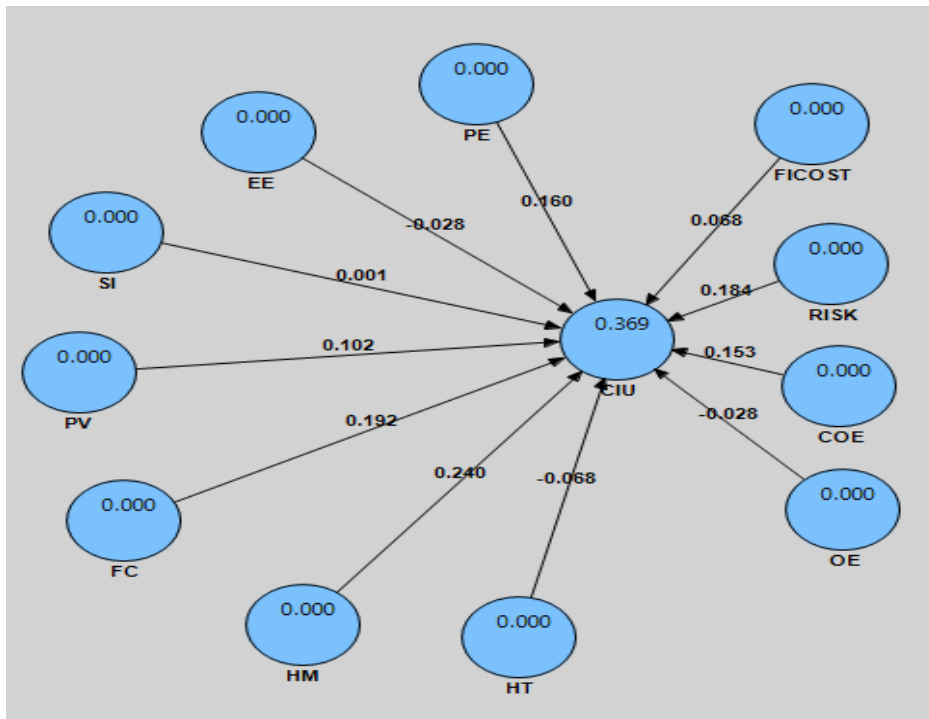


Fig.4.15b: Model 3 - UTAUT2 Constructs Financial Cost, Risk, COE and OEX – Private Sector Banks

Table 4.17: Model 4 - Financial Cost, Risk, Conformation on Expectation and Overall Experience-Path Coefficients

Constructs	All	PuSB	PrSB
FCOST -> CIU	0.133	0.148	0.168
RISK -> CIU	0.085	0.170	0.281
COE -> CIU	0.357**	0.355**	0.284**
OEX -> CIU	0.065	0.088	0.094
R-Square	0.219	0.268	0.237

Note: Independent Variables – FCOST-Financial Cost; RISK-Risk factors; COE-Confirmation on Expectation; OEX-Overall Experience

*** Significant at .05 level*

The model 4 describes the effect of FCOST, RISK, COE and OEX on the customer continuance intention usage of digital banking product and services.

The path coefficients of financial cost, risk factors and overall experience are positive across three samples. However, they are not statistically significant coefficients. Thus, this model has failed to explain the customer’s continuance intention use of digital banking.

It is noted from the path coefficient of conformation on expectation that the coefficients are positive and statistically significant across three samples of the customers, thus H3 is accepted. It is found that the path coefficients 0.357, 0.355 and 0.284 are related to combined samples, public sector banks (PuSB) and private sector banks (PrSB) respectively.

It is found from the R-square values that 21.90 per cent of effect of CIU (for combined sample) is explained by four variables included in the model. It is also noticed that 26.80 per cent variation in public sector bank customers’ CIU accounted by the FCOST, RISK, COE and OEX. With respect to private sector banks, 23.79 per cent of variation in CIU is revealed by the independent variables of the model.

