

CONTINUANCE INTENTION OF MOBILE BANKING AMONG USERS: AN
EXTENDED UNIFIED EXPECTED CONFIRMATION MODEL

A Research dissertation submitted to
Kathmandu University School of Management
in partial fulfillment of the requirement for the
Degree of Master of Philosophy (MPhil) in Management

Laxman Pokhrel

KU Registration Number: 024786-18

Kathmandu, Nepal

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DECLARATION

I, hereby, declare this dissertation entitled *Continuance Intention of Mobile Banking among users: Extended Unified Expected Confirmation Model* embodies the original research work that I carried out in partial fulfillment of the requirements for the degree of Master of Philosophy (MPhil) in marketing of Kathmandu University School of Management and that this dissertation has not been submitted for candidature for any other degree.

.....

Laxman Pokhrel

October, 2021

RECOMMENDATION

This is to certify that Mr. Laxman Pokhrel has completed his research work on *Continuance Intention of Mobile Banking among Users: An Extended Unified Expected Confirmation Model* under my supervision and that his dissertation embodies the result of his investigation conducted during the period he worked as an MPhil candidate of the School of Management. The dissertation is of the standard expected of a candidate for the degree of MPhil in management and has been prepared in the prescribed format of the School of Management. The dissertation is forwarded for evaluation.

Prof. Dr. Binod Krishna Shrestha
Research Dissertation Supervisor
Date:



APPROVAL

We have conducted the viva-voce examination of the dissertation *Continuance Intention of Mobile Banking among Users: An Extended Unified Expected Confirmation Model* by Laxman Pokhrel and found the dissertation to be original work of the candidate and written according to the prescribed format of the School of Management. We approve the dissertation as the partial fulfillment of the requirements for the degree of Master of Philosophy (MPhil) in Management.

Evaluation Committee

1. Prof. Dr. Devi P. Bedari, PhD
2. Prof. Dr. Binod Krishna Shrestha, PhD
3. Prof. Dr. Achyut Wagle, PhD
4. Prof. Dr. Mahendra Shrestha, PhD
5. Prof. Dr. Arhan Sthapit, PhD

Chair, Research Committee

Member, Research Committee

Member, Research Committee

Member, Research Committee

External Evaluator

October, 2021

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Laxman Pokhrel

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ABSTRACT

Mobile banking adoption is a continuous process. Mobile banking users examine and evaluate the services provided by the mobile banking, then decide to continuance behavior of mobile banking. After the adoption of mobile banking, the continuance intention is influenced by several factors such as satisfaction, perceived usefulness, and subjective norms, however, mobile service quality and risk perception of COVID-19 has been unexplored area in the unified model of IT continuance.

Drawing on the theoretical grounds of unified model of expected confirmation, SERVQUAL model, and protective motivation theory, this study examines the influence of risk perception of COVID-19 and mobile service quality on continuance intention of mobile banking. This study adopted a quantitative, descriptive, cross-sectional research methodology. Data were collected through 326 mobile banking users. Partial least squares structural equation model was applied to examine the relationships. Results confirmed a significant positive influence of satisfaction on continuance intention of mobile banking. This study found a significant positive impact of mobile service quality on satisfaction and confirmation. However, this study shows no significant influence of subjective norms, risk perception of COVID-19, perceived usefulness on continuance intention of mobile banking.

Based on the findings of this research, this study has provided the theoretical and practical implications for researchers and managers. The study has incorporated mobile service quality and risk perception of COVID-19 in an extended unified model of expected confirmation of mobile banking. Likewise, organizations could craft and

draft their organizational strategies so that they can gain a competitive advantage in the highly competitive mobile banking market of Nepal

Keywords: ECM, continuance intention, perceived usefulness, confirmation, satisfaction, subjective norms, risk perception of COVID-19, SEM

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ABBREVIATION

CI	Continuance Intention
CN	Confirmation/Disconfirmation
CFA	Confirmatory Factor Analysis
ECT	Expectancy Confirmation Theory
ECM	Expectation Confirmation Model
EFA	Exploratory Factor Analysis
E-S-QUAL	Electronic Service Quality
IS	Information System
MSQ	Mobile Service Quality
PLS-SEM	Partial Least Square Structural Equation Model
PMT	Protection Motivation Theory
PU	Perceived Usefulness
RP	Risk Perception of Covid-19
SERVQUAL	Multidimensional Measurement of Service Quality
ST	Satisfaction
TAM	Technology Acceptance Model
TPB	Theory of Planned Behavior
TRA	Theory of Reasoned Action
UTAUT	Unified Theory Acceptance and Use of Technology

CHAPTER I

INTRODUCTION

The unexpected outbreak of COVID-19 has not only impacted the global economy but also impacted the daily life of consumers. To contain the spread and the effect of Covid-19, several countries have taken precautionary measures such as social distancing (Baicu et al., 2020; Sreelakshmi & Prathap, 2020; Tonuchi, 2020). Since the COVID-19 virus infection is expected to continue until the invention or effective implementation of a vaccine, the adoption of mobile-based payment can provide a meaningful intervention to maintain social distancing (Sreelakshmi & Prathap, 2020). Moreover, Fu and Mishra (2020) have estimated the spread of COVID-19 and related government lockdown has led to an increased average daily download of roughly 5.2 to 6.3 million applications. Thus, it would be logical to study the adoption of mobile banking during COVID-19.

The investigation of mobile banking is not a new phenomenon. Mobile banking can be an initial and continuance adoption. The initial adoption has been extensively studied by several researchers (e.g. Baabdullah et al., 2019; Giovanis & Athanasopoulou, 2017; Khasawneh & Irshaidat, 2017; Koul & Eydgahi, 2017). The major theories applied in the technological adoptions are the theory of reasoned action (TRA), technology acceptance model (TAM), motivational model, the theory of planned behavior (TPB), innovation diffusion theory, social cognitive theories (Venkatesh et al., 2003). In contrast, the post-adoption or continuance intention of mobile banking has seldom been examined (Asnakew, 2020; Cao et al., 2018; Yuan et al., 2016; Zhou, 2011). Therefore, it is logical to undertake the continuance intention of mobile banking.

Although several theories have explained the continuance intention of mobile banking, Nabavi et al. (2016) stated that the information system confirmation model (ISCM), TAM, TPB, unified theory of acceptance and use of technology (UTAUT), IS Success Model, Flow theory and TRA are the major theoretical framework for studying the continuance intention of mobile banking, respectively. Since the ISCM is the seminal work in the continuance intention and various researchers applied it as the theoretical framework in mobile banking (e.g. Humbani & Wiese, 2019; Poromatikul et al., 2019; Rahi & Ghani, 2019; Sreelakshmi & Prathap, 2020; Tam et al., 2020), it would be reasonable to investigate continuance intention of mobile banking.

Drawing the theory of expectation disconfirmation theory (EDT), Bhattacharjee (2001a) developed the expectation disconfirmation model (EDM) or ISCM or ECM in post-adoption behavior. The EDM posits that disconfirmation (the difference between expectations and perceived performance) influences customer satisfaction. The satisfaction and perceived usefulness of the information system led to continuance intention of the system (Bhattacharjee, 2001a). The EDM model has been tested, revised, and expanded in different IS contexts (Bhattacharjee, 2001b; Bhattacharjee & Premkumar, 2004; Premkumar & Bhattacharjee, 2004; Bhattacharjee, 2008; Bhattacharjee et al., 2015). In the recent unified model of IT continuance, Bhattacharjee and Lin (2014) states that the continuance intention is directly influenced by subjective norms, perceived usefulness, and satisfaction and indirectly influenced by confirmation/disconfirmation through perceived usefulness and satisfaction. Most recently, Sreelakshmi and Sangeetha (2020) studied continuance adoption of mobile-based payment applying ECM and health-based model in the COVID-19 context. Numerous researchers have studied the continuance intention adoption including other variables with ECM such as ECM and self-

determination theory (Rahi & Ghani, 2019); ECM, perceived security, privacy, and trust (Susanto, Chang, & Ha, 2016); ECM and technology readiness (Humbani & Wiese, 2019); ECM, TAM and perceived value (Shang & Wu, 2017); ECM and cognitive absorption (Jumaan et al., 2020); ECM and UTAUT (Tam et al., 2020).

Despite the amount of work in the continuance adoption of mobile banking, the phenomenon remained an enigma and consistently evolving over the years. Thus, it is a rationale to include other independent variables to explain the continuance intention of mobile banking in the ECM.

Problem Statement

Mobile banking refers to banking activities which are conducted using mobile internet technologies (Chong, 2013). It is the application of a mobile device such as a Smartphone or tablet for convenient and quick access to banking services for customers from their mobile devices. The popular mobile banking services are balance inquiries, recent transaction details, e-recharges, and bill payment to utilities like Ncell, NTC, ADSL, NTC Landline, NTC postpaid cell phone bills (Nepal Bank Limited, 2020). With increasing access to the internet and smartphones, mobile banking services are gaining momentum in the Nepali market for the last two decades. The report of payment system oversight published by Nepal Rastra Bank states that the growth of mobile banking in the last four years is about 52, 90, 64, and 35 percent, respectively (Nepal Rastra Bank [NRB], 2020). In FY 2020/21, the number of mobile banking users increased by 35.46 percent and reached 11,306,797. Likewise, the monetary policy 2020–21 stressed digital banking and e-payment implements the Digital Nepal Framework (NRB, 2020). Despite the increasing number of mobile banking users every year, there were limited researches on the adoption of mobile banking available in Nepal context. Pokhrel, Adhikari, and Mishra

(2020) stated that perceived usefulness and perceived ease of use are two major determinants of mobile adoption among Nepali consumers. However, to the best knowledge of the researcher, there is limited or no research in post-adoption of mobile banking, which incorporates mobile service quality for continuance adoption of mobile banking.

Mobile banking service quality is a global consumer judgment of the quality and excellence of mobile content delivery in the context of mobile banking (Lin, 2013). The growing recognition of mobile service quality is seen as a critical construct in consumer behavior and service marketing. Consequently, considerable research attention has been generated in the area (Arcand et al., 2017; Jun & Palacios, 2016; Shaikh & Karjaluoto, 2015; Shankar et al., 2020; Tam & Oliveira, 2017). Despite the existing literature on service quality and e-service quality, very limited research work incorporated mobile service quality in the continuance intention of mobile banking. The competing model of post technology adoption IS success model of Delone and McLean (2003) recently introduced service quality as a factor for explaining satisfaction and continuance intention of technology adoption. However, ISCM does not have variables related to mobile service quality. Some researchers have reported service quality as the explanatory variables to explain satisfaction and continuance intention to IS (e.g. Ambalov, 2018; Franque et al., 2020; Petter & McLean, 2009).

To study continuance intention of mobile banking, this research has applied the theoretical support of ECM by Bhattacharjee (2001). The rationale of incorporating IS confirmation model are as follows. First, this theory was a representative study in the post-adoption of IS (Limayem & Cheung, 2008; Lin et al., 2005; Min & Shenghua, 2007; Thong et al., 2006; Vatanasombut et al., 2008). Second, the ECM

has been widely used to study post-adoption behavior in various web-based service contexts such as online banking and e-learning (Chiu & Wang, 2008; Limayem & Cheung, 2008; Roca et al., 2006; Limayem & Cheung, 2008; Min & Shenghua, 2007). To the best knowledge of the researcher, no researcher has incorporated mobile service quality as the independent variable of satisfaction and continuance intention of mobile banking.

With the unanticipated outburst of Covid-19 and social distancing, considerable research interest has drawn in the adoption of mobile banking during Covid-19 (Baicu et al., 2020; Sreelakshmi & Prathap, 2020; Tonuchi, 2020). Thus, it is logical to incorporate the risk perception of COVID-19 in the behavior intention of mobile banking. Risk perception of COVID-19 is conceptualized as contagion, which could make users of mobile banking fear being infected if they use traditional banking channels such as staying in the banking lines.

Studies have found a significant influence of risk perception of COVID-19 on behavior intention (Long & Khoi, 2020). On the post-adoption stage applying ECM and health-based model, Sreelakshmi and Sangeetha (2020) found that perceived health threats indirectly affect continuance intention through confirmation, perceived usefulness, and satisfaction. However, there is very limited or no study to examine the effect of risk perception of Covid-19 on continuance intention of mobile banking. Based on the stated research gap, this research has studied the continuance intention of mobile banking in the presence of mobile service quality and risk perception of Covid-19 variables. The fundamental question addressed in this study is:

- *What is the role of mobile service quality on satisfaction and confirmation, and how does risk perception of Covid-19 relate to continuance intention of mobile banking?*

Research Objectives

The objective of this study was to investigate the factors influencing the continuance intention of mobile banking. To achieve stated general objectives, the following specific objectives are formulated;

- 1) To examine the influence of mobile service quality on the satisfaction of mobile banking.
- 2) To examine the influence of mobile service quality on confirmation of mobile banking.
- 3) To examine the influence of risk perception of COVID-19 on continuance intention of mobile banking.

Organization of the Report

This chapter has been documented in five different chapters as outlined below: Chapter I includes the introduction part of the study. It comprises the background of the study, the problem statement, the research objectives, and the structure of the dissertation. Chapter II comprises the review of selected review e-service quality, mobile service quality, the theory of continuance intention, the relationship among variables, and proposed hypotheses with the conceptual framework. Related studies have been reviewed extensively before deducing the conceptual framework governing the present research.

Chapter III includes the research methodology employed in the study. It includes methodological approach and designs, sampling strategies, unit of analysis, data collection procedures, reliability and validity, and data analysis procedures applied in the present research. Chapter IV contains the demographic profile, descriptive statistics, measurement, and structural model. Finally, the key findings of

the study have been stated. Chapter V encompasses the summary of the study of the findings, discussion, implications, and critique of the study.

This chapter covers the review of literature in the field of mobile banking adoption. This section comprises the state of knowledge and current research on mobile banking, service quality, service quality, mobile banking service quality, and technology anxiety variables and ends with the proposal of the research model. The detailed description of the literature review section is given below:

The State Theories of Customer Adoption

The theoretical framework of the study suggests a synthesis of models based on TAM, TAM, TPB, CLAITL, IS Success Model, Flow Theory and TRA (Tobias et al., 2010). The theories and models to explain the consumer adoption of mobile banking and services have extended existing framework by adding some several variables that have been hypothesized to be important for consumer adoption.

