THE EFFECTS OF FACTORS ON CUSTOMERS' ATTITUDE TOWARDS ACCEPTANCE OF INTERNET BANKING IN BHUTAN

Mr. Ugyen Dendup

A Thesis Submitted in Partial Fulfillment of the Requirements
for the Degree of Master of Science Program in Computer Science and Information Technology
Department of Mathematics and Computer Science
Faculty of Science
Chulalongkorn University
Academic Year 2013

ปัจจัยที่มีผลต่อทัศนคติของลูกค้าต่อการยอมรับธุรกิจทางอินเทอร์เน็ตในประเทศภูฏาน

นายอักเย็น เด็นดุบ

วิทยานิพนธ์นี้เป็นส่วนหนึ่งของการศึกษาตามหลักสูตรปริญญาวิทยาศาสตรมหาบัณฑิต
สาขาวิชาวิทยาการคอมพิวเตอร์และเทคโนโลยีสารสนเทศ
ภาควิชาคณิตศาสตร์และวิทยาการคอมพิวเตอร์
คณะวิทยาศาสตร์ จุฬาลงกรณ์มหาวิทยาลัย
ปีการศึกษา 2556

Thesis Title	THE EFFECTS OF FACTORS ON CUSTOMERS' ATTITUDE TOWARDS ACCEPTANCE OF INTERNET BANKING IN BHUTAN
By	Mr. Ugyen Dendup
Field of Study	Computer Science and Information Technology
Thesis Advisor	Assistant Professor Nagul Cooharojananone, Ph.D.

Accepted by the Faculty of Science, Chulalongkorn University in Partial Fulfillment of the Requirements for the Master's Degree

.....Dean of the Faculty of Science

(Professor Supot Hannongbua, Dr.rer.nat.)

THESIS COMMITTEE

.....Chairman

(Assistant Professor Pattarasinee Bhattarakosol, Ph.D.)

.....Thesis Advisor

(Assistant Professor Nagul Cooharojananone, Ph.D.)

.....External Examiner

(Kanokwan Atchariyachanvanich, Ph.D.)

อักเย็นเด็นดุป : ปัจจัยที่มีผลต่อทัศนคติของลูกค้าต่อการยอมรับธุรกิจทางอินเทอร์เน็ตในประเทศภูฏาน. (THE EFFECTS OF FACTORS ON CUSTOMERS' ATTITUDE TOWARDS ACCEPTANCE OF INTERNET BANKING IN BHUTAN) อ.ที่ปรึกษาวิทยานิพนธ์หลัก: ดร. นกุล คูหะโรจนานนท์, 73 หน้า.

งานวิจัยนี้สร้างขึ้นโดยมีวัตถุประสงค์เพื่อศึกษาหาปัจจัยที่มีผลกระทบต่อการยอมรับของผู้บริโภคต่อธนาคารอิเล็กทรอนิกส์ (Internet Banking) ในประเทศภูฏาน ซึ่งได้มีการออกแบบการสำรวจโดยใช้แบบสอบถามเพื่อเก็บ รวบรวมข้อมูลของลูกค้าของธนาคาร จำนวน 273 ราย ผลการสำรวจแสดงให้เห็นว่า การรับรู้ถึงประโยชน์ที่เกิดจากการใช้งาน (Perceived Usefulness) และอิทธิพลจากสังคม (Social Influence) มีผลกระทบอย่างสูงต่อทัศนคติของลูกค้าในการยอมรับการใช้งานธนาคารอิเล็กทรอนิกส์ในประเทศภูฏาน นอกจากนี้ปัจจัยด้านความปลอดภัยและการรับรู้ถึงความง่ายในการใช้งาน (Perceived Ease of Use) ก็มีผลกระทบต่อทัศนคติของลูกค้าในการยอมรับการใช้งานธนาคารอิเล็กทรอนิกส์เช่นกัน ทั้งนี้ผลการศึกษาที่ค้นพบและแนวโน้มงานวิจัยในอนาคตได้ถูกนำเสนอในงานวิจัยฉบับนี้อีกด้วย

ภาควิชา	คณิตศาสตร์และวิทยาการคอมพิวเตอร์	ลายมือชื่อนิสิต .....
		ลายมือชื่อ อ.ที่ปรึกษาวิทยานิพนธ์หลัก .....
สาขาวิชา	วิทยาการคอมพิวเตอร์และเทคโนโลยีสารสนเทศ	
ปีการศึกษา	2556	

5572611123 : MAJOR COMPUTER SCIENCE AND INFORMATION TECHNOLOGY
KEYWORDS: INTERNET BANKING / PERCEIVED USEFULNESS / PERCEIVED EASE OF USE / SECURITY / SOCIAL INFLUENCE / ATTITUDE / BHUTAN

UGYEN DENDUP: THE EFFECTS OF FACTORS ON CUSTOMERS' ATTITUDE TOWARDS ACCEPTANCE OF INTERNET BANKING IN BHUTAN. ADVISOR: ASST. PROF. NAGUL COOHAROJANANONE, Ph.D., 73 pp.