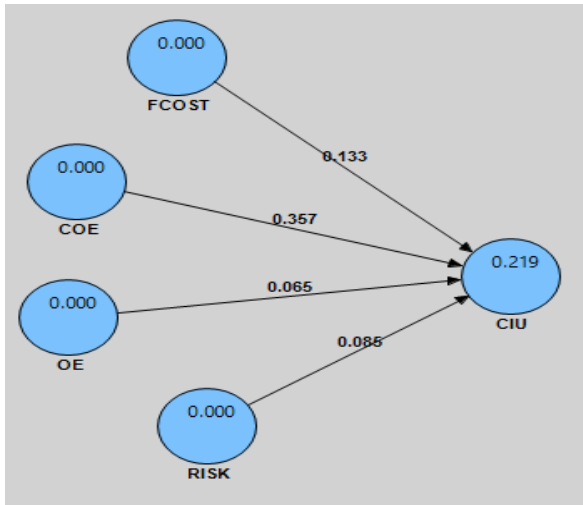


Fig. 4.16: Model 4 - Financial Cost, Risk, COE and OEX – All Banks

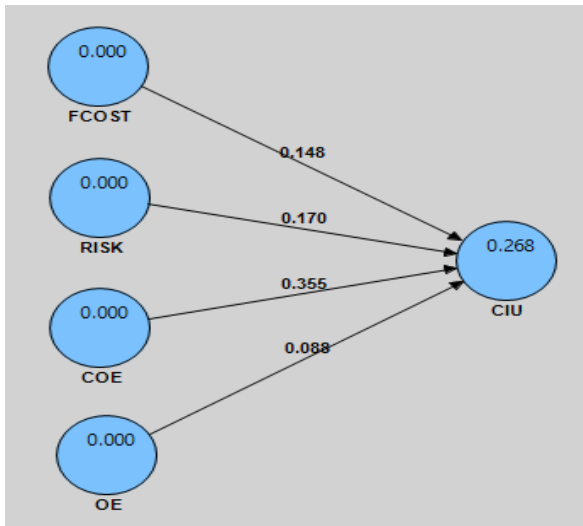


Fig. 4.16a: Model 4 - Financial Cost, Risk, COE and OEX – Public Sector Banks

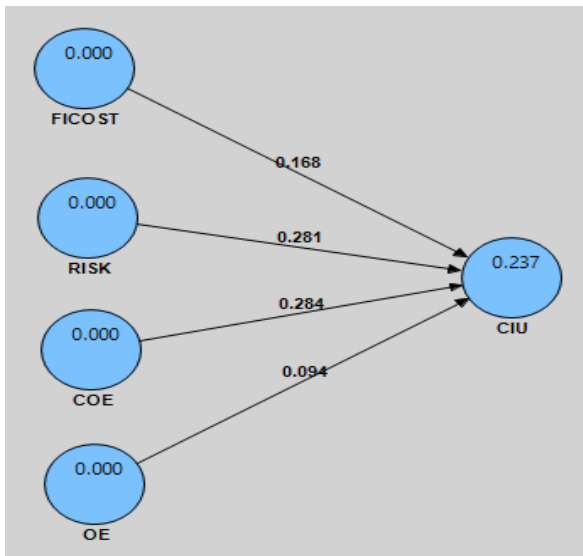


Fig. 4.16b: Model 4 - Financial Cost, Risk, COE and OEX – Private Sector Banks

Table 4.18: Model 5 - Financial Cost and Risk - Path Coefficients

Constructs	All	PuSB	PrSB
FCOST -> CIU	0.121	0.253**	0.249
RISK -> CIU	0.379***	0.308***	0.394
R-Square	0.183	0.195	0.216

Note: Independent Variables – FCOST-Financial Cost and RISK-Risk factors

**** Significant at .10 level; ** Significant at .05 level*

Model 5 exhibits the positive effect of financial cost and risk factors on the continuance intention usage of digital banking products and services of the customers.

With respect to combined sample, path coefficients of FCOST and RISK are positive, however only risk factor is statistically significant at 0.10 levels and H3 is accepted. The R-square value signifies that 18.30 per cent of variation in CIU is explained by these two variables.

With respect to the public sector bank sample, path coefficients of FCOST ($\beta=0.253$, $t=2.110$) and RISK ($\beta=0.308$, $t=1.803$) are positive and statistically significant and H2 as well as H3 are accepted. The value of R-square (=0.195) explains that 19.50 per cent of variation in CIU is accounted by the FCOST and RISK.

Even though the value of R-square (0.216) is relatively higher in private sector sample compared to public sector bank sample, the positive path coefficients of FCOST and RISK are not statistically significant.