Expectancy Confirmation Model (ECM)

The expectancy confirmation model (ECM) was proposed by Clark (1984). The ECM is based on the expectation-confirmation model in information systems and on the cognitive dissonance theory (Festinger, 1957). This theory argues that personal dissonance between expectations that users can create a psychological tension and cognitive dissonance that individuals attempt to relieve by adjusting their behavior to be consistent with their expectations. The ECM posits that when users' beliefs of an IS in the period prior to use

CHAPTER II

LITERATURE REVIEW

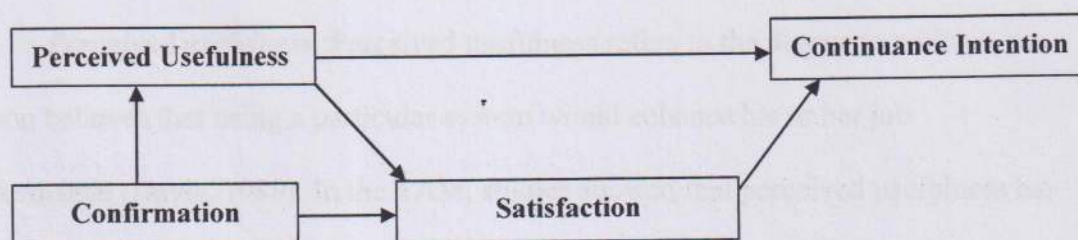
This chapter critically reviews the works of literature in the field of mobile banking adoption. This section comprises theories of continuance intention of mobile banking, service quality, e-service quality, mobile banking service quality, the relationship among variables, and ends with the proposal of the research model. The detailed elaboration of the literature review section is given below;

The Major Theories of Continuance Adoption

The major theoretical framework for studying the continuance intention of mobile banking are ISCM, TAM, TPB, UTAUT, IS Success Model, Flow theory and TRA (Nabavi et al., 2016). The theories and models to explain the continuance adoption in mobile banking, and studies have extended existing frameworks by adding one or several variables that have been hypothesized to be important for continuance adoption.

Expectancy Disconfirmation Model (EDM)

The expectation disconfirmation theory (EDT) was proposed by Oliver (1980). The EDT is rooted on the expectation–disconfirmation–satisfaction paradigm based on the cognitive dissonance theory of Festinger (1980). This theory argues that perceived discrepancies between intentions and behavior create a psychological tension or cognitive dissonance that individuals attempt to relieve by adjusting their behavior to be consistent with their intentions. The EDT posits that user expectations of an IS in the post-adoption stage.



(Bhattacharjee, 2001b)

Figure 1. Post acceptance model of IS continuance

The model has been tested and revised the model found that the confirmation of expectation has a significant influence on perceived usefulness (Bhattacharjee, 2001a, 2001b; Bhattacharjee & Premkumar, 2004; Bhattacharjee & Lin, 2014). The major dimensions of the construct are elaborated on below.

Continuance intention. Continuance Intention (CI) refers to the subjective tendency of a user to choose a certain technology or product (Bhattacharjee, 2001b). Continuance intention is a consumer's intent to continue using a service in the post-adoption phase, and it is different from intention to use the service during the pre-adoption phase (Montazemi & Qahri-Saremi, 2015; Zhou, 2013). Therefore, in mobile banking context, continuance intention refers to the extent to which an individual using a mobile phone to purchase products or services has developed conscious plans to continually use it in the future (Setterstrom et al., 2013).

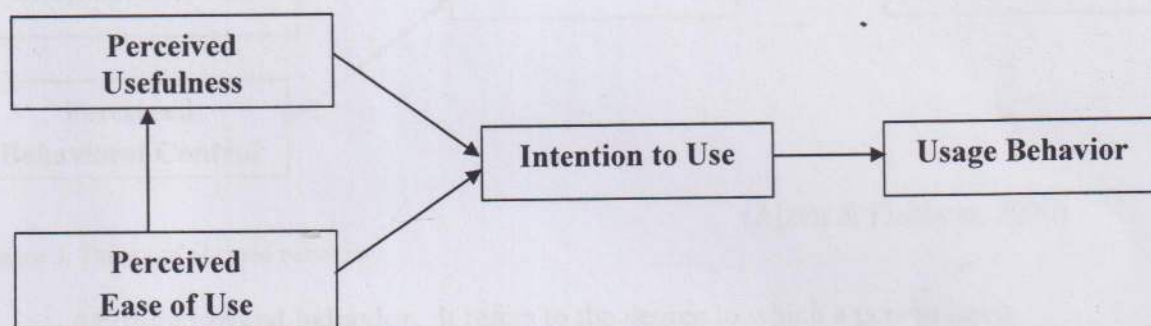
Satisfaction. Satisfaction refers to meeting the customer's expectation on the products and services (Oliver, 1980). In e-banking services context, e-satisfaction is users' gratification concerning their previous transaction or dealing experiences with a particular bank (Anderson & Srinivasan, 2003). In this research, satisfaction is a post evaluation of consumers' early experience with the service and is captured as a positive feeling (satisfaction), indifference, or negative feeling (dissatisfaction) (Bhattacharjee, 2001a).

Perceived usefulness. Perceived usefulness refers to the degree to which a person believes that using a particular system would enhance his or her job performance (Davis, 1989). In the TAM, studies showed that perceived usefulness has a significant positive influence on behavior intention of technology acceptance (Davis, 1989; Venkatesh & Davis, 2000; Venkatesh et al., 2003). In the Nepali online banking context, Pokhrel et al. (2020) found significant positive influences of perceived usefulness on behavior intention of mobile banking adoption.

Expectation of confirmation/disconfirmation. Bhattacharjee (2001a) defines confirmation as the users' perception of the congruence between the expectation of use and its actual performance. It refers to the realization of the expected benefits of IS use, while disconfirmation (perceived performance lagging expectation) refers to the failure to achieve expectation. Lower expectation leads to greater confirmation which in turn positively influences satisfaction and continuance intention. The opposite causes disconfirmation, dissatisfaction, and discontinuance of intention. In the mobile banking context, if the users of mobile banking perform better than users' expectations, then the post adoption expectations are confirmed. However, if mobile banking does not perform better than users' expectations, then the post adoption expectations of users are not confirmed. The ECM states that the users' confirmation of expectation has a positive influence on the perceived usefulness and the users' confirmation of expectation has a positive effect on satisfaction (Bhattacharjee 2001b).

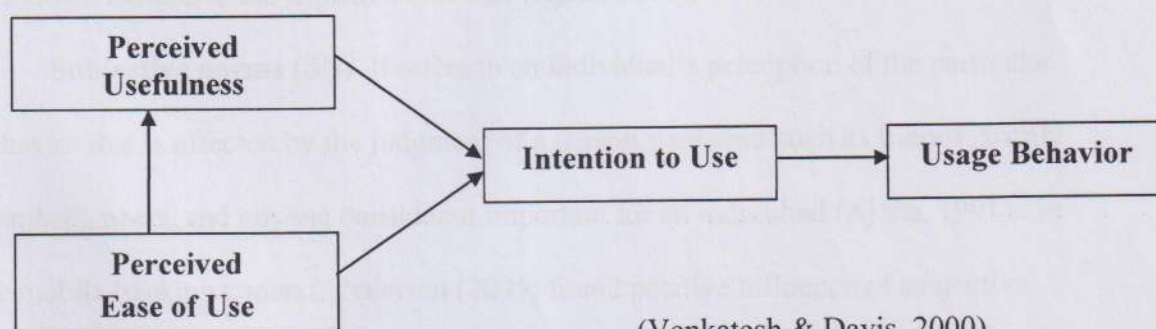
Technological Acceptance Model (TAM)

The TAM model is developed by Davis (1989). It explains the users' adoption or rejection of any new technologies. This model is the logical extension of the theory of reasoned action (TRA) (Ajzen & Fishbein, 1980). The behavior intention is explained by perceived usefulness and perceived ease of use. Perceived usefulness



refers to the degree to which a person believes that using a particular system would enhance his or her job performance (Davis, 1989). It is the perception of users' mobile banking that interprets the application of mobile banking to increase its performance.

Perceived ease of use refers to the degree to which a person believes that using a particular system would be free of effort (Davis, 1989).



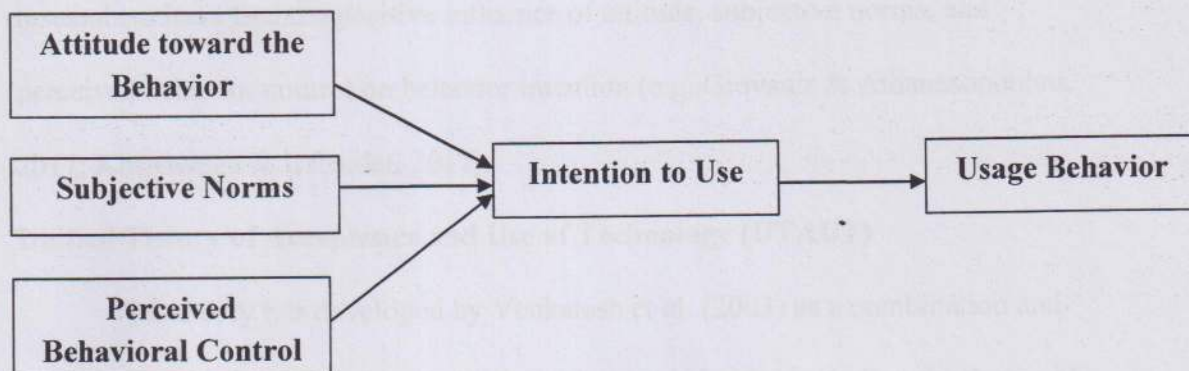
(Venkatesh & Davis, 2000)

Figure 2. Technology acceptance model

Theory of Planned Behavior (TPB)

The TPB is the augmentation of the theory of reasoned action (TRA). The TPB model was established to address several limitations of TRA (Ajzen, 1991; Ajzen & Fishbein, 2000). TPB posits that the more favorable attitudes towards

behaviors, subjective norms, and the greater extent of perceived behavioral control can lead to a greater intention to perform a behavior (Ajzen, 1991).



(Ajzen & Fishbein, 2000)

Figure 3. Theory of planned behavior

Attitude toward behavior. It refers to the degree to which a person has a favorable or unfavorable evaluation or appraisal of the behavior in question (Ajzen, 1991). Attitude is developed out of behavioral beliefs and subjective outcome evaluations. Behavioral beliefs are the beliefs that performing the behavior will provide a certain outcome. Subjective outcome evaluations consider the value the individual assigns to the expected outcome (Ajzen 1991).

Subjective norms (SN). It refers to an individual's perception of the particular behavior that is affected by the judgment of a person's referent such as friends, family members, peers, and anyone considered important for an individual (Ajzen, 1991). In the mobile banking context, Pedersen (2005) found positive influence of subjective norm on behavior intention to use mobile commerce.

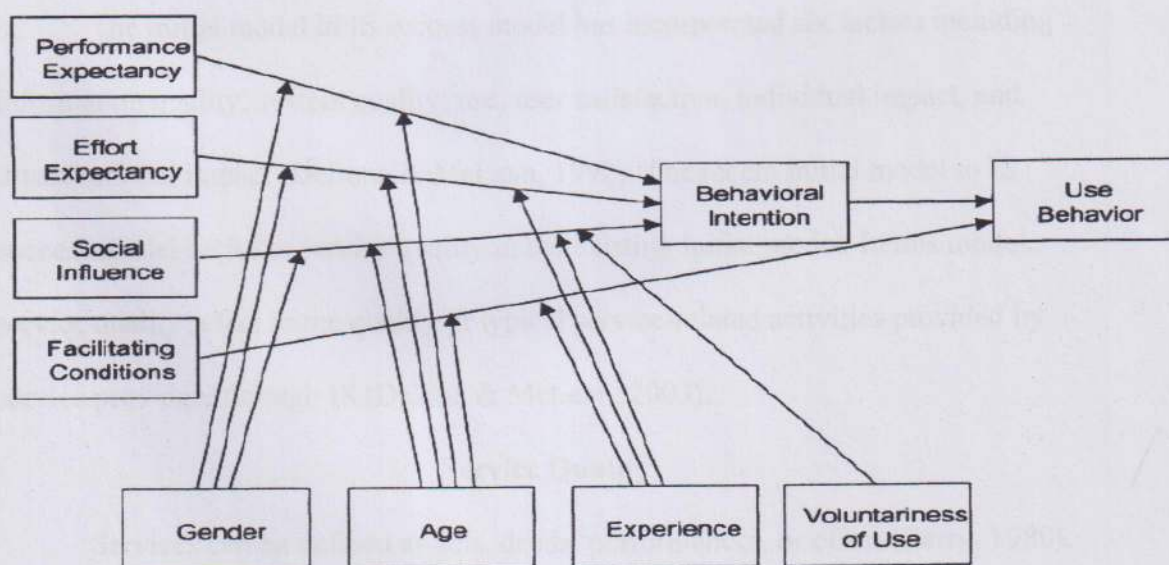
Perceived Behavioral Control (PBC). It refers to an individual's ability to perform a particular behavior (Ajzen, 1991). It can predict behaviors that describe a person's perception of the ease or difficulty of performing a certain behavior of interest (Ajzen, 1991; Ajzen & Fishbein, 2000).

Behavioral Intention (BI). It refers to the amount of effort an individual is willing to exert to perform the behavior in question (Ajzen, 1991). Behavior intention

is the outcome of attitude towards behavior, subjective norms, and perceived behavioral control (Ajzen, 1991). In the context of mobile banking, numerous researchers have found a positive influence of attitude, subjective norms, and perceived behavior control on behavior intention (e.g. Giovanis & Athanasopoulou, 2017; Khasawneh & Irshaidat, 2017).