The aim of this study is to identify the factors that can predict customers' adoption of Internet banking in Bhutan. A survey questionnaire was designed and used to collect data from banks' customers and obtained 273 usable responses. The results of this study have shown that the perceived usefulness and social influence has the highest significant effects on customer attitude to accept Internet banking in Bhutan. Besides, security and perceived ease of use also affects the customers' attitude towards acceptance of Internet banking. The findings of this study are discussed and implications for future research are presented.

Department: Mathematics and Computer Science
Field of Study: Computer Science and Information Technology
Academic Year: 2013

Student's Signature .....
Advisor's Signature .....

ACKNOWLEDGEMENTS

I am truly obliged to the Thailand International Development Cooperation Agency (TICA) of Thailand and Royal Government of Bhutan (RGoB) for supporting this study.

I would like to express my deepest appreciation and gratitude to my friends and my colleagues in MIMIT Lab. for their full support and help to come up with this dissertation. Your encouragement towards the completion of this work was very victorious and successful one.

I am so fortunate to study under the supervision of my advisor Professor Dr. Nagul. I am very much grateful for his enormous guidance and enthusiasm.

Finally, I would also like to express my heartiest gratitude to my parents and family for their support and best wishes. My study would not have been successful one without their full support and valuable advices. This piece of work therefore is a dedication to my beloved parents and family.

CONTENTS

Page

Page

Page

LIST OF TABLES

Page

Page

LIST OF FIGURES

Page

CHAPTER I

INTRODUCTION

The first chapter represents the research approach, background of this study, motivation of the study, problem formulation, and objectives of the study to the readers, scope of the study in carrying out this research, the expected outcomes from this research paper and consequently it represents the structure of the thesis.

1.1. Overview

Information Technology plays an important role in the present banking sectors for the banks as well as for the customers worldwide. Banking is one of the sectors that are influencing the powerful capability of the Internet in the world. In the last few years, banks in Bhutan have rapidly adopted internet banking in order to satisfy the customer's needs where the customers can perform their financial transactions electronically using the Internet from anywhere at any time. Internet banking users are expected to perform at least one of the following services online such as checking account balance and view transactions, paying bills, transferring funds between accounts, ordering cheques, managing investments and stock trading (Alsajjan & Charles, 2006). There are many factors that do slow the adoption of technology in some developing countries such as security issues that plays an important role in online systems while other issues like poor economics, education and infrastructure are some of the obvious factors. This thesis report findings of research into adoption of Internet banking in Bhutan and range of factors are proposed in this study that are more likely to be concerned in user acceptance of Internet banking.

1.2. Background of the Study

This study analyzes and investigates individuals' perception of the acceptance of Internet banking base on users and non-users of Internet banking in Bhutan. Moreover, the study captures the factors that have influenced customers' attitude towards the adoption and use of Internet banking in Bhutan. This research framework is mainly developed based on the adaption of technology acceptance model (TAM) including two most important external constructs i.e. Security (SE) and Social Influence (SI) in the context of Bhutanese society. Security is the main concern that many people in Bhutan are reluctant to

adopt Internet banking and on the other hand customers get adapted to Internet banking due to influence of social such as friends, family or work group. The customers' attitude towards the adoption of Internet banking is found to be affected by many factors apart from the ones introduced and defined by F. D. Davis (1989). Perceived usefulness (PU) and perceived ease of use (PEOU), two mostly used internal TAM variable has been studied for the customers' attitude towards the acceptance of Internet banking in many of the countries and was found to be very significant factors (Ariff, Zakuan, Jusoh, Bahari, & M., 2012), (Sabah A. Al-Somali, Gholami, & Clegg, 2009), (M. C. Lee, 2009) and (Suping & Yizheng, 2010).

1.3. Motivation of the Study

This study has two main motivations and they are described below:

- Internet banking services in Bhutan is a new innovation and the quality of the services in Bhutanese banking sectors can be definitely enhanced in the future as it is a meaningful topic to study.
- Many developed countries widely studied about Internet banking and none of the researches in Bhutan has investigated and done any kind of research on this particular topic.

1.4. Problem Formulation

During the time of this study there is no study carried out in Bhutan that identifies and explains factors affecting the consumers' adoption of Internet banking. Many of the developing countries are late adopter of the Internet and its applications with regards to Internet banking especially in Bhutan. In the last few years, banks in Bhutan have rapidly adopted Internet banking in order to satisfy the customers' needs where they can perform their financial transactions electronically using the Internet.

Most of the customers do not know about the Internet and its applications with regards to Internet banking services and this made them late adopters of Internet banking. Many difficulties are faced by the banks and customers of Internet banking users in Bhutan. There were not many customers using Internet banking services in Bhutan and following are some of the reasons that banks customers are reluctant to use Internet banking:

- Data and network security problems.
- Broken and slow Internet connections.
- Lack of awareness in Internet and its applications.
- Customers think that there will be loss of money through Internet if they use Internet banking.
- High expenses on Internet connections.