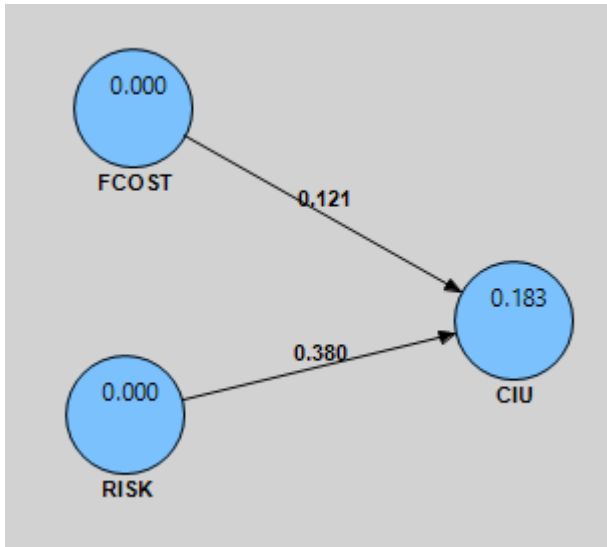


Fig. 4.17: Model 5 - Financial Cost and Risk – All Banks

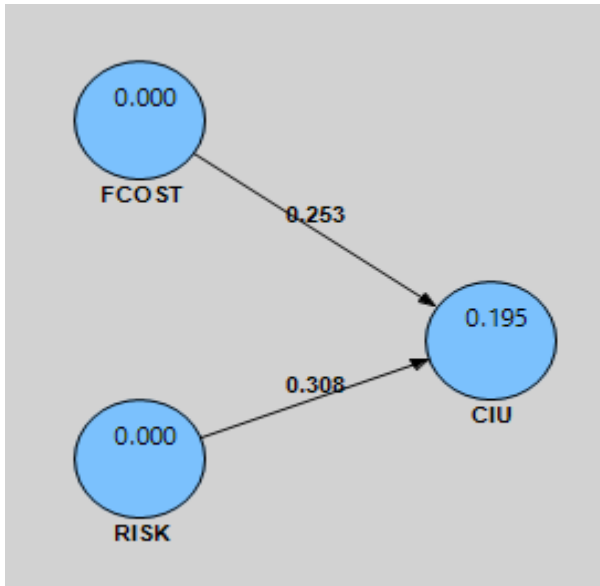


Fig. 4.17a: Model 5 - Financial Cost and Risk – Public Sector Banks

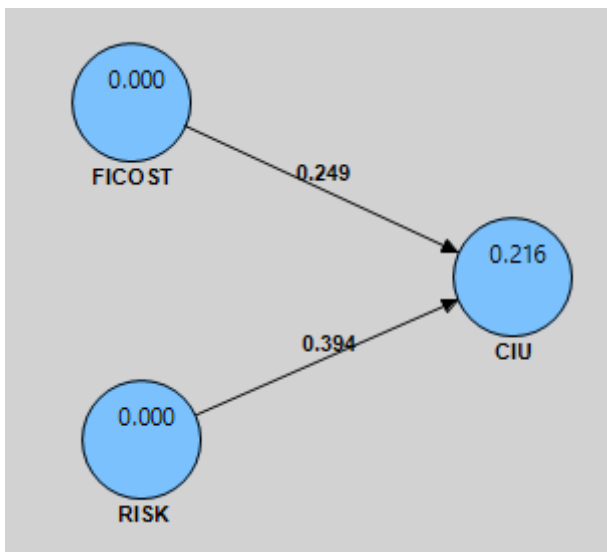


Fig. 4.17b: Model 5 - Financial Cost and Risk – Private Sector Banks

4.5 MANOVA Analysis for Difference in bank customer perception on Constructs

In order to find the significant difference in customer perception on predictors of continuance Intention Usage, MANOVA analysis was used.

Table 4.19: MANOVA Results- Multivariate Tests

Bank	Pillai's Trace	.028	1.493 ^b	11.000	579.000	.130
	Wilks' Lambda	.972	1.493 ^b	11.000	579.000	.130
	Hotelling's Trace	.028	1.493 ^b	11.000	579.000	.130
	Roy's Largest Root	.028	1.493 ^b	11.000	579.000	.130

The results of MANOVA's four tests, especially Wilks' Lambda (Wilks' $\Lambda = 0.972$, $F=1.493$ (df=579)), supports there is no significant difference in customer perception on predictors of continuance intention usage of digital banking: UTAUT constructs - Effort Expectance (EE), Facilitating Conditions (FC), Hedonic Motivation (HM), Habit (HT), Performance Expectancy (PE), Price Value (PV) and Social Influence (SI) along with Financial Cost, Risk factors, Confirmation on Expectation and Overall Experience between public sector and private sector banks.

The ANOVA F-value of the dependent variables produced varied results with respect to the bank-wise customer sample. It is noticed that of the seven UTAUT2 constructs – performance expectancy and social influence are statistically significant while all other constructs are statistically insignificant.

**Table 4.19a: Univariate F Tests and Descriptive Statistics for dependent variables
– Bank-wise**

Constructs		Bank	Mean	Std. Deviation	F-value
Confirmation on Expectation		Public Sector Banks	4.0071	.68266	0.001
		Private Sector Banks	4.0091	.64098	
		Total	4.0081	.66184	
Experience		Public Sector Banks	4.3876	.58530	1.394
		Private Sector Banks	4.3276	.64841	
		Total	4.3580	.61749	
Financial Cost		Public Sector Banks	3.4008	.75895	.012
		Private Sector Banks	3.3940	.75130	
		Total	3.3975	.75455	
Risk		Public Sector Banks	3.3302	.69539	.969
		Private Sector Banks	3.2726	.72535	
		Total	3.3017	.71033	
UTAUT2 Constructs	PE	Public Sector Banks	4.2172	.66504	2.531***
		Private Sector Banks	4.3045	.66892	
		Total	4.2604	.66783	
	EE	Public Sector Banks	3.9975	.71166	1.342
		Private Sector Banks	4.0623	.64557	
		Total	4.0295	.68001	
	SI	Public Sector Banks	3.8426	.71375	3.592**