Unified Theory of Acceptance and Use of Technology (UTAUT)

This theory has developed by Venkatesh et al. (2003) as a combination and consolidation of eight variables to explain IS usage behavior including the theory of reasoned action, technology acceptance model, motivational model, the theory of planned behavior, a combined theory of planned behavior/technology acceptance model, a model of PC utilization, innovation diffusion theory, and social cognitive theory. Venkatesh et al. (2003) explained the behavior intention of IS with the independent variables such as performance expectancy, effort expectancy, social influence, and facilitating conditions and moderating variables such as gender, age, experience, and voluntariness of use.

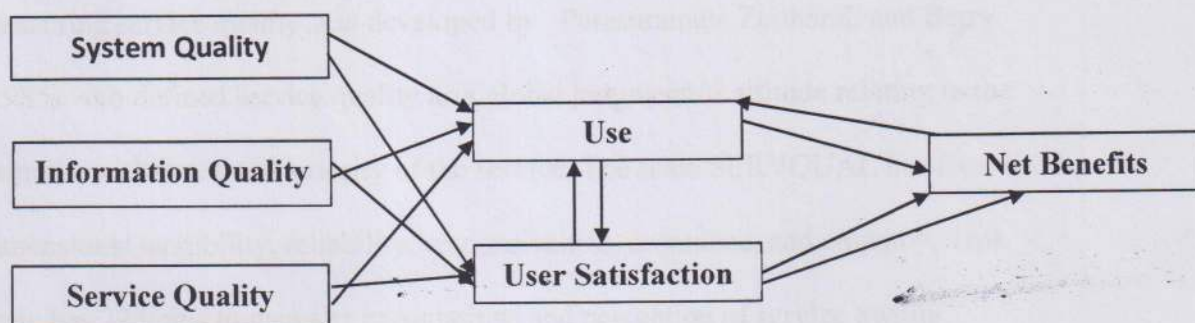


(Venkatesh et al., 2003)

Figure 4. Unified theory of acceptance and use of technology

In the context of mobile banking adoption, Tan and Lau (2016) found that all three antecedents (PE, EE, and SI) have a positive significant effect on BI on mobile banking uses. Baabdullah et al. (2019) investigated factors affecting behavior intention to use mobile banking in various Gulf counties. Researchers found performance expectancy, price value, facilitating conditions, hedonic motivation, habit, system quality, and service quality have significant influence on the actual use of mobile banking of Saudi.

Information System (IS) Success Model



(DeLone & Mclean, 2003)

Figure 5. IS success model

The initial model to IS success model has incorporated six factors including information quality, system quality, use, user satisfaction, individual impact, and organizational impact (DeLone & McLean, 1992). The recent initial model to IS success model includes service quality in the existing initial model. In this model, service quality refers to the quality of typical service-related activities provided by service providers through IS (DeLone & McLean, 2003).

Service Quality

Services can be defined as acts, deeds, performances, or effort (Berry, 1980). The major characteristics of services are intangibility, heterogeneity, inseparability, and perishability. Parasuraman et al. (1988) defined dimensions of service quality as

tangibles, reliability, responsiveness, assurance, and empathy. Parasuraman et al. (1985, 1988) defined service quality is determined by the differences between customer's expectations of services provider's performance and their evaluation of the services they received.

Measurement of traditional service quality. Service quality has several measurements to measure service quality. The major scale to measure service quality is SERVQUAL and SERVPERF scale. They are elaborated below;

Traditional service quality: SERVQUAL Scale. The seminal work of measuring service quality was developed by Parasuraman, Zeithaml, and Berry (1985) who defined service quality as a global judgment or attitude relating to the overall excellence or superiority of the service. The scale SERVQUAL has five dimensions: tangibility, reliability, responsiveness, assurance, and empathy. This scale has 22 items to measure expectations and perception of service quality.

Traditional Service Quality: SERVPERF Scale

The second most popular measure of service quality was developed by Cronin and Taylor (1992) who claimed the SERVPERF model is more reliable and valid than the SERVQUAL model. This model uses performance measure which applies the same dimensions SERVQUAL: tangibility, reliability, responsiveness, assurance, and empathy. It has 22 items measuring customer perceptions of service delivery that are adequate to measure service quality.

Electronic Service Quality

With the development e-services, the concept of service quality has extended its scope in different service sectors such as e-governance, e-payment and e-commerce. E-services refer to deeds, efforts, or performances whose delivery is mediated by information technology (Rowley, 2006). It is the collection of the information

provision and system support, the logistic transportation of service and the trace and exchange of information. To provide excellent e-service quality, marketers must first understand how consumers perceive and evaluate online consumers' services (Zeithaml, 2002). E-service quality is distinct from service quality in the brick-and-mortar retail setting (Blut et al., 2015).

E-service quality is the extent to which a website facilitates efficient and effective shopping, purchasing, and delivery of products and services (Zeithaml, 2002). Santos (2003) defines e-service quality as the overall evaluation by consumers of the caliber and excellence of the e-service offering in the virtual marketplace. Similarly, Wolfinbarger and Gilly (2003) define E-SQ as the perceived quality derived from the beginning to the end of the transaction, including information search, website navigation, ordering, customer service interactions, and delivery and satisfaction with the ordered product. Thus, the concept of e-service quality has been defined to include the provision of superior customer experience in the pre-transaction, transaction, and post-transaction cues in an e-commerce environment (Zeithaml, 2002; Santos, 2003).

Measurement of Electronic Service Quality

Measuring service quality at offline services differs from online services (electronic services). E-S-QUAL Scale, E-RecS-QUAL Scale, eTailQ Scale, eTrans Qual Scale are some scale of measuring service quality in electronic channels. The major E-service quality scales from previous researchers have been elaborated below;

Electronic Service Quality (e-SQ)

This scale was proposed by Parasuraman, Zeithamal and Malhotra (2000) which aimed to study the expectations of customers and service performance evaluations from different aspects related to service quality. After extensively

examining the previous literature on web site features and service quality, Zeithaml (2000) classify them into 11 e-SQ dimensions. The e-SQ dimensions are reliability, responsibility, access, flexibility, ease of navigation, efficiency, assurance/trust, security, price knowledge, site aesthetics, and customization/personalization. As a result of two stages of empirical data collection showed that two different scales for capturing electronic service quality are necessary, Parasuraman et al. (2005) confirmed that there are two scale core e-SQ and recovery e-SQ. The core e-SQ includes four dimensions as efficiency, system availability, fulfillment, and privacy and the recovery e-SQ comprises three dimensions such as responsiveness, compensation, contact. The first is measured with an 11 items scale and the latter is measured with a 22 items scale.

E-S-QUAL Scale (Core e-SQ)

This scale is used to measure service quality delivered by Web sites on which customers shop online. This iterative process resulted in the final E-S-QUAL Scale which includes four dimensions as efficiency, system availability, fulfillment, and privacy and the four dimensions are measured with a 22 items scale. Parasuraman, Zeithaml and Malhotra (2005) defined E-S-QUAL dimensions as follow;

Efficiency. It is defined as the ease and speed of accessing and using the site.

Fulfillment. It is defined as the extent to which the site's promises about order delivery and item availability are fulfilled.

System availability. It is defined as the correct technical functioning of the site.

Privacy. It is defined as the degree to which the site is safe and protects customer information.

E-Rec S-QUAL Scale (E-recovery Service Quality). This scale applies to measure to customers who had non-routine encounters with the sites. It measures e-QS perceived by online consumers who experienced service failures and used the return and/or cancellation services of electronic retailers. The three dimensions of responsiveness, compensation, and contact consisting of 11 items are used to measure e-recovery service quality. Parasuraman, Zeithaml, and Malhotra (2005) defined the dimensions as follow:

Responsiveness. It is defined as the effective handling of problems and returns through the site.

Compensation. It is defined as the degree to which the site compensates customers for problems.

Contact. It is defined as the availability of assistance through telephone or online representatives.

The above-stated scales were tested by Parasuraman et al. (2005) applying two online websites Walmart.com and Amazon.com and recommended to use in measuring e-service quality, claiming to have higher reliability, validity, and predictive ability.

Electronic Service Quality: eTailQ Scale

This scale was developed by Wolfinbarger and Gilly (2003) to measure e-service quality. They found E-service quality in the context in internet retailing and found 14 items of four dimensions which include fulfillment/ reliability, website design, privacy/security, and customer service. Wolfinbarger and Gilly (2003) defined the dimensions in the following way;

Website Design. It involves the expected attributes associated with design and items dealing with personalization.

Reliability. It involves an accurate representation of the product, on-time delivery, and accurate orders.

Privacy/security. It is the feeling of safety and trust of the site.

Customer Service. It is the combination of interest in solving problems, the willingness of personnel to help, and prompt answers to inquiries.

Electronic Service Quality: Web Qual Scale

This scale was developed by Loiacono et al. (2007) from the review of existing literature in e-services. They found 12 dimensions and group them into four sub-dimensions including *usefulness* comprises information fit-to-task, interactivity, trust, response time, *ease of use* comprises ease of understanding, intuitive operations, *a complementary relationship* comprises a consistent image, online completeness and better than alternative channels, and *entertainment* includes visual appeal, innovativeness, flow, emotional appeal.

Electronic Service Quality: eTrans Qual Scale

This scale was developed by Bauer et al. (2006) to measure transaction processing for electronic services which has all stages of electronic service delivery. They identified five qualitative dimensions including responsiveness, reliability, process, functionality/design, and enjoyment as a result of exploratory and confirmatory factors analysis.

Although there are several e-QS scales to measure electronic service quality including WebQual (Loiacono et al., 2007), SITEQUAL (Yoo & Donthu, 2001), e-SERVQUAL (Zeithaml et al., 2002), e-TailQ (Wolfinbarger & Gilly, 2003), E-SQual (Parasuraman et al., 2005), eTransQual (Bauer et al., 2006), and Pesq (Cristobal et al., 2007), the scale of Wolfinbarger and Gilly (2003) and Parasuraman et al. (2005) have

received significant attention in academic literature to measure the perceived service quality in online business.

Operationalization of Constructs

Based on the reviews of individual constructs and theories, this research operationalized the variables based on the research was stated in the table below;

Table 1

Operationalization of Constructs

Construct	Operational Definition	Source of Measurement
Continuance Intention	It is the users' intention to continue using mobile banking.	Bhattacharjee (2001)
Satisfaction	It is the users' affect with feelings about prior mobile banking use.	Bhattacharjee (2001)
Perceived Usefulness	It is the users' perception of the expected benefits of mobile banking use.	Davis (1989)
Confirmation	It is the users' perception of the congruence between expectation of mobile banking use and its actual performance.	Bhattacharjee and Premkumar (2004)
Subjective Norm	It is the extent to which subjects believed that their coworkers, supervisors, and clients believed that they should use mobile banking.	Venkatesh et al. (2000)
Mobile Service Quality	It refers to the efficiency, fulfillment, system availability and privacy of mobile banking.	Parasuraman et al. (2005)
Risk Perception of Covid-19	It refers to likelihood of becoming infected with corona virus at cognitive, emotional and temporal-spatial level.	Dryhurst et al. (2020)

Relationship between variables and Hypotheses Formulation

Perceived Usefulness and Continuance Intention

In the mobile banking context, perceived usefulness refers to the degree to which an individual believes that using mobile banking would enhance his or her job

performance. In the pre-adoption context, several researchers found a significant positive effect of perceived usefulness on behavior intention of technology acceptance (Davis, 1989; Taylor & Todd, 1995; Venkatesh & Davis, 2000; Venkatesh et al., 2003). In the Nepali context, Pokhrel et al. (2020) found a significant positive effect of perceived usefulness on behavior intention of mobile banking adoption. In contrast, in the post adoption context, researchers found that perceived usefulness has a significant positive effect on IS continuance intention (Bhattacharjee, 2001(a, b); Bhattacharjee & Premkumar, 2004; Bhattacharjee, 2008; Bhattacharjee & Lin, 2014; Bhattacharjee et al., 2015; Premkumar & Bhattacharjee, 2004). Likewise, in the mobile banking context, perceived usefulness has a significant positive effect on mobile banking continuance intention (Jumaan et al., 2020; Yuan et al., 2016). Thus, considering the previous studies, this research assumes that perceived usefulness of mobile banking can lead to continuance usage of mobile banking among users. Based on the empirical findings, this paper hypothesized that:

H1. Perceived usefulness positively influences continuance intention of mobile banking.

Satisfaction and Continuance Intention

In the expectation confirmation model (ECM), during post adoption context, researchers found a significant positive effect satisfaction on IS continuance intention (Bhattacharjee, 2001a, 2001b; Bhattacharjee & Premkumar, 2004; Bhattacharjee, 2008; Bhattacharjee & Lin; 2014; Bhattacharjee et al., 2015; Premkumar & Bhattacharjee, 2004). In the mobile banking context, researchers found that customers' satisfaction positively affect continue intention of mobile banking usage (Cao et al., 2018; Jumaan, Hashim, & Al-Ghazali, 2020; Yuan et al., 2016). Based on the findings of previous studies, this paper expects that satisfaction of mobile banking

would lead to continuance intention of mobile banking. Thus, the paper proposed the hypothesis.

H2. Satisfaction positively influences continuance intention of mobile banking.

Confirmation of Expectations, Perceived Usefulness and Satisfaction

Researchers found a significant effect of expectation of confirmation on satisfaction and perceived usefulness (Bhattacharjee, 2001a, 2001b; Bhattacharjee & Premkumar, 2004; Premkumar & Bhattacharjee, 2008; Bhattacharjee & Lin, 2014; Bhattacharjee et al., 2015). Moreover, in Meta-analyses, Ambalov (2018) and Franque et al. (2020) found that confirmation of expectation significantly affects satisfaction. It implies that confirmation of mobile banking expectation and usefulness can lead to satisfaction among mobile banking users. Therefore, this paper proposed that:

H3. Confirmation positively influences satisfaction.

H4. Confirmation positively influences perceived usefulness.