Many other developing countries have the same problems regarding the Internet and its applications. Therefore, this study is conducted in need of understanding customers' acceptance of Internet banking and identifying the factors that can affect their attitude to use Internet banking in Bhutan. So this study try to find responses to those investigations with the expectation and wishes that it may support the expansion of better Internet facilities for customers using Internet banking and will help the banking sectors to formulate their business strategies to uphold new forms of Internet banking systems in the future.

1.5. Objectives

The major objective of this research aims at enriching the information and accepting of factors affecting adoption of Internet Banking Services in Bhutan. Specifically, the objectives of this study are listed below:

- To investigate and analyze whether the two internal variables of TAM, PU and PEOU affect the customers' attitude towards the acceptance of Internet banking.
- To find out whether Security (SE) and Social Influence (SI) significantly impact customers' attitude towards the acceptance of Internet banking in Bhutan.
- To explain what factors mostly affect the customers' attitude towards adoption of Internet banking?
- Finally, to find out and analyze whether there is more effect from users or non-users on the acceptance of Internet banking.

1.6. Scope of the Study

Following are the scope of this research:

- A survey questionnaire was designed including two parts of questions. Part one consists of 11 items for demographic background of the respondents. 20 items in part two that the respondents needed to rate their agreements on statements based on 5-point Likert scale ranging from '1' for strongly disagree, '2' disagree, '3' neutral, '4' agree and '5' for strongly agree.
- Whole set of questions were written and presented in English to all the random respondents.
- Sample data were collected from four different districts in Bhutan.
- Respondents are selected randomly based on the following categories:
- Age group: 18-30; 31-40; 41-50; 51-60 and above 60.
- Qualification: high school, bachelor's degree, master's degree, Ph.D. and others.
- Occupation: government employee, co-operate sector, private sector, students and others.
- The sample data were collected from the banks' customers randomly based on two types of respondents i.e. experienced users and inexperienced users of Internet banking services.
- The data collection period was for 1 month and data were collected based on survey through hardcopy.

1.7. Expected Outcomes

The expected outcomes from this study are described below:

- This study will help in general encouragement of the Internet banking services and educate probable customers about Internet banking in Bhutan.
- The factors studied in this study will possibly guide and support different banks to inspire and encourage customers to adopt Internet banking.

1.8. Structure of the Thesis

This thesis is organized into 6 chapters and the structure is described below:

Chapter 1:

This chapter contains introduction and the research overview, background of the study, motivation, objective, scope of the study, expected outcomes and structure of this study are presented and explained.

Chapter 2:

In this chapter the theoretical background is presented in detail with the conceptions of Internet banking and the proposed research model.

Chapter 3:

Chapter 3 describes the methodology adopted in carrying out this study.

Chapter 4:

This Chapter provides the methods of analyzing the collected data.

Chapter 5:

Chapter 5 describes the discussions.

Chapter 6:

Finally, the conclusion including its practical implication of the research, contribution of the study, limitations and further research are drawn in chapter 6.

CHAPTER II

LITERATURE REVIEW

This chapter is structured into several topics. First, it presents basic ideas of Internet banking, definitions of Internet banking and Internet banking in Bhutan. Second, this chapter outlines the theoretical frameworks. Third, it describes the factors affecting the customers' attitude in acceptance of Internet banking. Finally, the chapter concludes by research model and hypotheses development.

2.1. Internet Banking

Internet banking is also known as 'Online banking' synonymously. The first online services started in the year 1981 in New York offering home banking services using the videotex system by the four city's major banks (Citibank, Chase Manhattan, Chemical and Manufacturers Hanover) according to a research by Koskosas (2011). Basically, Internet banking is a type of online services such as loan application, account balance inquiry, fund transfer and so forth where the customers can access their bank through Internet. Banks in Singapore viewed Internet banking services as a strategic move to provide total distribution of networks to their customers as pointed out by Tan and Teo (2000). Moreover, Internet banking in Singapore primarily offers traditional services (such as checking account, transfer funds) instead of providing advanced services like brokerage. In USA, the first bank that appears to begin providing services on the Internet and Internet banks was Security First National Bank (Tan & Teo, 2000).

2.1.1. Definition of Internet Banking

Internet banking refers to banking services provided by banks through the Internet where there are great benefits to both consumers and banks such as services introduction, account balance inquiry, bills payments, fund transfer and many more. According to Basel committee on banking supervision ("Risk management for electronic banking and electronic money activities," 1998), defined the Internet banking as "the provision of retail and small value banking products and services through electronic channels. Such products and services can include deposit-taking, lending, account management, the provision of financial advice, electronic bill payment, and the provision of other electronic payment products and services such as electronic money."