	Private Sector Banks	3.7239	.80728	
	Total	3.7839	.76307	
FC	Public Sector Banks	3.9236	.66537	1.249
	Private Sector Banks	3.9830	.62476	
	Total	3.9530	.64577	
PV	Public Sector Banks	3.8080	.72271	.007
	Private Sector Banks	3.8031	.74633	
	Total	3.8055	.73385	
HM	Public Sector Banks	3.5429	.90058	.824
	Private Sector Banks	3.6097	.88748	
	Total	3.5759	.89400	
HT	Public Sector Banks	3.5584	.93032	.092
	Private Sector Banks	3.5343	.99573	
	Total	3.5465	.96245	

4.6 Discriminant Analysis – Classification of Customers

Discriminant analysis is defined as the relationship between a set of independent variables which are with interval and ratio data and a grouped dependent variable with non-metric data. Discriminant analysis not only tests the difference in a priori groups of multivariate observation, but also provides an extremely useful way to classify new observations (Anderson and Robinson, 2003). It can also be applied to classify the group or person as ‘good’ or ‘bad’ by a set of independent variables (Donald G. Morrison, 1969). Many application oriented articles in the area of sociology, psychology and management have studied discriminant analysis independently and in combination with other techniques like factor analysis. They have used this technique to achieve the following objectives: (a) to classify the groups and (b) to differentiate the two groups through set of independent variables including socio-economic variables.

Table 4.20: Tests of Equality of Group Means- Variables Influencing Continuance Intention usage

Drivers of Continuance Intention Usage	Group Statistics				Tests of Equality of Group Means		
	PuSB		PrSB		Wilks' Lambda	F	Sig.
	Mean	Std. Deviation	Mean	Std. Deviation			
Risk	3.330	0.695	3.273	0.725	0.998	0.969	0.325
PE	4.217	0.665	4.305	0.669	0.996	2.531	0.112
EE	3.997	0.712	4.062	0.646	0.998	1.342	0.247
SI	3.843	0.714	3.724	0.807	0.994	3.592	0.059
FC	3.924	0.665	3.983	0.625	0.998	1.249	0.264
PV	3.808	0.723	3.803	0.746	1.000	0.007	0.936
HM	3.543	0.901	3.610	0.887	0.999	0.824	0.364
HT	3.558	0.930	3.534	0.996	1.000	0.092	0.761
COE	4.007	0.683	4.009	0.641	1.000	0.001	0.971

Table 4.20 and 4.20a provide an insight into the constructs included to understand the discriminating variable(s) between public and private sector bank customer sample. It is noted that only two constructs namely Performance Expectancy (-1.268) and Social Influence (1.206) discriminate the customers of public and private sector sample. The eigenvalue is 0.16 and overall Wilk's Lambda is 0.984 whereas the group means (centroids) of the discriminant function is 0.125 for public sector bank customer group and -0.128 for private sector bank customer group.

Using the standardized canonical discriminant function coefficient, the discriminant function for the result is

$$Z_{jk} = W_1 X_{1k} + W_2 X_{2k} + \dots + W_n X_{nk},$$

where,

Z_{jk} = discriminant Z score of discriminant function j for object k

W_i = discriminant coefficient for independent variable i

X_{ik} = independent variable I for object k.

Thus, with the five discriminatory variables the discriminant function is:

$$Z = -0.846(\text{Performance Expectancy}) + 0.918 (\text{Social Influence})$$

In order to determine the predictive accuracy, the classification matrix (Table 13d) is used. It is noted from the values that the discriminant function is correctly classified at 54.7 percent.

The relative importance between variables included in the discriminant function (Table 13b) reveals that social influence is highly discriminating loading (0.918) followed by performance expectancy (-0.846). The discriminating ability of the function is explained by canonical correlation which is 12.6 per cent, which means only 0.02 per cent of variation is accounted for by the performance expectancy and social influence. Other indices (chi-square) support the overall fit of discriminating function.

Table 4.20a: Stepwise discriminant analysis

Step		Tolerance	Sig. of F to Remove	Wilks' Lambda
1	Social Influence	1.000	.059	
2	Social Influence	.871	.009	.996
	Performance Expectancy	.871	.016	.994

Table 4.20b: Standardized Canonical Discriminant Function Coefficients

	Function
	1
Performance Expectancy	-.846
Social Influence	.918

Table 4.20c: Structure Matrix, Canonical Discriminant Function and Group Centroids

Structure Matrix	Function
	1
Social Influence	.614
Performance Expectancy	-.515
Effort Expectancy ^a	-.237
Risk ^a	.166
Hedonic Motivation ^a	.117
Confirmation of Expectation ^a	-.088
Facilitating Condition ^a	-.072
Price Value ^a	.017
Habit ^a	.017
Canonical Discriminant Function Coefficients	
Performance Expectancy	-1.268
Social Influence	1.206