Subjective Norm and Continuance Intention

Subjective norms refer to an individual's perception of the particular behavior that is affected by the judgment of a person's referents such as friends, family members, peers, and anyone considered important for an individual (Ajzen & Fishbein, 2000). In the decomposing theory of planned behavior, the study is formed as the individual's normative belief concerning a particular referent weighted by the motivation to comply with that referent (Taylor & Todd, 1995). In the technology acceptance model, it refers to the person's perception that most people who are important to him think he should or should not perform the behavior in questions (Vanatesh et al., 2003). The stated theories applied subjective norms in the pre-adoption context and found a positive effect of subjective norms on behavior intention

(Ajzen, & Fishbein, 2000; Taylor & Todd, 1995; Venkatesh et al., 2003). Results suggest that using mobile banking, individual's intent to use mobile banking. In the post adoption context, subjective norms imply that users are to develop positive intentions toward IT continuance if they believe that their key referent others will approve of their continued IT usage, and negative intentions if they expect disapproval from these referents (Bhattacharjee & Lin, 2014). Several studies confirm that subjective norms have a significant positive effect on IS continuance intention (Bhattacharjee & Lin, 2014; Hsu et al., 2014). Thus, this paper assumes that the referents influence continuing using mobile banking and hypothesize that

H5: Subjective norm positively influences continuance intention of mobile banking.

Risk Perception of COVID-19 and Continuance Intention

In the previous studies indicate a negative effect of perceived risk on consumers' intention to adopt internet banking (Deb & David, 2014; Martins et al., 2014). In the mobile banking context, researchers (e.g. Giovanis et al., 2019; Wu & Wang, 2005) found a statistically significant relationship between perceived risk and intention to use mobile banking. However, this perceived risk cannot capture the current global health crises as an explanatory variable for intention or continuance intention of mobile banking. Therefore, risk perception of COVID-19 is incorporated as a variable to explain continuance intention of mobile banking. The theoretical base for the study is protection motivation theory (PMT) developed by Rogers (1975). This theory posits those individuals are motivated to react in a self-protective way toward a perceived health threat. This paper conceptualizes risk perception of COVID-19 as contagion, which makes users of mobile banking fear of being infected if they use traditional banking channels such as staying in the banking lines. In diverse contexts, researchers found a significant relationship between risk perception of COVID-19 and

behavior intention (e.g. Al-Marroof et al., 2020; Long & Khoi, 2020). To the best knowledge of research, limited papers have integrated the variable in the post adoption context. This paper assumes that the users of mobile banking would be continued using mobile banking if they are fearful of being infected with COVID-19. Thus, it is hypothesized that;

• **H6.** Risk perception of COVID-19 positively influence continuance intention of mobile banking.

Mobile Service Quality

With the phenomenal growth of e-services, service quality has been redefined as the e-service quality in the recent days because it is distinct from service quality in the brick-and-mortar retail setting (Blut et al., 2015). E-service quality (ESQ) is the extent to which a website facilitates efficient and effective shopping, purchasing, and delivery of products and services (Zeithaml, 2002). Ho and Lin (2010) found five dimensions for measuring e-service quality of internet banking including customer service, web design, assurance, preferential treatment, and information provision in Taiwan. However, Huang et al. (2015) stated that the characteristics of the mobile channel differ markedly from those of e-service channels, thus it requires further conceptualization of mobile service quality. Mobile banking service quality is a global consumer judgment of the quality and excellence of mobile content delivery in the context of mobile banking (Lin, 2013). It is difficult to define good mobile service quality because it is complex when we think about everyone's perception: the same service perception differentiates by two people (Min & Khoon, 2014). Shaikh and Karjaluoto (2015) enlisted the main services offered through mobile banking are financial services such as bill payments, peer to peer payments, fund transfers, remittance, shopping and donation, mobile balance recharge, and non-financial

services such as balance enquiry, mini-bank statement, PIN change, checkbook request, due alerts for payments and locate ATMS.

Due to the continuous development in online service quality from both theoretical and empirical perspectives, there is no service quality scale for mobile banking service quality in the existing literature (Arcand et al., 2017). It is evident that mobile service quality scale is under development and literature also suggests that if there is no context-specific instrument available to measure service quality, generic scales need to be applied to examine service quality in that particular context (Shankar et al., 2019). Therefore, this research has used generic the E-S-QUAL scale to measure mobile service quality. The scale was found to be reliable and valid in the previous study (Akinici et al., 2010). It is found consistently in various e-services contexts, including online retailing (Rafiq et al., 2012) and online banking (Khan et al., 2009) and mobile banking (Shankar et al., 2019). The dimensions of mobile service quality used in the research are developed and validated by Parasuraman et al. (2005). In this paper, the dimensions of E-SQUAL are described below;

Efficiency: It refers to the ease and speed of accessing and using the mobile banking application.

Fulfillment: It refers to the extent to which mobile banking application promises about order delivery and item availability is fulfilled.

System availability: It refers to the correct technical functions of mobile banking application.

Privacy: It refers to the degree of security and protection provided by the mobile banking application.

Mobile Service Quality and Satisfaction

The relationship between service quality and satisfaction is first seen in the research of Parasuraman et al. (1985a). It implies that when customers receive good service quality from mobile banking, they are satisfied with the mobile banking and continue using the services. In the e-service context, several researchers have found a significant positive relationship between E-service quality and satisfaction (Iqbal et al., 2018; Khan et al., 2019; Rodríguez et al., 2020; Wolfinbarger & Gilly, 2003). However, limited researchers examined the relationship between mobile service quality and satisfaction in the mobile banking context. The theoretical base for the study is expectancy disconfirmation theory (EDT) developed by Oliver (1980). This theory asserts that satisfaction is seen to be an affective reciprocation and can be attained when a customer is confident that their expectations are met from e-service encounter (Chang & Chen, 2009). When consumers use mobile banking, they evaluate the quality of services including efficiency, fulfillment, system availability and privacy. They perceive the services of mobile banking, as expected and they are to become satisfied users of mobile banking. Based on the assumption, it is hypothesized that:

H7: Mobile service quality positively influences satisfaction.

Mobile Service Quality and Confirmation

The Meta-analysis of numerous researchers presented in Table 1 found that service quality significantly effects on confirmation (Franque et al., 2020). Customers perceive mobile service as a predictor of confirming the mobile banking service quality. It is based on the model of E-S-QUAL that posits customers evaluate e-services provided by mobile banking if they find the e-services, they will confirm the service provided by mobile banking users. This paper assumes that mobile banking

users tend to confirm their belief if they received good mobile service quality. Based on the assumption, it is hypothesized that:

H8: Mobile service quality positively influences the confirmation.

Control Variables

In this research, research did not control any variables because continuance intention is more related with the evaluation of services rather than any other factors.

The study is consistent with previous researchers (e.g. Poromatikul et al., 2019; Rahi & Ghani, 2019; Shang & Wu 2017; Tam et al., 2020; Yu et al., 2018).

Table 2

Meta-Analysis of the Proposed Model

Independent Variables	Dependent Variables	Total study	Σ Sample	AVG of CC	95% Confidence Interval (Low-High)	
SQ	CON	4	1,244	0.339	0.282	0.394
SQ	SAT	5	2,608	0.296	0.058	0.151
SQ	SAT	3	366	0.21	0.00	0.43
PU	CI	41	13,686	0.285	0.265	0.297
SAT	CI	74	29,220	0.416	0.399	0.419
SN	CI	11	4,379	0.416	0.150	0.280
PU	SAT	46	18,018	0.248	0.217	0.248
CON	SAT	35	10,918	0.431	0.395	0.427
CON	PU	33	10,168	0.504	0.492	0.522
CON	PU	-	-	0.486	0.432	0.539
CON	SAT	-	-	0.574	0.526	0.628
PU	SAT	-	-	0.500	0.442	0.558
PU	CI	-	-	0.565	0.523	0.606
SAT	CI	-	-	0.565	0.509	0.620

Note. (AVG of cc= Average of Correlation Coefficient; SQ= Service Quality; CON= Confirmation; SAT= Satisfaction; PU= Perceived Usefulness; CI= Continuance intention; SN= Subjective Norm) (Source: Franque et al., 2020; Ambalov, 2018; Petter, & McLean, 2009)

The synthesis table of Meta-analysis further justifies that satisfaction, perceived usefulness and subjective norms have a significant association with

continuance intention. Likewise, confirmation has a significant positive effect on perceived usefulness and service quality has a significant effect on confirmation and customer satisfaction. Based on the supports of the tabulated results and theoretical background, and this research proposed the following conceptual framework.

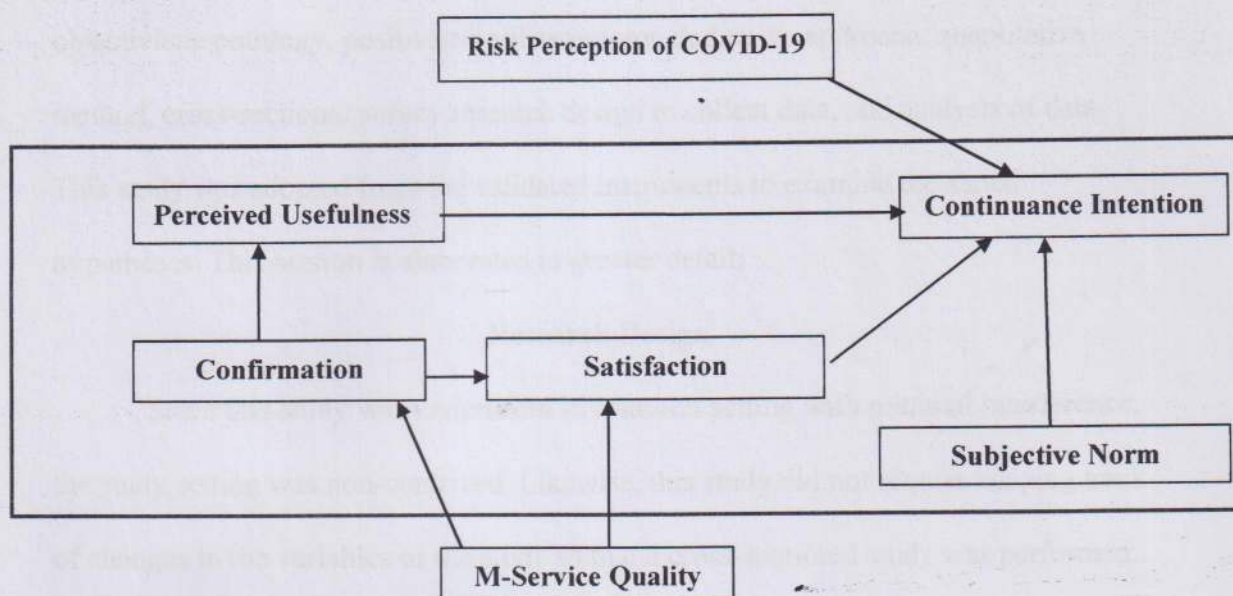


Figure 6. Conceptual framework of continuance intention of mobile banking

After reviewing the existing literature on the continuance intention of mobile banking, this research found that mobile service quality was not incorporated in the traditional continuance of mobile banking. Based on the research gap, this research proposed the stated conceptual framework for the study. This research problem was addressed with the research objectives, research questions, and appropriate research methodology.

CHAPTER III

RESEARCH METHODOLOGY

To achieve the above-stated research objectives, the researcher adopted objectivistic ontology, positivistic epistemology, deductive approach, quantitative method, cross-sectional survey research design to collect data, and analysis of data. This study was adopted from the validated instruments to examine the stated hypotheses. This section is elaborated in greater detail;

Research Design

Since this study was undertaken in a natural setting with minimal interference, the study setting was non-contrived. Likewise, this study did not require keeping track of changes in the variables of the study so that a cross-sectional study was performed. Mobile banking users were requested to once for filling the questionnaire because it was sufficient to capture the continuance intention and other predictors of the variable. It is consistent with the previous studies (e.g. Poromatikul et al., 2019; Rahi & Ghani, 2019; Sreelakshmi, & Prathap, 2020)

Population, Sampling, and Sample Size

This research collected data from the mobile banking users who were using mobile banking for at least 3 months. The rationale of choosing users of mobile banking is continuance intention of mobile banking cannot be explained by the non-users. The population for the study was all the mobile banking users of Nepal, however, the active list or sampling frame of mobile banking were not available or institutions were not ready to share the customer's details because of the privacy issue. Due to the lack of a sampling frame and active list of mobile banking users, this research applied convenience sampling to collect data for the study. Several previous

researchers have applied convenience sampling in different continuance intention studies (e.g. Humbani, & Wiese, 2019; Poromatikul et al., 2019; Rahi & Ghani, 2019; Yuan et al., 2016; Yu et al., 2018).

To achieve the stated research objectives, the unit of analysis was individual users of mobile banking. The respondents filled the questionnaire as mobile banking users despite their different backgrounds or orientations.

This paper applied the sample size standard proposed by Hair et al. (2016) who assert that the sample size should be five (minimum) to ten times the items that are used to perform advanced multivariate tools such as the structural equation model. Following both standards, the sample size for the study is 326 to capture the 40 items of six constructs. It is consistent with the sample size of previous studies (e.g. Humbani & Wiese, 2019; Poromatikul et al., 2019; Rahi & Ghani, 2019). This paper also applied artificial neural networking, in which the sample size should not be less than 50 times the number of modifiable parameters for neural network (Alwosheel et al., 2018). This paper has 6 parameters and the minimum sample size required is 300.

Measures or Instruments

All six constructs were measured on a 5 point Likert scale (1=“strongly disagree”, 5= “strongly agree”). The detailed descriptions of scale are described as follow;

Mobile Service Quality Scale

This measurement was adopted from Shankar et al. (2019) which is contextualized based on a generic E-S-QUAL scale comprising 21 items under four constructs including efficiency, system availability, fulfillment, and privacy. The coefficient alpha was reported ranging from 0.83 to 0.94. *Efficiency* was operationalized using eight items. The sample item includes “Mobile banking

applications make it easy to find what I need.” *System availability* was operationalized applying four items. The sample item includes “Mobile banking applications are always available to provide services.” *Fulfillment* was operationalized applying seven items. The sample item includes “Mobile banking applications make accurate promises about banking services.” *Privacy* was operationalized applying three items. The sample item includes “Mobile banking applications to protect information about my banking card.” Shankar et al. (2019) reported that the generic E-S-QUAL scale ensures the reliability and validity in the mobile banking context.