2.1.2. Benefits of Internet Banking

There are various and number of great benefits from Internet banking services to both banks and consumers. Internet banking has developed into a one-step service and information unit all over the world. Banks worldwide like other businesses are adopting Internet banking services to improve business efficiency, service quality and also to attract new customers. For Internet banking we don't have to purchase any software, no need to back up any information or store any data on your computer because every transaction occur on banks server over the Internet (Baraghani, Zegordi, & Khalifa, 2008). We can conduct banking services from anywhere such as at home, at office or place outside the country at any time (i.e. 24/7) but only thing we need to have is Internet connection. Following are some of the key benefits of the Internet banking services to both banks and consumers:

- Customer's convenience: Internet banking will be open 24/7 for business anywhere there is an internet connection and real-time account balance and information are available. This facility makes banking faster, easier and more efficient.
- Services: Many other services are provided by Internet banking such as online bill payments, online tax forms, etc. Therefore, customers do not face problems of handling huge amount of money, making bill payments and do not have to wait in a long queue for financial activities.
- Transfers: Money can be transferred at any time from one to another account automatically through electronic transfer.
- Ease of use: Online accounts are very easy to set up and do not require more information compared to traditional bank account.
- Environment friendly: Internet banking through electronic requires no paper work; reduce vehicle traffic and pollution free. Moreover, the need for buildings and office equipment are drastically diminished.

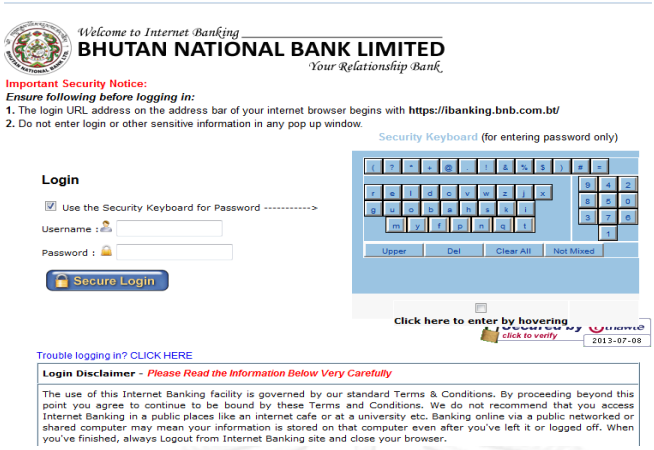
2.1.3. Internet Banking in Bhutan

Bhutan is a small country surrounded by land in South Asia, sited in the eastern Himalayas, and bounded by India and China. A population of about 716,896 (July 2012 est.), the country has a small economy that is less developed. On the other hand, the banking system acts an important part in the evolution

and progress of the country. According to the study conducted by Rahut, Castellanos, and Sahoo (2012), they found that “the return on equity (ROE) of the financial institutions in Bhutan are comparable to that of international banks and the development of the financial sector in Bhutan has contributed to the growth of the Bhutanese economy”. The main purpose of this study is to find out the major factors for internet banking adoption in Bhutan in order to identify more easily that what factors to be considered the most when banks provide banking services over the Internet. However, the Internet service in Bhutan was introduced very late which was established on 2nd June 1999 and the first Internet Service Operator was DrukNet (Tshering, 2013). As per Central Intelligence Agency ("The Work of a Nation. The Center of Intelligence," 2013), the Internet users in Bhutan was around 50,000 that was estimated in the year 2009 and 14,590 internet hosts estimated in 2012. Internet banking in Bhutan is still in its early stage and many of the customers are not aware of it since it’s in the developing process at the current situation. As of now, there are four banks in Bhutan specifically that provides the facility of internet banking services to the customers from a total of five banks and two non-bank financial institutions. They have their own websites on the Internet and each bank’s user interface for the Internet banking services are designed differently. The four banks that provide the Internet banking services are Bank of Bhutan Ltd. (BOB) shown in Figure 2.1, Bhutan National Bank Ltd. (BNB)shown in Figure 2.2, Druk Punjab National Bank Ltd. (Druk PNB) shown in Figure 2.3 and Tashi Bank Ltd. (TBank) shown in Figure 2.4. The Royal Monetary Authority (RMA) of Bhutan serves as the central bank of Bhutan which was established in 1982 and has the authority to control and regulate the financial sectors in formulating the monetary policy (Rahut et al., 2012).

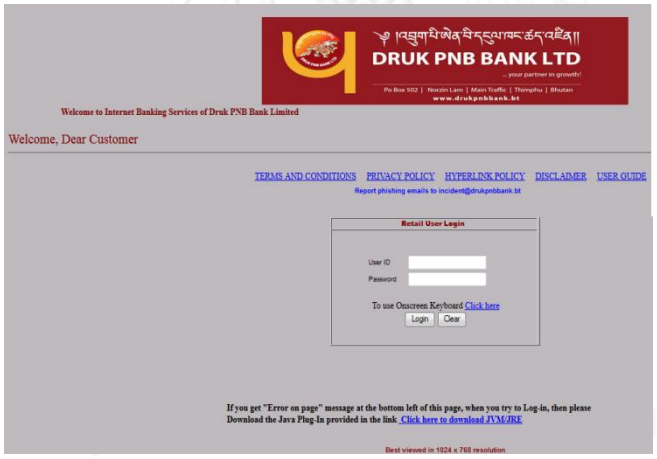
Source: https://netbanking.bob.bt/bobnetbanking/ retrieved on 14/02/2014