(Constant)	.839
Group Centroids	
Public Sector Bank Customer sample	.125
Private Sector Bank Customer sample	-.128

*Note: Pooled within-groups correlations between discriminating variables and standardized canonical discriminant functions. Variables ordered by absolute size of correlation within function.
a. This variable not used in the analysis.*

Table 4.20d: Wilks' Lambda and Chi-square

Test of Function(s)	Wilks' Lambda	Chi-square	df	Sig.
1	.984	9.433	2	.009

Table 4.20e: Classification Results for Analysis

		Bank	Predicted Group Membership		Total
			PuSB	PrSB	
Original	Count	PuSB	188	111	299
		PrSB	157	135	292
	%	PuSB	62.9	37.1	100.0
		PrSB	53.8	46.2	100.0

a. 54.7% of original grouped cases correctly classified.

CHAPTER V

Summary of Findings, Policy Implications and Conclusion

5.1 Demographic, Relationship with banks and Internet use per day Details

95.77 per cent of the samples were in the 'less than 50 years' age group. Majority (63.79 per cent) of the respondents were male customers. 57 per cent of the respondents were single and 31 per cent were married. 87.99 per cent of the respondents had an educational qualification above undergraduate level. Majority of the respondents (52.62 per cent) had an income of less than Rs.50000 per month.

Around 82 percent of the respondents stated that they had relationship with their bank up to 10 years. Majority of the respondents (77 per cent) used internet (per day) for up to 9 hours.

5.2 Familiarity, Expertise and Digital Banking Use

70 per cent of the respondents are familiar with electronic gadgets- Mobiles and PC/Laptop - which are basic requirements for the use of digital banking. Around 80 per cent of the respondents have opined that they have enough expertise in digital banking and 63 per cent of them use the digital banking platforms at least 10 times for transactions.

5.3 Transaction type, Year and Opinion on Usage level

It is found that more than 90 per cent use internet banking and cards (Debit and Credit cards). The use of new modes of digital banking like mobile payments, mobile wallets are steadily increasing. Majority were of the view that the usage level with new digital banking modes namely mobile payments and cards has increased compared to that of internet banking, aadhar and ATM.

44 per cent of the respondents said that they performed more than 2 digital transactions a day through digital banking modes and around 70 per cent of them found that the digital banking mode was easy for financial transactions.

5.4 Level of agreement on UTAUT2 constructs, Financial Cost, Risk factors, confirmation on expectation and overall experience

The following are the summary of findings on the level of agreement with respect to UTAUT2 constructs, financial cost, risk factors, confirmation on expectation and overall experience in terms of combined and bank-wise sample:

UTAUT Constructs: Of the 591 respondents, more than 400 respondents agreed or strongly agreed with the measurement items of the seven UTAUT constructs. The mean score for all the items was around *four*, which supported the majority respondents' "agreed" response. While analyzing the bank-wise responses, there was no difference in the mean score for all the items of seven constructs, except on the item (mean score – 3) – 'I am addicted to using digital banking'.

Financial Cost: Out of the 591 combined bank customers, 200 – 300 respondents agreed with financial cost indicators. This is supported by the mean score of the items. It was found that 5 out of 8 items have a mean score around 3, which means that the respondents have provided neutral response on these items. It is observed from the bank-wise comparison that there is no difference between public and private sector sample customers on the financial cost indicators.

Risk Factors: Among the mean score of the four risk dimensions, security risk was rated high revealing that the customers of combined samples "strongly agreed" to security risks, and were concerned with threats and hacking. The combined bank customer

sample have “agreed” that the use of digital banking can result in risk to their personal and confidential information (mean score – around 4). On the other two risk dimensions – social risk and time loss, most customers have preferred a neutral response. It is found from the bank-wise customer analysis that public sector bank customers were more concerned about various risks compared to their private sector counterparts.

Confirmation on Expectation: The study found that most customers “agreed” that their bank met the expectations on the digital banking (mean score is around 4). No difference was found while comparing bank-wise samples.

Overall Experience: About 90 per cent of the customers “agreed” or “strongly agreed” with the overall experience indicators and the mean score of all the items was close to four, thus revealing higher satisfaction levels. The comparison between public and private sector samples revealed a marginal difference on satisfaction and no difference with respect to pleasure, contentment and delight.

5.5 Findings on Model

Model 1: It is found from the R-square values that 22 – 33 per cent of variation in continuance intention use is accounted by the UTAUT2 constructs. Lowest R-square value ($R^2=0.196$) and highest value ($R^2=0.328$) was observed with public and private sector bank samples respectively. Only performance expectancy and hedonic motivation were strong predictors for the private sector bank customers’ continuous intention usage of digital banking compared to other variables.