The Unified Expected Confirmation Model Scale

This construct was measured by the five dimensions with 15 items.

Continuance intention was measured by 3 items. The sample item includes: “I want to continue using mobile banking rather discontinue its use.” Continuance intention was adopted by Bhattacharjee (2001). *Satisfaction* was measured by 3 items and adopted by Bhattacharjee (2001). The sample item included: “I am satisfied with my decision to use mobile banking.” *Perceived usefulness* was measured by 3 items. The sample item includes: “If I wanted it I could use the Mobile Banking.” Perceived usefulness was adopted by Davis (1989). *Confirmation* was measured by 3 items. The sample item includes: “If I wanted it I could use mobile banking.” Confirmation was adopted by Bhattacharjee and Premkumar (2004). *Subjective norms* were measured by 3 items. The sample item included: “My supervisors and colleagues think that I should use mobile banking.” Subjective norm was adopted from Venkatesh and Davis (2000).

Risk Perception of COVID-19 Scale

It was adapted from Dryhurst et al. (2020). The sample item includes: “I will probably get sick with the corona virus/ COVID-19”. Dryhurst et al. (2020) reported that Cronbach’s alpha value across countries is 0.72 and per country is 0.60-0.82. It

was measured by 3 items. During pre-testing and pilot testing, respondents could not understand 3 items of this scale out of 6 items, therefore, 3 items were dropped from the study.

Pilot Testing

The paper pretested the questionnaire with expert of a Marketing, English and Potential respondent. Based on the feedback provided, the revised questionnaire was pilot tested. The pilot test was performed on 40 potential respondents. Apart from filling the questionnaire, respondents were requested to provide feedback on the completion time and the ease of understanding. The individual constructs scored over Cronbach's alpha value 0.60 (Pallant, 2020). The individual score of the measurements were over threshold values. Thus, this research further collected data from the respondents to test the stated hypotheses.

Table 2

Reliability of Measurement

Variables	Number of Item	Cronbach's Alpha
1. Continuance Intention	3	0.82
2. Perceived Usefulness	4	0.76
3. Satisfaction	3	0.82
4. Subjective Norms	3	0.86
5. Confirmation	3	0.81
6. Risk Perception of Covid-19	3	0.79
7. Mobile Service Quality	18	0.89

Data Collection Procedures

After pilot testing, the questionnaire was distributed through printed questionnaire and electronic questionnaires. The questionnaire was requested to fill by users of mobile banking. The purpose, process, benefits, and risks of the study were

explained to participants. Participants were informed that their participation in the study was completely voluntary and that they had the right to withdraw from participation at any time for any reason. Participants were assured about the confidentiality of the data. Data were collected from the mobile banking users from 2020 December to 2021 January. Out of 450 distributed questionnaires, 350 responses were returned and 326 of them were used for further statistical operation.

Demographic Profile of the Respondents

A total of 326 respondents participated in the research and they were using mobile banking services. The following table presents the details of respondents' profile.

Table 1

Demographic Profile

Characteristics	Frequency	Percentage
Gender		
Male	126	38.6
Female	199	61.3
Age		
Below 20	81	24.8
21-30	146	44.8
31-40	70	21.5
Above 40	29	9.0
Education		
Secondary	3	0.9
Higher	91	27.9
Master	234	72.1

CHAPTER IV

RESULTS

In this chapter, the researcher performed descriptive and inferential statistical tools to examine the stated hypotheses. The data were collected with the structured digital and printed questionnaire. After collecting the questionnaire, the appropriate coding was done while capturing the responses. After the manual screening, the data cleaning was performed by correcting missing data, unengaged responses, and wrong entry. The researcher utilized Smart-PLS 2.0 (Free version) and MS-Excel for data analysis.

Demographic Profile of the Respondents

A total of 326 respondents participated in the research and they were using mobile banking for at least 3 months. The following table presents the details of respondents' profile.

Table 3

Demographic Profile

Characteristics	Frequency	Percentage
<i>Gender</i>		
Male	220	67.5
Female	106	32.5
<i>Age</i>		
Below 20	61	18.7
21- 30	186	57.1
31- 40	66	20.2
Above 40	13	4.0
<i>Education</i>		
Below Bachelor	7	2.1
Bachelor	91	27.9
Master	214	65.6

Above Master	14	4.3
<i>Duration of MB Uses</i>		
Less than 6 months	26	8.0
6 months to 1 year	41	12.6
1-3 years	135	41.4
More than 3 years	124	38.0

The majority of the respondents in the research was Male ($n = 220$, 67.5%). The most frequent category of Academic qualification was Master's Degree ($n = 214$, 65.6%). Likewise, the majority of the respondent of the Age was 21-30 years ($n = 186$, 57.1%). Finally, the most frequently reported duration of MB uses was 1-3 years ($n = 135$, 41.4%).

Non-Response Bias

Non response bias is the result of differences in the response of the individuals to those who were invited to participate but did not respond on research (Menachemi, 2011). Since non response bias limits the generalization of findings, it is considered a serious concern in survey method. Therefore, to overcome non response bias, the data set was divided into two sets (early respondent's vs late respondents) by performing the wave analysis recommended by Armstrong and Overton (1977). The result of t-test showed that no significant difference ($P=0.45$) was found between the early wave (163) and late wave (163) group. The result suggests no presence of non-response bias in the data set. Finally, 326 responses were taken for further data analysis.

Common Method Biases

Common method variance (CMV) refers to the variance that is attributable to the measurement method rather than to the constructs the measurement are assumed to represent (Podsakoff et al., 2003) or equivalently as systematic error variance shared among variables measured with and introduced as a function of the same

method and/or source (Richardson et al., 2009). This study applied procedural and statistical measures to control and detect method bias. First, procedural measures were taken such as questionnaires were selected from the multiple researches to avoid single source bias and questionnaires were collected from the digital and printed questionnaire. Second, statistical measures were taken such as Herman's single factor and Kock's full collinearity assessment approach. In the Herman's single-factor analysis test, the result showed with the variance explained by a un-rotated single factor was 35.24% which was less than the suggested threshold of 50% (Podsakoff et al., 2003).

Therefore, it is unlikely to have the presence of common method biases in the data set. Likewise, CMB is likely to take place when variations in responses are caused by the instrument rather than the actual predispositions of the respondents that the instrument attempts to uncover. It suggests that if the VIF values are less than 3.3 then there is no presence of common method biases in the research (Kock, 2015). Since the VIFs in the data set are less than 2.262, there is no presence of common method biases in the data set. Thus, with the stated procedural and statistical measures, the common method of bias was mitigated.

Structural Equation Model

Structural equation modeling (SEM) is a second-generation statistical technique for analyzing the cause-effect relationship between latent constructs that are always used in marketing and management research (Hair et al., 2011). SEM is generally classified into covariance based structural equation modeling (CB-SEM) analysis and the variance based (PLS-SEM) structural equation modeling. This research applies the PLS-Based Structural Equation Model (SEM) to examine the stated hypotheses. It is stated that CB-SEM is a preferred method when the goal is

theory testing, theory confirmation, or the comparison of alternative theories (Hair et al., 2017), whereas, PLS-SEM can be applied for exploratory research when the theory is less developed (Hair et al., 2017). Since this research intended to introduce a new variable in the existing UECM, the PLS-SEM, the combination of measurement and path model, was applied. Consistent with the previous researches, this study was applied PLS Based SEM approach for data analysis (e.g. Rahi & Ghani, 2019; Yu et al., 2018; Poromatikul et al., 2019; Shang & Wu 2017; Tam et al., 2020).

Measurement Model

It refers to the theory that specifies how measured variables come together to represent the theory. To examine the quality of measurement model, reliability and validity can be ensured the quality of measurement. To establish an outer model's reliability and validity, the researchers applied three major criteria of measurement model used such as reliability analysis, convergent validity, and discriminant validity suggested by (Ringle et al., 2015). To ensure the reliability and validity of the measure, the reliability was tested with composite reliability, Cronbach's alpha and validity was tested with convergent validity and discriminate validity. Since the factor loading of risk perception of COVID-19 is less than 0.60, the item was dropped from the model. The remaining measurement model is stated below;

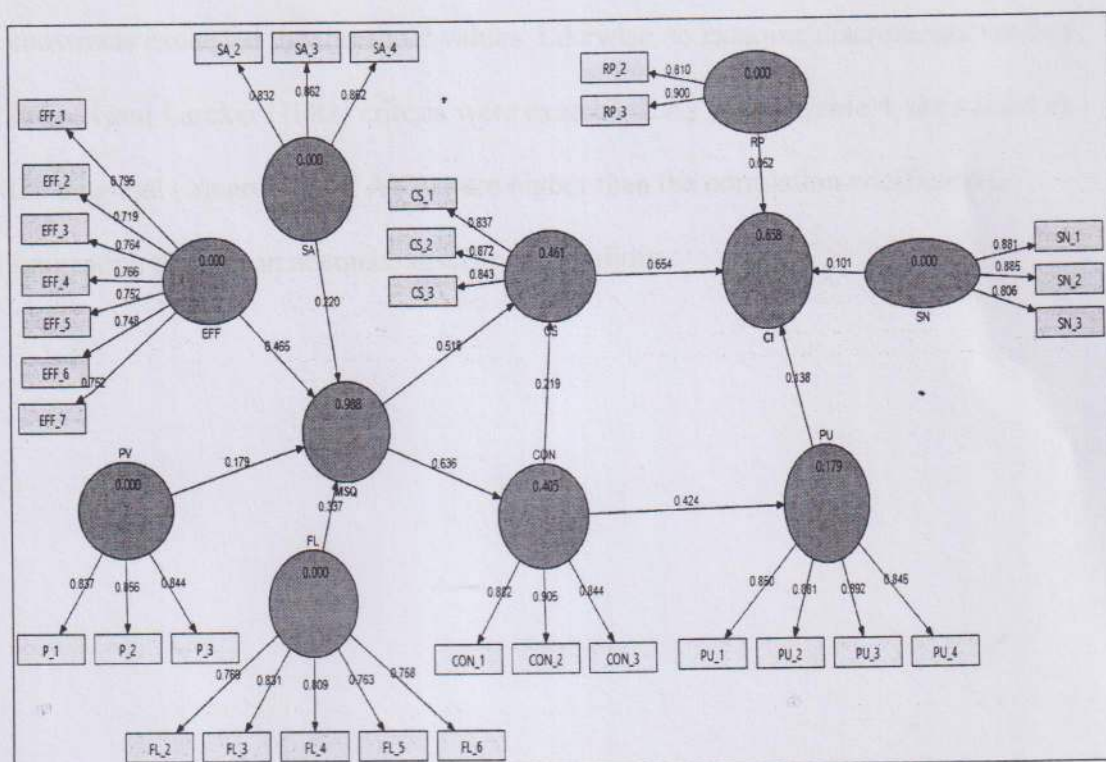


Figure 7. Measurement model

Note. (CI=Continuance intention, CON= Confirmation, CS= Customer satisfaction, EFF= Efficiency, FL=Fulfillment, PU= Perceived Usefulness, PV=Privacy, RP = Risk Perception of Covid-19, SA= System availability, SN=Subjective norms)

Reliability Analysis

It refers to the extent to which a scale produces consistent results if the measurements are repeated several times. To measure the reliability, this research applied composite reliability (CR) and Cronbach's alpha with a cut-off value of 0.7. According to Table 4, since no value of CR and Cronbach's alpha was less than 0.70, this confirms the reliability of the model (Ringle et al., 2018).

Validity Analysis

It refers to the degree to which measurement measures what it is supposed to measure. To test the validity of measurement, convergent and discriminant validity are measured. Convergent validity refers to the correlation among highly related constructs. To achieve adequate convergent validity, item loadings and AVE must be higher than 0.7 and 0.5, respectively (Hair et al., 2016). According to Table 4, all the

constructs exceeded the threshold values. Likewise, to examine discriminant validity, Fornell and Larcker (1981) criteria were examined. As shown Table 4, the values in the diagonal (square root of AVEs) are higher than the correlation coefficients, suggesting there is an adequate discriminant validity.

	CR1	0.853			
2. Commitment	CR2	0.965			
	CR3	0.945	0.740	0.510	0.834
	CR4	0.918			
3. Customer Satisfaction	CR1	0.846			
	CR2	0.875	0.770	0.850	0.810
	CR3	0.837			
4. Customer Loyalty	CR1	0.783			
	CR2	0.840	0.780	0.890	0.820
	CR3	0.810			
5. The Effectiveness of Complaints	CR1	0.810	0.730	0.750	0.840
	CR2	0.800			
	CR3	0.750			
	CR4	0.820	0.740	0.790	0.870
6. Perceived Fairness	CR1	0.780			
	CR2	0.840			
	CR3	0.793			
	CR4	0.780			
	CR5	0.761	0.872	0.804	0.8738
	CR6	0.778			
	CR7	0.747			
	CR8	0.732			
	CR9	0.703			
7. Reputation	CR1	0.815	0.819	0.800	0.8675
	CR2	0.804			
	CR3	0.803			
	CR4	0.758			

Table 4

Validity and Reliability of Constructs

Constructs	Indicators	Loading	AVE	CR	Alpha
1. Continuance Intention	CI_1	0.810			
	CI_2	0.800	0.700	0.870	0.780
	CI_3	0.890			
2. Confirmation	CON_1	0.880			
	CON_2	0.900	0.770	0.910	0.850
	CON_3	0.840			
3. Customer Satisfaction	CS_1	0.840			
	CS_2	0.870	0.720	0.890	0.810
	CS_3	0.840			
4. Subjective Norms	SN_1	0.880			
	SN_2	0.890	0.740	0.890	0.820
	SN_3	0.810			
5. Risk Perception of Covid-19	RP_2	0.810	0.730	0.850	0.640
	RP_3	0.900			
	PU_1	0.850			
	PU_2	0.880	0.740	0.890	0.890
6. Perceived Usefulness	PU_3	0.890			
	PU_4	0.840			
	EFF_1	0.7953			
7a. Efficiency	EFF_2	0.7192			
	EFF_3	0.7641			
	EFF_4	0.7661	0.573	0.904	0.8758
	EFF_5	0.7524			
7b. Fulfillment	EFF_6	0.7479			
	EFF_7	0.7521			
	FL_2	0.7693			
	FL_3	0.8315	0.619	0.890	0.8458
	FL_4	0.8094			
	FL_5	0.7628			
	FL_6	0.7585			

	P_1	0.8371			
7c. Privacy	P_2	0.856	0.715	0.883	0.8012
	P_3	0.8441			
	SA_2	0.8322			
7d. System Availability	SA_3	0.8624	0.727	0.889	0.8131
	SA_4	0.8622			

Discriminant Validity

Discriminant validity assesses the extent to which a concept and its indicators differ from another concept and its indicators (Bagozzi et al., 1991). To test the discriminant validity, Fornell and Larcker's criteria was used. If the correlations between items in any two constructs are lower than the square root of the average variance shared by items within a construct, the discriminant validity will be ensured (Fornell & Larcker, 1981). As shown in table 5, the values in the diagonal (square root of AVEs) are higher than the correlation coefficients, suggesting there is an adequate discriminate validity.