Figure 2. 1: User Interface of Bank of Bhutan (BOB)



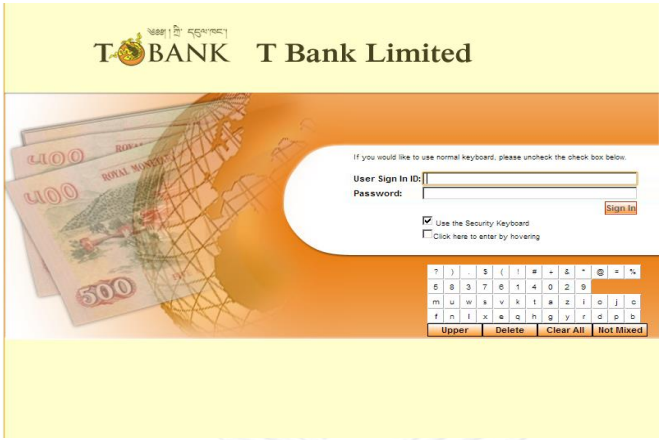
Source: https://ibanking.bnb.com.bt/entry/Login.html retrieved on 14/10/2013

Figure 2. 2: User Interface of Bhutan National Bank (BNB)



Source: https://www.onlinepnbglobal.com retrieved on 14/10/2013

Figure 2. 3: User Interface of Druk Punjab National Bank (Druk PNB)



Source: https://netbanking.tbank.bt/B001/login retrieved on 14/10/2013

Figure 2. 4: User Interface of Tashi Bank (T-Bank)

Bhutan has introduced and launched the first Internet banking services to the customers by the oldest bank, Bank of Bhutan (BOB) in the year 2009 together with short message service (SMS) banking by Bank of Bhutan ("Quarterly Newsletter," 2009). One of the main reasons that many customers are reluctant of using Internet banking services in Bhutan is the concern of security which is very important. However, people are also not aware about the Internet banking services and its benefits.

2.2. Theoretical Framework

2.2.1. Technology Acceptance Model (TAM)

In order to investigate and analyze the factors that have significant impact on customers' attitude towards acceptance of Internet banking in Bhutan, this study adapted the function of the technology acceptance model (TAM) including two external variables namely security and social influence. TAM is one of the most widely used and applied models especially for studying the user acceptance of Information Systems (F. Davis, D., Bagozzi, & Warshaw, 1989), (Sabah Abdullah Al-Somali, Gholami, & Clegg, 2008). TAM was originally introduced and defined by F. D. Davis (1989) and was an adaptation of Theory of Reasoned Action (TRA) by Ajzen and Fishbein (1973). TRA is actually used to describe an individual's social behavior which is influenced by his or her attitude towards the behavior (Suh & Han, 2002). Since the focus of this study is on users'

attitude towards acceptance of Internet banking, TAM model have been adapted as illustrated in Figure 2.5.

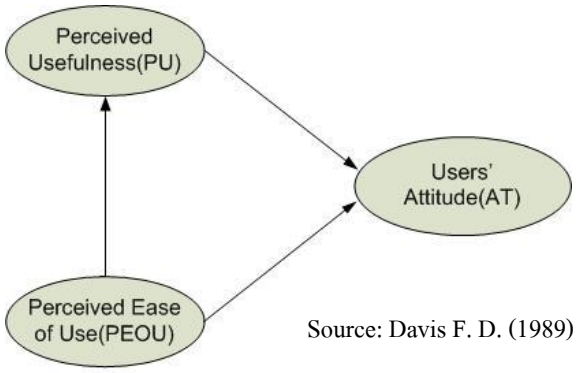


Figure 2. 5: Adapted Technology Acceptance Model (TAM)

2.2.2. Extended Technology Acceptance Model (ETAM)

TAM is considered as one of the most appropriate and well known models that have been used in many of the research papers in understanding the user's acceptance of Internet banking and adoption of online systems (M. C. Lee, 2009) and (F. D. Davis, 1989). This study adapted TAM involving its two primary internal variables- perceived usefulness (PU) and perceived ease of use (PEOU) of technology as the main determinants to study the customers' attitude towards adoption of Internet banking in Bhutan. Since these two variables may not fully explain the customers' attitude towards acceptance of Internet banking, this study further adapted and extended the model including two more important factors, namely Security (SE) and Social Influence (SI) where security is considered to be the main concern for the customers before they really adopt Internet banking.

2.3. Important Factors Affecting Customer Adoption of Internet Banking

There are various factors influencing the adoption of Internet banking. In this study we have considered the two mostly applied variables defined by F. D. Davis (1989) and further included two most important external variables that have greater effects on customers' attitude in acceptance of Internet banking particularly in Bhutan. These four factors with attitude as dependent variable have been described below.