Model 2: After the inclusion of financial cost and risk factors with UTAUT2, it is found that R-square has marginally increased compared to the Model 1. R-square ranged between 0.25 and 0.35 meaning 25 to 35 per cent of variation in continuance intention

usage is explained by independent variables. Performance Expectancy and Hedonic Motivation are seemingly the drivers of digital banking's continuance intention usage of private sector bank customers and Financial Cost does influence the public sector bank customer sample.

Model 3: The R-square values for all three samples significantly improved after the incorporation of additional variables of Expectation-Confirmation Model namely Confirmation on Expectation and Overall Experience. R-square ranged between 0.31 and 0.37. Only one variable financial cost significantly influences the public sector bank customers' continuous intention usage of digital banking.

Model 4: Out of Financial Cost, Risk, Confirmation on Expectation and Overall Experience, confirmation on expectation strongly drives the continuance intention usage of digital banking across the samples. The value of R-square is between 0.22 and 0.27.

Model 5: Out of financial cost and risk factors, risk is a strong influencer for digital banking continuance intention usage with combined samples and public sector bank sample compared to that of private sector banks. Financial cost is noted as strong determinant of public sector bank customers' continuance intention usage of digital banking platforms.

5.6 MANOVA on significant difference in customer perception on predictors of continuance Intention Usage

It is found from the bank-wise customer sample that, of the seven UTAUT2 constructs, – Performance Expectancy and Social Influence are statistically significant whereas all other constructs are statistically insignificant. The mean-score between the samples support the F-value of MANOVA.

5.7 Profiling of customers through Discriminant Analysis

It is found that, out of UTAUT2 construct- financial cost, risk factors, confirmation on expectation and overall experience- only two UTAUT2 constructs namely, Performance Expectancy (-1.268) and Social Influence (1.206) discriminate the customers of public and private sector sample. The relative importance between variables included in the discriminant function (Table 13b) reveals that social influence has a high discriminating loading (0.918) followed by performance expectancy (-0.846).

It is also found that the discriminant function helps in correctly classifying 54.7 per cent into public and private sector bank customers from the sample.

5.8 Policy Implications

The policy implications from the study can be grouped as those that are applicable to:

- (a) All Banks
- (b) Public Sector Banks
- (c) Private Sector Banks

All banks

The top three issues that the respondents mentioned in an open-ended question on discontinuance of digital banking were technology related issues, lack of information and absence of need. These three aspects have important implications for all banks. Technology related issues such as frequent incomplete transactions due to server issues or internet speed would definitely put off consumers. In digital banking, this means that the technology team in the bank needs to be a strategic partner to the marketing efforts of the bank. All consumer issues related to technology need to be addressed immediately

when they occur. A 24/7 toll free number dedicated to solving technical issues is a must to retain customers. In addition, the need to work with IT and communication backbone service providers is a necessity to ensure continuous usage of digital banking. The absence of downtime or limited downtime of the technological support is a must.

Another issue that consumers raised, namely, absence of information is an opportunity to communicate with the consumers continuously. Digital banking needs the use of digital modes of communication like SMS, Social messaging platforms, email etc. on a regular basis to educate consumers about various aspects of digital banking. This is also linked to the 3rd issue noted, namely, absence of need. Benefits of digital banking even in the case of those who transact minimally can help in migration of a large number of consumers to the digital mode to enhance their banking experience. Another benefit of educating the banking consumers who lack awareness is to ensure that banking costs reduce. which in turn mutually benefits the bank and the consumer.

The UTAUT2 model run [using the combined (all banks) sample] for continuous usage intention found that social influence had a high discriminating loading (0.918) followed by performance expectancy. Peer pressure makes several consumers accept technology and use it after which it becomes a habit based on experience. Hence, there is a need for banks to communicate using this aspect for better usage and continuance of usage of digital banking. In spite of the other factors involved in acceptance and use of technology, social influence is the final push for greater continuance usage. Social influence can be effectively used by banks when they interact face-to-face with consumers in large gatherings like office settings where the experts in technology usage can influence colleagues and friends to adopt digital banking and use it continuously. In addition, various media can be used to promote continuance usage with the help of settings that recreate the social influence setting.

Performance Expectancy is the next aspect that is key to all banks. It relates to usefulness, speed and productivity. Every bank needs to assess the performance of all the digital banking modes with these three criteria on a regular basis. This requires constant feedback from consumers on these criteria and dynamic changes in the various digital banking modes to upgrade consumer experience across these criteria.

In the factors that we considered other than UTAUT2 model, risk is an important dimension. Among the various risk types, security and privacy risks are common across all bank customers. With a spate of issues that have arisen in the social networking sites and also instances of lost money from bank accounts, there is a need for banks to constantly educate the consumers on how to minimize security risk and also effectively communicate the efforts taken by the bank on maintaining the privacy of the account holders. Incidentally, in the multiple models tested using SEM for relating various factors to continuous usage intention, risk came up as the most important factor in the study.