Table 5

Discrimination validity (Fronell and Larcker's Criteria)

Constructs	CI	CON	CS	EFF	FL	PU	PV	RP	SA	SN
1. CI	0.837									
2. CON	0.559	0.877								
3. CS	0.791	0.549	0.849							
4a. EFF	0.619	0.635	0.665	0.860						
4b. FL	0.517	0.474	0.520	0.681	0.854					
5. PU	0.526	0.424	0.508	0.490	0.458	0.860				
4c. PV	0.511	0.436	0.439	0.511	0.676	0.318	0.757			
6. RP	0.350	0.296	0.361	0.343	0.348	0.228	0.246	0.787		
4d. SA	0.392	0.437	0.415	0.522	0.711	0.247	0.386	0.312	0.846	
7. SN	0.486	0.308	0.473	0.377	0.419	0.432	0.322	0.297	0.296	0.852

Note. (CI=Continuance intention, CON= Confirmation, CS= Customer satisfaction, EFF= Efficiency, FL=Fulfillment, PU= Perceived Usefulness, PV=Privacy, RP = Risk Perception of Covid-19, SA= System availability, SN=Subjective norms)

Structural Model (Path model)

The multivariate analysis requires several assumptions to be fulfilled (Ooi et al., 2018). First, linearity refers to the consistent slope of change that represents the relationship between an IV and a DV. If the Sig value for Deviation from Linearity is less than 0.05, the relationship between IV and DV is not linear, and thus is problematic (Gaskin, 2020). However, this research found all the proposed relationship linear (See Table 6).

Table 6

Linearity of Relationships

Constructs		Summary of Squares	df	Mean Square	F	Sig.
1. CI* CS	Combined	229.93	39	5.90	17.51	0.000
	Linearity	204.29	1	204.29	606.72	0.000
	Deviation from Linearity	25.64	38	0.68	2.00	0.001
2. CI * PU	Combined	176.91	55	3.34	6.08	0.000
	Linearity	90.43	1	90.43	164.73	0.000
	Deviation from Linearity	86.48	52	1.66	3.03	0.000
3. CI * SN	Combined	123.76	33	3.75	5.41	0.000
	Linearity	77.04	1	77.04	111.11	0.000
	Deviation from Linearity	46.72	32	1.46	2.105	0.001
4. CI * RP	Combined	73.62	21	3.51	4.22	0.000
	Linearity	40.07	1	40.07	48.22	0.000
	Deviation from Linearity	33.55	20	1.68	2.02	0.007
5. CS * MSQ	Combined	256.67	200	1.28	2.29	0.524
	Linearity	141.26	1	141.26	251.86	0.000
	Deviation from Linearity	115.413	199	0.58	1.034	0.423
6. CON *MSQ	Combined	257.01	200	1.285	2.35	0.000
	Linearity	131.69	1	131.70	240.90	0.000
	Deviation from Linearity	125.40	199	0.630	1.15	0.194
7. CS *CON	Combined	152.51	44	3.47	5.59	0.000
	Linearity	98.56	1	98.56	158.93	0.000

Deviation from Linearity	53.95	43	1.26	2.02	0.000
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Note. (CI=Continuance intention, CON= Confirmation, CS= Customer satisfaction, PU= Perceived Usefulness, RP = Risk Perception of Covid-19, MSQ= Mobile service quality, SN=Subjective norms)

Second, Homoscedasticity refers to the means that the variable's residual (error) exhibits consistent variance across different levels of the variable (Gaskin, 2020). Homoscedasticity assumption was tested with standard residuals scatter plot (Fig.9) and found that residuals are scattered around a diagonal line. Thus, homoscedasticity is verified.

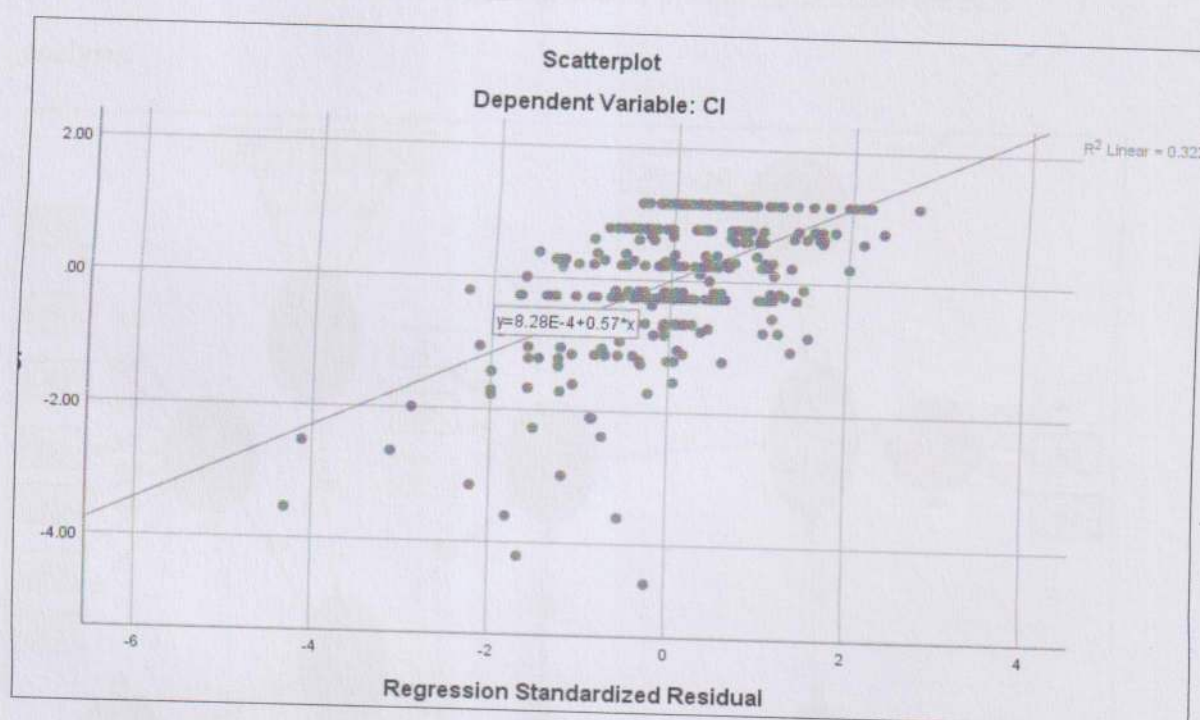


Figure 8. Scatter plot

Thirdly, multicollinearity refers to the variance our independent variables explain in our dependent variable are overlapping with each other and thus not each explaining unique variance in the dependent variable (Gaskin, 2020). This assumption was examined with the VIFs and tolerances. The results showed that the VIFs fall within 1.205–2.262 that is below the standard threshold of 10. The tolerances fall within 0.442 to 0.830 which are greater than 0.10, which indicating that there is no issue of multicollinearity (Hew & Kadir, 2016). Finally, Normality refers to the

distribution of the data for a particular variable. Normality assumption was tested with the values of Skewness and Kurtosis. According to the values of Skewness and Kurtosis which a range between -2 and 2 (George & Mallery, 2010), data follow a normal distribution. In the data set, skewness range between -1.282 to -0.390 and kurtosis 0.028 to 2.800 , the data distribution is not perfectly normal, the variance based structural equation modeling (SEM) of partial least squares (PLS) was adopted in the study. Moreover, this research conducted artificial neural networks (ANN) to rank the normalized importance of the significant predictors based on the PLS analysis.

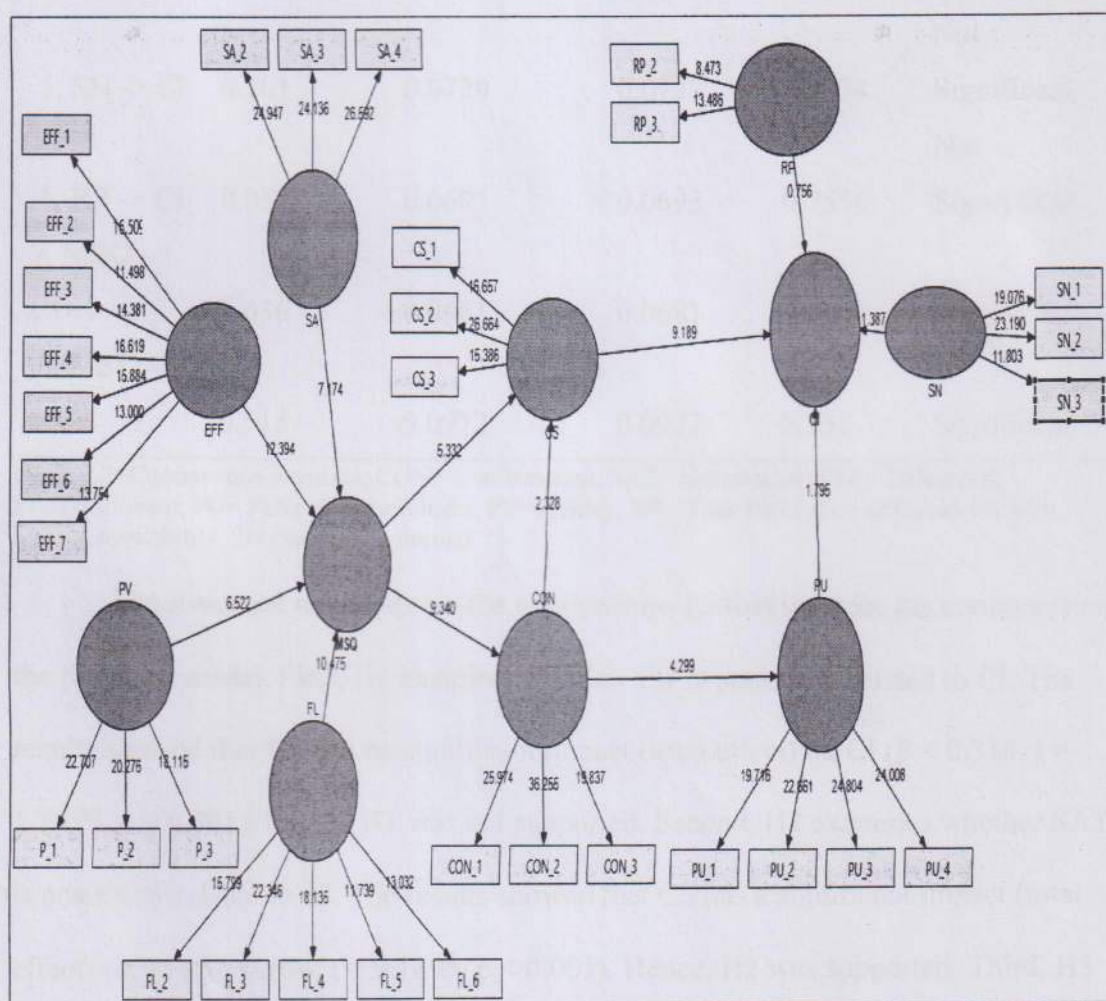


Figure 9. Structural model (Bootstrapping with 5000 sample)

Note. (CI=Continuance intention, CON= Confirmation, CS= Satisfaction, EFF= Efficiency, FL=Fulfillment, PU= Perceived Usefulness, PV=Privacy, RP = Risk Perception of Covid-19, SA= System availability, SN=Subjective norms)

Table 7

Results of Structural Model Path Coefficient (Direct Relationship)

Hypotheses	Path Coefficient	Standard Deviation	Standard Error	T-Statistics	Significant Level
1. PU ->					Not
CI	0.138	0.077	0.077	1.7952	Significant
2. SAT ->					
CI	0.654	0.0712	0.0712	9.1895	Significant
3. CON ->					
SAT	0.219	0.0943	0.0943	2.3283	Significant
4. CON ->					
PU	0.424	0.0985	0.0985	4.2992	Significant
					Not
5. SN -> CI	0.101	0.0729	0.0729	1.3874	Significant
					Not
6. RP -> CI	0.052	0.0693	0.0693	0.7556	Significant
7. MSQ ->					
CON	0.636	0.0681	0.0681	9.3399	Significant
8. MSQ ->					
SAT	0.518	0.0972	0.0972	5.332	Significant

Note. (CI=Continuance intention, CON= Confirmation, SAT= Satisfaction, EFF= Efficiency, FL=Fulfillment, PU= Perceived Usefulness, PV=Privacy, RP = Risk Perception of Covid-19, SA= System availability, SN=Subjective norms)

The structural model shows the relationships (paths) between the constructs on the proposed model. First, H1 examines whether PU is positively related to CI. The results showed that PU has no significant impact (total effect) on CI ($\beta = 0.318$, $t = 1.7952$, $p < 0.001$). Hence, H1 was not supported. Second, H2 examines whether SAT is positively related to CI. The results showed that CS has a significant impact (total effect) on CI ($\beta = 0.654$, $t = 9.1895$, $p < 0.001$). Hence, H2 was supported. Third, H3 examines whether CON is positively related to SAT. The results showed that CON has a significant impact (total effect) on SAT ($\beta = 0.219$, $t = 2.3283$, $p < 0.001$). Hence, H3 was supported. Fourth, H4 examines whether CON is positively related to

PU. The results showed that CON has a significant impact (total effect) on PU ($\beta = 0.424, t = 4.299, p < 0.001$). Hence, H4 was supported. Fifth, H5 examines whether SN is positively related to CI. The results showed that SN has no significant impact (total effect) on CI ($\beta = 0.101, t = 1.3874, p < 0.001$). Hence, H5 was not supported. Sixth, H6 examines whether RPC is positively related to CI. The results showed that RPC has no significant impact (total effect) on CI ($\beta = 0.052, t = 0.7556, p < 0.001$). Hence, H6 was not supported. Second last, H7 examines whether MSQ is positively related to CON. The results showed that MSQ has a significant impact (total effect) on CON ($\beta = 0.636, t = 9.336, p < 0.001$). Hence, H7 was supported. Finally, H8 examines whether MSQ is positively related to SAT. The results showed that MSQ has a significant impact (total effect) on SAT ($\beta = 0.518, t = 5.332, p < 0.001$). Hence, H8 was supported.