2.3.1. Internal TAM Variables (Perceived Usefulness and Perceived Ease of Use)

TAM primarily consists of two mostly applied and used constructs, perceived usefulness (PU) and perceived ease of use (PEOU). PU is defined as "the degree to which a person believes that using a particular system would enhance his or her job performance" where as in contrast, PEOU is defined as "the degree to which a person believes that using a particular system would be free of effort" (F. D. Davis, 1989). User acceptance of Internet banking has been studied and modeled using three widely applied models, TAM, TPB and TRA by Rouibah, Ramayah, and May (2011) in Malaysia. The result in the study found TAM model to be the best explanatory power, followed by TPB and TRA models. Perceived usefulness (PU), perceived ease of use (PEOU) and attitude was found to be significant and has positive impact towards adoption of Internet banking as mentioned by Baraghani et al. (2008). Moreover, PU and PEOU are tested to be most important determinants to user acceptance of technology (Suping & Yizheng, 2010). In the study carried out by D. Lee, Park, and Ahn (2001), the two internal TAM variables (i.e. PU and PEOU) have well explained the adoption of e-Commerce and this study have obviously shown that to convert Internet browsers into real buyers, PU and PEOU are the main factors that must be improved greatly.

2.3.2. Security

According to M. C. Lee (2009), security is defined as "a potential loss due to fraud or a hacker compromising the security of an online bank user". In the study of e-commerce system, Susanto, Lee, and Zo (2011) pointed out that the security is the main concern of consumer reluctance to accept and use electronic commerce. Privacy and security are the most vital concerns that consumers have when dealing with Internet banking services. One of the main factors that slow down the adoption of Internet banking in New Zealand is security and was found that further improvement should be considered in order to satisfy customers' requirements (Winnie & John, 2002). The security has significant effects on the perceived usefulness and perceived ease of use in the acceptance of Internet banking (Sabah Abdullah Al-Somali et al., 2008). A study performed by Sathye (1999), 75% of the total respondents had security concerns and found out that the customers using Internet banking in Australia mainly concern on the security and their lack of awareness and its benefits are the main obstacles to adopt Internet banking. If the security is the main concern in any of

the organizations, then the perceived usefulness of the Internet banking will definitely decrease. In the experimental results of the study carried out by Ochuko, Cullen, and Neagu (2009), the security was found to be the most important factor in the adoption of Internet banking and the adoption rate was at the lowest level because there are low security levels. If the security of the services provided by banks is high and more secure, customers will have more trust on using the services especially in the case of Internet banking services. Therefore, Azim, Ali, and Sattar (2011) shows trust in the services provided by banks to be the main reason for the customers to use the services, which indirectly indicates that high security is important in the services.

2.3.3. Social Influence

Social influence refers to "the degree to which an individual perceived that important others believe he or she should use the new system" (Suping & Yizheng, 2010). In other words, the people around him or her will have some influences on using the new technologies. They also pointed out that social influence is considered to be one of the most important factors that have been testified to be really significant determinant of users' acceptance of Information systems. Social influence is supposed to be primary variable in determining the acceptance of various information technologies in relation to the unified theory of acceptance and use of technology (UTAUT) and the results in the study strongly supported the UTAUT model in predicting user acceptance of Internet banking (D. Cheng, Liu, & Qian, 2008).

2.3.4. Customer's Attitude

Attitude is defined as "a person's perception towards Internet banking" (Tan & Teo, 2000). Attitude of the customers towards the acceptance of information technology is the important component or the factor considered and studied in many of the prior studies (Tan & Teo, 2000), (Rouibah et al., 2011) and (Baraghani et al., 2008). In the study conducted by Rouibah et al. (2011), it was found that attitude has the highest value of beta in user acceptance of Internet banking when tested the explanatory power using three mostly used models (TAM, TPB and TRA).

2.4. Research Model

The development of research model and its hypotheses are based on the adaption of technology acceptance model (TAM) extending the model including two more external variables, security(SE) and social influence (SI) which is considered to be the most important factors influencing the users' attitude towards acceptance of Internet banking in Bhutan. TAM was widely used to explain the acceptance of information systems (IS) in many of the prior studies mainly because it is effective, highly consistent, valid and robust predictive model (Sabah Abdullah Al-Somali et al., 2008) and (M. C. Lee, 2009).

2.4.1. Proposed Research Model

The proposed research model is graphically illustrated in Figure 2.6. There are five factors with attitude as dependent variable in the model. The other four factors are perceived usefulness, perceived ease of use, security and social influence. With the help of this model, we can test each hypothesis and analyze the robustness of the model in predicting the customers' attitude to accept Internet banking.

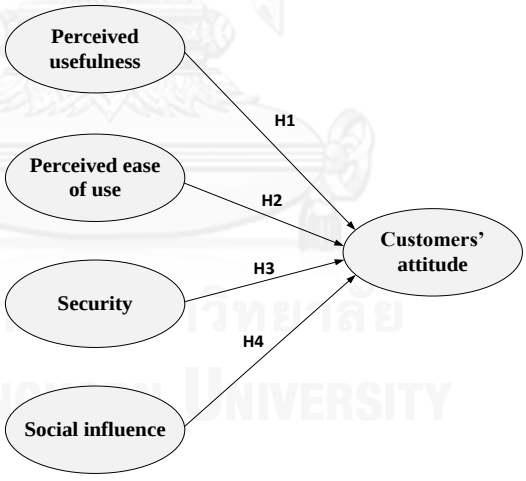


Figure 2. 6: The proposed hypotheses research model

2.4.2. Hypotheses Development

This section describe several hypotheses proposed in the theoretical model based on the adaption of TAM model including the two external variables, security and social influence regarding the customer attitude towards the

acceptance of Internet banking. Each of the hypotheses based on its factor are described below.