Discriminant analysis to find out if the independent variables in the study can differentiate between public and private sector bank customers showed that with a reasonable accuracy, performance expectancy and social influence were factors that helped in this classification. While performance expectancy was a crucial indicator for private sector bank consumers, social influence was a key factor to identify the public sector consumers. The following paragraphs describe the implications for the public and private sector banks independently.

Public Sector Banks

Social influence and social risk are factors that have come out as relatively important for customers of public sector banks. Public sector banks (PuSB) can use this aspect effectively in marketing communication, which can be directed at those who have not

been regular users of digital banking and those who have not used it to enhance continuous usage. Social influence and risk can be used in the message structure. The mission of continued usage of digital banking can be achieved by targeting different consumer congregations that can emphasize on social influence using the social networking and physical networking opportunities.

Hedonic motivation deals with fun, enjoyment and entertainment. PuSB customers had relatively higher hedonic motivation compared to private sector bank customers. These 3 attributes can be used to gamify the digital banking experience. Several banks across the world have tried to make banking more fun compared to the seriousness attached to finances and banking as an activity. Gamification in the different media with which customers communicate and transact needs to be thought seriously to retain customers.

Cost is an important consideration for the PuSB customers. This indicates that public sector banks must be sensitive to the price sensitivity of its customers. In conjunction with the conformation of expectation, transparency in costs for various services becomes relevant. Lower or no costs for different services would help consumers continue with digital banking in these banks compared to private sector banks. In addition, on a regular basis, public sector banks need to understand the overall costs involved in the total digital banking experience. The total digital banking costs involve costs of subscribing to the service, the cost of internet services and the costs of transactions that need monitoring to provide an economical service. Since PuSB customers expect their banks to provide economical service, this could be a crucial element in ensuring continuous intention to use of digital banking. Another way to look at costs is to compare it with physical or branch banking and then make several services available digitally or convince consumers to switch to digital banking through such comparison.

Private Sector Banks

Private sector bank respondents scored relatively high on performance and effort expectancy. While performance expectancy and its implications are common across both the bank types, effort expectancy requires emphasis from private sector banks. Effort expectancy relates to easy learning, clear and logical processes, easy to use and skills to use digital banking. Continuous usage depends on ease of repeatability with minimal learning. Digital banking, therefore, must be tested for user-centric design of the interfaces so that consumers do not find the interaction cumbersome. In addition, the process of interaction needs to be intuitive and smooth with minimal steps. Private sector banks have been pioneers in introducing digital banking in India and therefore the expectation of consumers on increase in productivity, speed and at the same time the ease of use needs balancing.

Facilitating conditions relate to consumer resources, knowledge, compatibility with other technologies and help with digital banking. Private sector bank consumers would be sensitive to these conditions as evidenced in their 'strongly agree' response to statements relating to these conditions. Among these items, the key challenge for the private sector banks is to keep pace with change in technologies. Along with the changes in technology, assessing whether consumer resources and knowledge are in tune with the changes in technology and providing service support becomes crucial. This would require sufficient investment in technology related to digital banking and training of customer-facing employees on technology to answer consumer queries.

Hedonic Motivation and Performance Expectancy have been found to be important in their relationship to customers' continuance intention use of digital banking among private sector bank consumers. These 2 aspects - entertainment and productivity-

represent different aspects of the service. Customers expect both in a frequently used service, as service would become monotonous if there is no entertainment and fun surprisingly expected in every interaction. Bankers need to strive to make the interactions engaging through fun and productive means.

5.9 Conclusion

The main objective of this study was to understand the important drivers of bank customers on the continuance intention usage of digital banking which is post adoption or acceptance of digital channels. In line with various studies and reports like FIBAC2019, majority of the sample customers were familiar with mobile and other devices and 80 per cent of customers had knowledge about digital banking channels. Among various factors for the lower usage of digital banking, technology related issues, lack of information, absence of need and security threat were the primary reasons.

Performance Expectancy and Hedonic Motivation among the UTAUT2 constructs, Financial Cost, fulfilling the Customer Expectation and Reducing Risk are the significant drivers of continuance intention usage of digital banking. Performance Expectancy and Social Influence are the important variables that discriminate between the customers of public and private sector banks.

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APPENDIX 1

QUESTIONNAIRE

Dear Participants,

We are doing a study on **digital banking**. We thank you for accepting to be a participant in this study. The digital banking (in this study) includes *all forms of electronic transactions and services* like Internet banking, Mobile banking, Phone banking, etc., that **replace visit to a physical branch** for banking transactions.