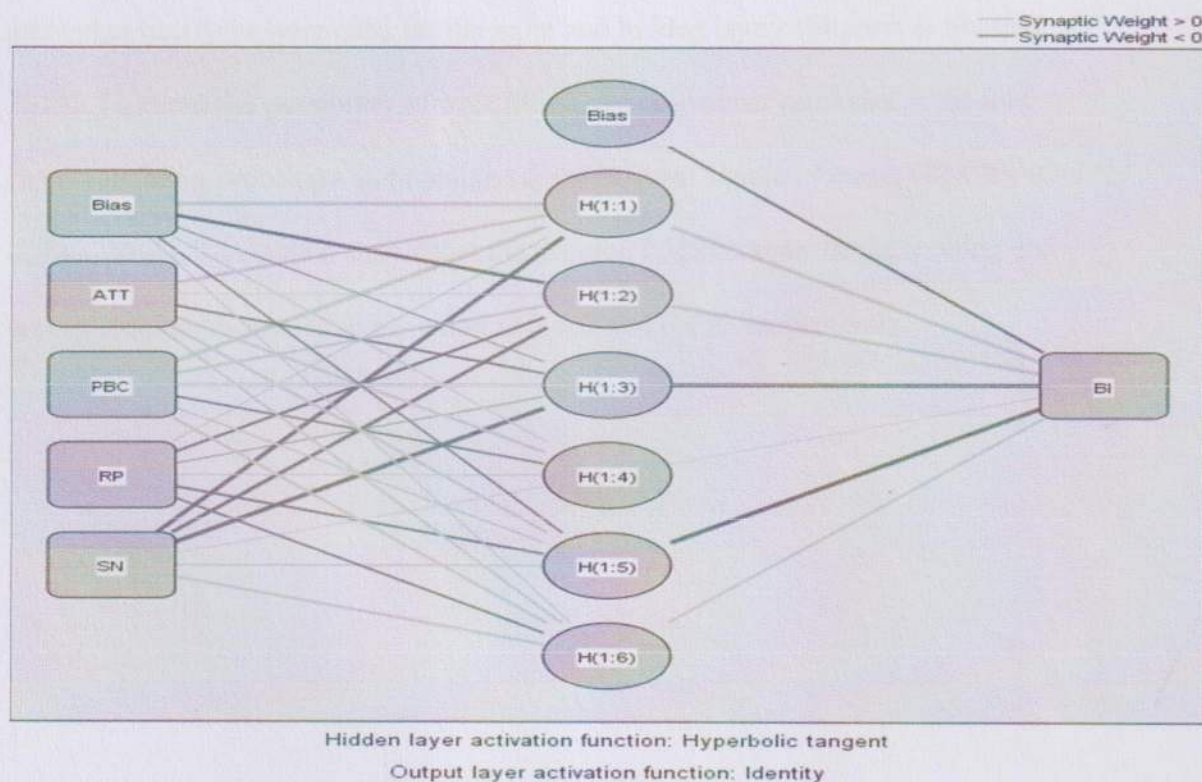


Figure 10. Artificial neural network diagram

Artificial Neural Network (ANN)

Artificial neural network (ANN) is a massively parallel distributed processor made up of simple processing units, which have a neural propensity for storing experimental knowledge and making it available for use (Haykin, 2001). The purpose of the artificial neural network is to examine predicting power of independent variables on dependent variables. The ANN analysis was performed using IBM SPSS neural network module. The ANN algorithm can capture linear and nonlinear relationship and does not need normal distribution (Teo et al., 2015). Leong et al (2020) reported that the algorithm can learn through the training process to predict the outcomes of the analysis using a feed-forward-backward-propagation (FFBP) algorithm, where inputs are feed in a forward path and the estimated errors will move in a backward direction (Taneja & Arora, 2019). Multilayer perceptrons and sigmoid activation functions were used for the input and hidden layers (Sharma & Sharma, 2019). To avoid the possibility of over fitting, the researcher reiterated a ten-fold cross-validating procedure and obtained the root mean square of errors (RMSE) (Ooi & Tan, 2016). The table 6 shows that the average RMSE values of the training and testing procedures are relatively small at 0.467 and 0.436, respectively.

Table 8

Root Mean Sum of Errors values

Training			Testing			Total
N	SSE	RMSE	N	SSE	RMSE	sample
235	42.935	0.476	91	20.123	0.470	326
221	33.937	0.528	105	25.4	0.492	326
220	31.73	0.443	106	22.475	0.460	326
227	32.494	0.506	99	13.469	0.369	326
238	38.598	0.468	88	18.445	0.458	326
218	30.481	0.457	108	22.867	0.460	326
229	33.664	0.436	97	16.453	0.412	326
230	34.521	0.458	96	19.138	0.446	326
237	33.738	0.44	89	15.383	0.416	326
228	41.375	0.456	98	14.123	0.380	326
Mean	35.347	0.467	Mean	18.788	0.436	
Standard			Standard			
deviation	4.1830	0.0296	deviation	3.9871	0.0404	

To measure the strengths of the predictive power of each of the input neurons, the researcher performed sensitivity analysis (Table 9) to obtain the normalized importance of neurons in the form of percentage (Karaca et al., 2019). The result shows that the most important predictor followed by the satisfaction, confirmation, mobile service quality. The normalized importance of the significant predictors is satisfaction (100%), mobile service quality (50.8%), and confirmation (23.7%) respectively.

Table 9

Sensitivity Analysis

	NN1	NN2	NN3	NN4	NN5	NN6	NN7	NN8	NN9	NN10	Average	Importan
CON	29.3%	33.4%	21.2%	30.6%	14.8%	23.8%	15.4%	22.6%	19.8%	25.2%	23.6%	23.7%
CS	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	95.5%	100.0%	100.0%	99.6%	100.0%
MSQ	37.4%	26.2%	50.6%	71.7%	56.0%	45.8%	29.9%	100.0%	48.0%	40.3%	50.6%	50.8%
PU	27.5%	29.5%	18.4%	29.4%	21.9%	17.1%	12.5%	23.8%	19.4%	26.0%	22.5%	22.6%
SN	11.9%	11.5%	8.0%	20.6%	14.0%	24.3%	15.9%	24.5%	19.2%	18.9%	16.9%	17.0%
SP	17.2%	12.7%	10.2%	22.5%	14.4%	19.6%	9.9%	19.3%	13.8%	11.2%	15.1%	15.1%

CHAPTER V

SUMMARY, DISCUSSION, AND IMPLICATIONS

This study aimed to investigate the factors influencing the continuance intention of mobile banking. The objective was developed based on the research gap of explained phenomenon of mobile service quality and risk perception of COVID-19. The theoretical bases for the study were the unified expected confirmation model, the SERVQUAL model, and protective motivation theory. The fundamental question to answer the phenomenon was *what is the role of mobile service quality in satisfaction and confirmation, and how does risk perception of COVID-19 influence continuance intention of mobile banking?*

To answer the stated research question, this research applied PLS-Based structural equation model to examine the hypotheses based on research question. After examining the assumptions of multivariate assumptions such as linearity, homoscedasticity, multicollinearity, normality, this research tested hypotheses applying PLS-Based structural equation model. Based on the predictive ability on continuance intention of mobile banking, the research found that satisfaction, mobile service quality, and confirmation are the most important factors, respectively. This chapter discusses empirical findings in reference to previous studies, and the existing theories, implications and critique for future research.

Summary of Main Findings

To answer the stated research question, the eight hypotheses were tested applying PLS-Based SEM. Hypothesis 1, 5 and 6 are not supported in the study. This implies that perceived usefulness, subjective norms and risk perception of COVID-19 have no influence on continuance intention of mobile banking in this study. However,

Hypothesis 2, 3, 4, 7 and 8 are supported in the study. This implies that satisfaction has significant positive influence on continuance intention of mobile banking.

Likewise, confirmation has a significant positive influence on satisfaction, perceived usefulness. Moreover, mobile service quality has a significant positive influence on satisfaction and confirmation in this study.

Table 10

Summary of Hypotheses Testing Results

S.N.	Hypotheses	Hypothesized Relationship	Findings
H 1	Perceived Usefulness has a significant positive effect on Continuance Intention of mobile banking.	Positive	Not Supported
H 2	Satisfaction has a significant positive effect on Continuance Intention of mobile banking.	Positive	Supported
H 3	Confirmation has a significant positive effect on satisfaction of mobile banking.	Positive	Supported
H 4	Confirmation has a significant positive effect on perceive usefulness of mobile banking.	Positive	Supported
H 5	Subjective Norms has a significant positive effect on Continuance Intention of mobile banking.	Positive	Not Supported
H 6	Risk Perception of Covid-19 has a significant positive effect on Continuance Intention of mobile banking.	Positive	Not supported
H 7	M-Service Quality has a significant positive effect on Satisfaction of mobile banking.	Positive	Supported
H 8	M-Service Quality has a significant positive effect on Confirmation of mobile banking.	Positive	Supported

Discussion

The study examined the effect of satisfaction, perceived usefulness, and subjective norms on the continuance intention of Mobile Banking.

First, this research found that perceived usefulness has no significant influence on the continuance intention of mobile banking. It is inconsistent with previous studies (e.g. Jumaan et al., 2020; Sreelakshmi & Prathap, 2020). However, it is consistent with the research of (e.g. Abbas, 2016; Choi, 2013; Franque et al., 2020). Initially, perceived usefulness was found significant about the continuance intention. However, as the satisfaction introduced in the model, the influence of perceived influence was found insignificant. This result could be due to Satisfaction is the most crucial factor for mobile banking users to continue the usage of mobile banking. The result substantiates predictive analysis as well. Likewise, Nepali consumers could differ from the remaining customer of mobile banking users in regards to value satisfaction over other factors in mobile banking.

Second, this research found that satisfaction has a significant positive influence on the continuance intention of mobile banking. It is consistent with previous studies (e.g. Ambalov, 2018; Bhattacharjee & Lin, 2014; Bhattacharjee et al., 2015; Cao et al., 2018; Franque et al., 2020). In the mobile banking context, this research is consistent with previous studies (e.g. Humbani & Wiese, 2019; Jumaan, Hashim, & Al-Ghazali, 2020; Poromatikul et al., 2019; Rahi & Ghani, 2019; Sreelakshmi & Prathap, 2020; Tam et al., 2020). Satisfaction is the most significant variable in the study because users of mobile banking continue using mobile banking if they are satisfied with mobile banking. Satisfied mobile banking users are to continue using mobile banking in the study. The finding of the study is aligned with the expectation confirmation theory.

Third, this research found that confirmation has a significant positive influence on the satisfaction of mobile banking. It is consistent with previous studies (e.g. Ambalov, 2018; Bhattacharjee & Lin, 2014; Bhattacharjee et al., 2015; Cao et al., 2018; Franque et al., 2020). In the mobile banking context, this research is consistent with previous studies (e.g. Jumaan et al., 2020; Poromatikul et al., 2019; Rahi & Ghani, 2019; Sreelakshmi & Prathap, 2020; Tam et al., 2020; Yu et al., 2018). When the expectations of mobile banking users are met, customers are to become satisfied as a result enhancing the continuance intention of mobile banking. This research has further substantiated that the lesser the gap between customer expectations and reality the higher will be the level of satisfaction among users in mobile banking. It is consistent with the existing theory of expectation of confirmation.

Fourth, this research found that confirmation has a significant positive influence on the perceived usefulness of mobile banking. It is consistent with previous studies (e.g. Ambalov, 2018; Bhattacharjee & Lin, 2014; Bhattacharjee et al., 2015; Cao et al., 2018; Franque et al., 2020). In the mobile banking context, this research is consistent with previous studies (e.g. Humbani & Wiese, 2019; Jumaan et al., 2020; Rahi & Ghani, 2019; Shang & Wu, 2017; Sreelakshmi & Prathap, 2020; Susanto et al., 2016; Yu et al., 2018; Yuan et al., 2016). It can be inferred that meeting customer expectations can increase perceived usefulness, which increases the likelihood of continuance intention of mobile banking. It is consistent with the existing theory of expectation of confirmation.

Fifth, the purpose of the study was to examine the influence of subjective norms on the continuance intention of mobile banking. Subjective norms have no significant positive effect on the continuance intention of mobile banking. It is

inconsistent with previous studies (e.g. Bhattacharjee & Lin, 2014). However, it is consistent with the research of (e.g. Abbas, 2016; Choi, 2013; Franque et al., 2020). The research shows no influence of friends, family, and supervisors on the continuance intention of mobile banking because users of mobile banking are educated and they value other factors such as mobile service quality and satisfaction over the subjective norms in the Nepali market to continuing intention of mobile banking.

Sixth, the study examined the influence of risk perception of COVID-19 on the continuance intention of mobile banking. This study found that there is no effect of risk perception of COVID-19 on the continuance intention of mobile banking. It is inconsistent with the findings (e.g. Menard et al., 2017; Tsai et al., 2016) and the theory of protection motivation theory of Rogers (1975). The rationale behind the unsupported result is aligned with the study of Pokhrel (2021) in adoption intention. The argument behind the result is that the risk perception of COVID-19 is significant if satisfaction is not present in the model. However, Nepali mobile banking users have considered other variables more significant satisfaction, mobile service quality than risk perception of COVID-19. More importantly, the majority of the respondents were using mobile banking before COVID-19, therefore, the continuance intention could have not been influenced by the risk perception of COVID-19.