H_1: Customers' perceived usefulness has a positive impact on his/her attitude towards using Internet banking.

H_2: Customers' perceived ease of use has a positive impact on his/her attitude towards using Internet banking.

H_3: Security has a direct positive relationship with customers' attitude on using Internet banking.

H_4: Social influence has a positive impact on customers' attitude towards using Internet banking.

CHAPTER III

METHODOLOGY

This chapter discusses the research methodology of the thesis. The research purpose and approach are presented in this chapter followed by sampling, measurement of constructs, questionnaire, and data collection. Finally it presents quality standard looking into reliability and validity of measurements used in this research.

3.1. Research Purpose

The purpose of the research depends on the nature of the research problem and research can be sorted out into different types. In the last few years, banks in Bhutan have rapidly adopted Internet banking in order to satisfy the customers' needs where they can perform their financial transactions electronically using the Internet through banks' websites. Therefore, this study is conducted to investigate and find out what factors impact customers' attitude towards the adoption of Internet banking in Bhutan.

3.2. Research Approach

Factors affecting customers' attitude towards acceptance of Internet banking have been studied in many of the countries but none of the researches in Bhutan have carried out this study. The main goal of this study is to find factors influencing adoption of Internet banking from customer point of view. Therefore, the customer's attitude towards the adoption of Internet banking was jointly studied and predicted by the following factors:

1) Perceived usefulness
2) Perceived ease of use
3) Security
4) Social influence

In order to achieve this, we have chosen a structured framework and developed research hypotheses. A research strategy of survey was conducted collecting data from four different regions of Bhutan and the data collected were analyzed from the sample customers and generalized the data to population. Quantitative research method was used for this research.

3.3. Sampling

A survey questionnaire was developed and used to collect data from four different districts in Bhutan, namely, Bumthang in the central, Thimphu and Paro in the west, Gelephu in the south. The sample of data was collected from four different banks' customers who were internet users. The respondents are randomly selected from experienced users and inexperienced users of Internet banking. The duration for the data collection was approximately one month from mid of March to the mid of April 2012.

Table 3. 1: Summary of sampling

Elements	Experienced users and Inexperienced users of Internet banking
Sampling Unit	Customers of four different banks in Bhutan
Duration	15 March to 15 April 2012 (Approximately one month)

3.4. Measurement of Constructs

After extended literature review we have developed an appropriate research constructs. The items for the constructs were mainly developed based on the constructs of perceived usefulness, perceived ease of use, security, social influence and attitude. Perceived usefulness and perceived ease of use containing four items each were mainly adapted from the measurements explained and defined by T. Cheng, Lam, and Yeung (2006), M. C. Lee (2009) and Sabah Abdullah Al-Somali et al. (2008). Attitude was adapted from the measurements defined by M. C. Lee (2009) and T. Cheng et al. (2006) including four items for the construct. The items for the construct, security was adapted from the measurement developed by Sabah Abdullah Al-Somali et al. (2008) and Sabah A. Al-Somali et al. (2009) included four items. Lastly, the items for social influence was adapted from the measurement defined by Sabah A. Al-Somali et al. (2009) including three items. More details about the constructs and items for the development of the questionnaire were given in Appendix A. Table 3.2 below shows the constructs with definitions and their corresponding measurements sources applied for the questionnaire.

Table 3. 2: Definition of constructs

Constructs	Definition	Source
Perceived Usefulness	The degree to which a person believes that using a particular system would enhance his or her job performance.	Davis et al., 1989.
Perceived Ease of Use	The degree to which a person believes that using a particular system would be free of effort.	Davis et al., 1989.
Security	A potential loss due to fraud or a hacker compromising the security of an online bank user.	Lee, 2009.
Social Influence	The degree to which an individual perceived that important others believe he or she should use the new system.	Suping & Yizheng, 2010.
Attitude	A person's perception towards Internet banking.	Tan & Teo, 2000.

3.5. Questionnaire

The questionnaire was developed after extensive literature review and the final questionnaire consists of two parts. The first part includes the demographic characteristics (such as gender, age, qualification, occupation, internet access location and experiences about using Internet banking) in order to gather basic information about the respondents. The second part comprises of items for the constructs where the respondents can rate based on five-point Likert scale, ranging from 1-strongly disagree to 5-strongly agree.