1. General Details

Age: _____ Years Gender: [] Male [] Female
 Marital Status: Single [] Married [] Educational Qualification: _____
 (like PhD / Post Graduate / Undergraduate / any other)
 Income (Monthly): Less than Rs.50000 [] Rs.50001 – 100000 [] Rs.100001-150000 []
 Greater than Rs.150001

How long are you a customer of the Primary Bank Account: (No. of Years)
 Please specify how many hours (in a day) do you use internet? _____ Hours
 Your familiarity with mobiles and machines:
 (a) Familiar [] (b) Somewhat familiar [] (c) Not Familiar []

Your Expertise in doing digital transaction
 (a) Expert [] (b) Novice [] (c) Basic knowledge []

2. Please mention the types of transactions do you do:
 (a) _____ (b) _____ (c) _____

3. Please specify number of digital banking usage you do per month. _____

<i>Transaction type using</i>	<i>Put √ if you are using</i>	<i>Please mention year you started using this mode first time</i>	<i>Has your usage of this mode increased in the last three years. Please put Y or N for Yes or No. If no, go to the following question.</i>
internet banking for bill payment, money transfer (NEFT, IMPS)			
Cards (Debit and Credit cards, ATM, POS)			
Mobile Payments (UPI-BHIM, mobile banking)			
Mobile Wallet			
Aadhar based (Micro ATMs)			

3.a. If no, state the 3 important reasons for less or discontinuance of usage:

A _____ B. _____ C. _____

4. Your Ease of doing digital transactions

(a) Very easy [] (b) Moderately easy [] (c) Very difficult []

5. Before proceeding with your responses to the question below, Please specify the number of digital banking transaction that you have made in the past one month

None [] Less than 2 [] More than 2 []

A. Please record your response with \surd on your level of agreement for the digital banking transactions statements below as
5= strongly agree, 4= agree, 3=neutral, 2=disagree, and 1=strongly disagree

Statements	5	4	3	2	1
I find digital banking useful in my daily life					
Using digital banking helps me accomplish banking transactions faster than traditional banking.					
Using digital banking increases my productivity.					
Learning how to use digital banking is easy for me.					
Digital banking processes are clear and logical.					
I find digital banking easy to use.					
It is easy for me to become skillful at using digital banking.					
People who are important to me think that I should use digital banking.					
People who influence my behavior think that I should use digital banking.					
People whose opinions that I value prefer that I use digital banking.					
I have the resources necessary to use digital banking.					
I have the knowledge necessary to use digital banking.					
Digital banking is compatible with other technologies I use.					
I can get help from others when I have difficulties using digital banking.					
Digital banking is reasonably priced.					
Digital banking is a good value for the money.					
At the current price, digital banking provides a good value.					
Using digital banking is fun.					
Using digital banking is enjoyable.					
Using digital banking is very entertaining.					
The use of digital banking has become a habit for me.					
I am addicted to using digital banking.					
I must use digital banking.					

C. Register your level of agreement on financial cost to use digital banking

Statements	5	4	3	2	1
Prices of devices are reasonable and affordable for using digital banking					
Fee of internet connection is affordable to use digital banking					
E-banks charge lower transaction fees compared to traditional banking modes					
Service fees is acceptable					
Annual subscription for digital banking services is affordable					
I won't terminate services even if bank charges high fee					
I am able to save time by using digital banking services					
Continue using although need to pay high fees for digital banking					

D. Please record your level of agreement on risks associated with the use of digital banking

Statements	5	4	3	2	1
I worry about logging into digital banking (Security Risk1)					
When I send data using digital banking, I am worried that they will be intercepted and modified by unauthorized third parties like hackers (Security Risk2)					
I think digital banking could provide my personal information to other companies without my consent (Privacy Risk1)					
Digital banking increases the likelihood of receiving spam (Privacy Risk2)					
I think digital banking endangers my privacy by using my personal information without my permission (Privacy Risk3)					
I think using digital banking services worsens the image my friends and relations have of me (Social Risk1)					
Some people whose opinion I value think I am not acting correctly when I use digital banking services instead of brick and mortar branches (Social Risk2)					
My friends and relations think I am being imprudent when I use digital banking services instead of brick and mortar branches (Social Risk3)					
When I use digital banking I feel I waste a lot of time choosing the banking operation I need (Time Loss1)					
When I use digital banking I am concerned about having to wait too long for the banking operation to take effect, having to waste time on additional procedures, etc. (Time Loss2)					
When I use digital banking I am concerned about wasting too much time performing banking operations (Time Loss3)					

E. Please register your agreement on the following statement related to confirmation on your expectation

Statements	5	4	3	2	1
My experience with using digital banking was better than what I expected.					
The service level provided by digital banking was better than what I expected.					
Overall, most of my expectations from using digital banking were confirmed.					

G. How do you feel about your overall experience of Digital Banking use:

Very dissatisfied _____ Very Satisfied

Very displeased _____ Very pleased

Very frustrated _____ Very contented

Absolutely terrible _____ Absolutely delighted

H. Please record your level of agreement on Continuance Intention of Digital Banking

Statements	5	4	3	2	1
I intend to continue using digital banking rather than discontinue its use.					
My intentions are to continue using digital banking than use any alternative means (traditional banking).					
If I could, I would like to discontinue my use of digital banking					

Please specify any concerns while doing digital banking operations

1. _____
2. _____
3. _____