Seventh, the study aimed to examine the influence of mobile service quality on the satisfaction of mobile banking. It is consistent with the finding of service quality and e-service quality (e.g. Gronroos, 1984; Iqbal et al., 2018; Parasuraman et al., 1985). In the mobile service quality, the study could be a seminal work that emphasizes that mobile service quality plays an indirect significant role in the continuance intention of mobile banking through satisfaction. It further substantiates the expectations

disconfirmation theory developed by Oliver (1980). The result could provide an empirical and theoretical grounding for improving mobile service quality in mobile banking so that customers would be more satisfied with the services and continuing using mobile banking.

Finally, the study aimed to examine the influence of mobile service quality on the confirmation of mobile banking. It is consistent with the findings of previous studies (e.g. Franque et al., 2020; Shao et al., 2020). Consumers evaluate the mobile services provided by vendors and supported expectation increases perceived usefulness and confirmation of the mobile banking usage. It is consistent with the expectations disconfirmation theory of Oliver (1980).

Implications

This study provides valuable insights for researchers, academicians, and managers to understand and apply the continued adoption of mobile banking in the following ways;

Theoretical Implications

From a theoretical viewpoint, mobile service quality is the new avenue for e-services researchers. This research found that mobile service quality has a meaningful influence on satisfaction and confirmation of services in the continuance intention of mobile banking. To the best knowledge of the researcher, this is the first study that has incorporated mobile service quality in the existing unified model of IT continuance. Likewise, this research has contributed to understanding the role of protection motivation with the unified model of IT continuance. This research provides a critical juncture for the improvement of existing theory under health hazards such as COVID-19. It is recommended to develop the scale of mobile service quality in the context of the Nepali market so that it can explain the continuance

intention in a more parsimonious way. Finally, this study found that the existing model of ECM should integrate mobile service quality as an antecedent of satisfaction for a greater understanding of continuance intention.

Methodological Implications

From a methodological viewpoint, this study applied two stages of the PLS-SEM approach with an artificial neural network (ANN) to study the continuance intention of mobile banking. To the best knowledge of the researcher, the research is among the fewest study to understand the phenomena in the domain of continuance intention applying stated methods. The result could provide a meaningful outline to evaluate the significance of each variable such as satisfaction and mobile service quality.

Managerial Implications

From the managerial perspective, this study expects to offer some interesting insights for both managers and policymakers. This research has found that mobile service quality is a key determinant of satisfaction among Nepali mobile banking users. Therefore, organizations should craft and draft their organizational strategies so that they can gain a competitive advantage in the highly competitive mobile banking market of Nepal. Moreover, concerned authorities such as Nepal Rastra Bank could develop policies and circulars to manage E-Payment System by integrating the mobile service factors such as fulfillment, efficiency, privacy, and availability in the effective implementation of the E-Payment system. Likewise, e-service providers can include the dimensions of mobile service quality to enhance the satisfaction and ultimately continuance intention of mobile banking. Likewise, financial institutions communicate about mobile banking with advertising, public relations, direct marketing, and digital marketing focusing on mobile service quality. Finally, it is evident that mobile service quality is among key determinants of satisfaction;

therefore, it is meant to address the gap for enhancing service quality and managing customer relationships in Nepali mobile banking users.

Critique of the Study

Although this research has been undertaken with rigor and cautions, there is always room for improvement. First, the researcher applied a non-probability method of sampling with 326 respondents. The study may not be representative of the entire mobile banking users of Nepal. Thus, it is suggested to study the phenomena in a similar culture and context with the application of probability sampling. Second, the respondents are aged from 20 to 40 years, which could not incorporate the remaining population of mobile banking users. So, it is recommended to research with all age groups of mobile banking users. Third, mobile service quality is the new avenue for the researcher and few contextual scales are available in the field. Thus, it is suggested to develop a scale by incorporating additional variables relevant for Nepali mobile banking users. Fourth, this study applied traditional methods of common method biases such as Herman's single factor method. Therefore, a more rigorous technique like the CFA marker technique is suggested to implement in future research. Finally, multilevel modeling can be applied to understand mobile service quality and continuance intention of mobile banking in future research.

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ANNEX I

Related Studies

S.N.	Author	Theory/model	Country and Category	Sampling methods and Size	Statistical Methods
1	Rahi and Ghani (2019)	<i>Theory:</i> ECM and Self Determination Theory <i>Control variable:</i> No	Pakistan, Internet banking	Sample size: 398 Sampling method: Convenience sampling Unit of analysis: Customers of banking	Common method biases: Herman single factor SEM: PLS-Based SEM, Coefficient of determination (R ²) Effect size (F ²), Predictive relevance (Q ²)
2	Yu et al. (2018)	<i>Theory:</i> Trust transfer theory <i>Control variable:</i> Age, gender, education, usage experiences	China, Mobile payment	Sample size: 219 Sampling method: Convenience sampling Unit of analysis: Customers of banking	Common method biases: Herman single factor, Six factor and single factor model SEM: PLS-Based SEM, Coefficient of determination (R ²)

3	Susanto, Chang, and Ha (2016)	<i>Theory:</i> ECM, perceived security, privacy, trust <i>Control variable:</i> No	Korea, Smart banking services	Sample size: 301 Sampling method: random online survey Unit of analysis: users	Common method biases: No SEM: Coefficient of determination (R ²)
4	Sreelakshmi and Sangeetha (2020)	<i>Theory:</i> Health Belief Model and Expectation confirmation model <i>Control variable:</i> No	India, Mobile payment or mobile banking application users	Sample size: 654 Sampling method: online survey Unit of analysis: users	Common method biases: No SEM: CB-Based SEM
5	Humbani and Wiese (2019)	<i>Theory:</i> Expectancy confirmation model (ECM), technology readiness index (TRI) <i>Control variable:</i> No	South Africa, Mobile payment apps	Sample size: 426 Sampling method: Convenience sampling Unit of analysis: Mobile payment app	Common method biases: No SEM: CB-Based SEM
6	Poromatikul et al. (2019)	<i>Theory:</i> ECM, TAM and Information system success model <i>Control variable:</i> No	Thailand, Mobile banking apps	Sample size: 399 Sampling method: Convenience and judgmental sampling Unit of analysis: Mobile payment app	Common method biases: No SEM: PLS-Based SEM, Coefficient of determination (R ²), Effect size (F ²)

- | | | | | | |
|---|--|---|---|---|--|
| 7 | Shang and Wu
(2017) | <i>Theory:</i>
TAM, ECM,
perceived
value
<i>Control</i>
<i>variable:</i> No | China,
Mobile
shopping
consumers | Sample size:
203
Sampling
method:
Quota and
Convenience
sampling
Unit of
analysis:
University
staff and
students | Common
method
biases: No
SEM: PLS-
Based SEM,
Coefficient
of
determination
(R ²) |
| 8 | Yuan et al.
(2016) | <i>Theory:</i>
ECM,
TTF,ECM,
perceived risk
<i>Control</i>
<i>variable:</i> No | China,
Mobile
banking | Sample size:
434
Sampling
method:
Convenience
sampling
Unit of
analysis:
Users of
mobile
banking | Common
method
biases: No
SEM: CB-
Based SEM |
| 9 | Jumaan,
Hashim, and
Al-Ghazali
(2020) | <i>Theory:</i> ECM
and cognitive
absorption
<i>Control</i>
<i>variable:</i> No | Malaysia,
Mobile
internet
users | Sample size:
946
Sampling
method:
paper based
survey
Unit of
analysis:
students | Common
method
biases: No
SEM: CB-
Based SEM |

10	Tam et al. (2020)	<i>Theory:</i> ECM and UTAUT 2 <i>Control variable:</i> No	Portugal, Mobile Applications	Sample size: 304 Sampling method: online survey Unit of analysis: students	Common method biases: Herman single factor test, marker variable technique SEM: PLS- Based SEM, Coefficient of determination (R ²)
11	Hsu and Lin (2015)	<i>Theory:</i> ECM and Perceived Value <i>Control variable:</i> No	Taiwan, Paid mobile apps	Sample size: 507 Sampling method: Web-based surveys Unit of analysis: smart phone users	Common method biases: Herman single factor test SEM: CB- Based SEM

S.N.	Author/Year	Country and Category	Findings
1	Rahi and Ghani (2019)	Pakistan, Internet banking	CONF-PU, CONF-SAT, PU-SAT, PU-CI, SAT-CI
2	Yu et al. (2018)	China, Mobile payment	SAT-CI, PU-CI, PU-SAT, CON-SAT, CON-PU
3	Susanto, Chang, and Ha (2016)	Korea, Smart banking services	CON-PU, PU-SAT, SAT-CI, CON-SAT
4	Sreelakshmi and Sangeetha (2020)	India, Mobile payment or mobile banking application users	CON-PU, CON-SAT, PU-SAT, PU-CI, SAT-CI
5	Humbani and Wiese (2019)	South Africa, Mobile payment apps	CON-PU, CON-SAT, PU-SAT, SAT-CI
6	Poromatikul et al. (2019)	Thailand, Mobile banking apps	CON-SAT, SAT-CI
7	Shang and Wu (2017)	China, Mobile shopping consumers	CON-SAT, SAT-CI, CON-PU
8	Yuan et al. (2016)	China, Mobile banking	CON-SAT, SAT-CI, PU-CI, CON-PU, PU-SAT
9	Jumaan, Hashim et al. (2020)	Malaysia, Mobile internet users	CON-SAT, SAT-CI, CON-PU, PU-CI
10	Tam et al. (2020)	Portugal, Mobile Applications	CON-SAT, ST-CI

ANNEX II

Questionnaire of the Research

Dear valued respondent,

I am undertaking this research as the requirement of the MPhil degree from KUSOM. There are no rights or wrong answers. As you go through the questionnaire, please pay attention to the statements and choose the right alternative as honestly as possible. I would again like to state that this survey is purely for an academic purpose and I am simply interested in your honest opinion. I assure you that strict confidentiality will be maintained, and information furnished by you will be used only for the above stated purpose. Thank you for your participation.

Part-I: Main Questionnaires

With respect to your own understanding about *Continuance Intention of Mobile Banking*, please indicate the degree of your agreement or disagreement with each statement by checking one of the five alternatives.

(*Strongly Disagree=1, Disagree=2, Neutral =3, Agree=4, Strongly Agree =5*)

S.N.	Statements	1	2	3	4	5
	Subjective Norms					
1	My supervisors and colleagues think that I should use the mobile banking.					
2	My friends and family think that I should use the mobile banking.					
3	My family, supervisors and colleagues would welcome use of the mobile banking in my work.					
	Perceived Usefulness					
4	Using mobile banking improves my performance in managing personal finances.					
5	Using mobile banking increases my productivity in managing personal finances.					
	Using mobile banking enhances my effectiveness in managing personal finances.					
6	Overall, mobile banking is useful in managing personal finances.					
	Confirmation					
7	Mobile banking execution of operation meets my expectations.					

8	The functionality provided by mobile banking meets my expectations.					
9	I generally get the level of service I expect from mobile banking.					
	Continuance Intention					
10	I want to continue using mobile banking rather than discontinue its use.					
11	My intention is to continue using mobile banking rather than any alternative means.					
12	I am likely to recommend mobile banking to friends, neighbors, and relatives.					
	Satisfaction					
13	I am satisfied with my decision to use mobile banking.					
14	My choice to use mobile banking was a wise one.					
15	I think I did the right thing by deciding to use mobile banking.					
	Risk Perception of COVID-19					
16(R)	The corona virus/COVID-19 will NOT affect very many people in the country I'm currently living in.					
17	I will probably get sick with the corona virus/ COVID-19.					
18	Getting sick with the corona virus/COVID-19 can be serious.					

Part-II: Main Questionnaires

With respect to your own understanding about *M-Service Quality*, please indicate the degree of your agreement or disagreement with each statement by checking one of the five alternatives.

(Strongly Disagree=1, Disagree=2, Neutral=3, Agree=4, Strongly Agree =5)

S.N.	Statements	1	2	3	4	5
	Efficiency					
1	M-banking applications make it easy to find what I need.					
2	M-banking applications make it easy to get services from anywhere.					
3	M-banking applications enable me to complete transactions quickly.					
4	Information on m-banking applications is well organized.					
5	Pages load very fast in m-banking applications.					
6	M-banking applications are simple to use.					
7	M-banking applications enable me to get on to it quickly.					
8	M-banking applications are well organized.					
	System Availability					

9	M-banking applications are always available to provide services.					
10	M-banking applications launch and run straightaway.					
11	M-banking applications do not crash.					
12	Pages in m-banking applications do not freeze after I enter my transaction information.					
	Fulfillment					
13	M-banking applications complete transaction when promised.					
14	M-banking applications make transaction within a suitable time frame.					
15	M-banking applications complete transactions accurately.					
16	M-banking applications have correct banking information.					
17	M-banking applications are truthful about their offerings.					
18	M-banking applications make accurate promises about banking services.					
	Privacy					
19	M-banking applications protect information about my transactions.					
20	M-banking applications do not share my personal information with other applications.					
21	M-banking applications protect information about my banking card.					

Part- II: Demographic Questionnaire

Name (Specify if you want to)

Circle the appropriate responses from the below questions.

1. How old are you?(in years)				
a. Below 20	b. 21-30	c. 31-40	d. 41-50	e. Above 51
2. What is your gender?				
a. Male	b. Female	c. Others		
3. What is educational level?				
a. Undergraduate or below	b. Bachelor Level	c. Master Level	d. Above Master	
4. What is your occupation?				
a. Unemployed	b. Employed but not self-employed	c. Self-employed	d. Retired	
5. How long have you been using Mobile Banking?				
a. Less than 6 month	b. 6 months -1 year	c. 1-3 years	d. More than 3 years	
6. How often do you use M-Banking?				
a. At least once a day	b. At least once a week	c. At least once a month	d. At least once a year	

Thank you for your participation!!!