To make sure that the questionnaire was reliable and valid; all the items selected for each construct were mainly adapted from prior studies. The survey questionnaire was pre-tested by three Bhutanese students studying masters' degree in Thailand who has more than two years of experience in Internet banking mainly to identify any gaps or inconsistencies. Before conducting the real survey, pilot study was conducted by 10 respondents in order to make them comment any issues related to the structure of language and response options. Therefore, the final version of the questionnaire was well developed with appropriate and necessary changes as presented in the Appendix B.

3.6. Data Collection

A survey method was used in this study for data collection and the data were collected from four different districts in Bhutan as shown clearly in the Table 3.3. As mentioned earlier the main goal of this study is to find factors affecting the adoption of Internet banking, the sample data was drawn randomly from customers of different banks both with experienced and inexperienced users of Internet banking services. The duration for data collection was for one month from 15th of March to 15th of April 2012. A total of 350 questionnaires were randomly distributed, out of which 279 responses were returned yielding a response rate of 79.7%. Six of the questionnaires were incomplete and invalid. Therefore, the sample size of 273 was used in this study.

Table 3. 3: Name and location of districts for data collection

Region	Name	Location	No. of samples
A	Thimphu	West	102
B	Paro	West	55
C	Bumthang	Central	54
D	Gelephu	South	68
Total			**279**

CHAPTER IV

DATA ANALYSIS

This chapter presents and describes the analyzing of data collected. SPSS software package was applied for analyzing the data collected. It also outlines the method for data analysis, demographic and descriptive statistics, and the results and the hypotheses testing. Additionally, we also have the Chi-Square tests and analyzed the data collected based on the two categories of respondents i.e. experienced and inexperienced users of Internet banking. Finally, this chapter concludes with the comparison between Bhutan and Vietnam countries regarding the factors influencing adoption of Internet banking.

4.1. Data Analysis Method

The latest version of statistical package, 'IBM SPSS Statistics 20' was applied in order to run reliability; factor analysis and regression analysis to test the proposed hypotheses research model and analyze the factors that influence customer attitude towards acceptance of Internet banking. This approach was chosen because SPSS is widely used. Besides, it is easy to use, more user friendly and does not require coding. The output that is presented by SPSS is also simple and easy to understand.

4.1.1. Reliability, Factor and Regression Analysis.

In analyzing the data, the three main components/procedures of SPSS were used namely, reliability analysis, factor analysis and regression analysis. First of all, Reliability which means assessing the internal consistency and content validity of the instruments tested using Cronbach's alpha coefficient. It was said that 0.70 is the recommended reliability measure (Sabah Abdullah Al-Somali et al., 2008), but lower than this values are also used and accepted. Since, there is less awareness on Internet banking in Bhutan, respondents are not clear on few questions constructed. Hence, the Cronbach's alpha higher than 0.511 was generated considering only the beneficial items.

Second, factor analysis was used to determine the underlying variables that explain the correlations within a group of selected items in each variable. The correlation measures between the items and factors (i.e. factor loading) were observed and renamed in the results for each factors. Only effective items with varimax rotation within the factor analysis were left. Finally, five reliable factors

of the total questions are classified. Moreover, several criteria are used in factor analysis to get the best set of questions under each factor as follows:

1. The factor loading of greater than 0.5 is considered for significant.
2. Cronbach's alpha values for each factor extracted and measure should be greater than 0.5.

Finally, regression analysis is applied to find out which factors affect customer's attitude towards the acceptance of Internet banking. For this purpose, regression analysis was done to find out what factors affect customers' attitude.

4.1.2. Chi-Square Test

Categorical analysis using chi-square is applied in this study to make comparison between gender and various factors. We have also drawn comparison between experienced users with various factors that affects customers attitude in adoption of Internet banking. The definition of the chi-square is a statistical test to compare the data that we have collected for the existence of a relationship between two variables whether the variation in the data is due to chance or one of the variables that we are testing. The given equation below represents how to calculate chi-square:

$$x_C^2 = \sum \frac{(Oi - Ei)^2}{Ei}$$

Where,

x_C^2=chi-square

Oi=observed value

Ei=expected value

4.1.3. An Independent Samples t-Tests

An independent samples t-test is used to compare differences between separate groups which are often composed by randomly assigning research participants to certain conditions. The average values of a characteristic measured on a continuous scale between two sub-groups of a categorical variable are compared. In this section we find the relationships between the

occupations of banks' customers using Internet banking which has been divided into two sub-groups of customers as government employee and private employee. Following hypothesis has been defined and assessed.

Hypothesis:

Null Hypothesis (H_0): There is no significant difference between customers' occupation on their attitude based on the factors.

Research Hypothesis (H_1): There is a significant difference between customers' occupation on their attitude based on the factors.

The formula for the independent samples t-test is:

$$t = \frac{\overline{X}_1 - \overline{X}_2}{\sqrt{\frac{S^2_{x_1}}{n_1} + \frac{S^2_{x_2}}{n_2}}}$$

Where, $\overline{X}_1$ = mean of sample 1

$\overline{X}_2$ = mean of sample 2

$S^2_{x_1}$ = variance of sample 1 = $\frac{\sum(X_1 - \bar{X}_1)^2}{n_1}$

$S^2_{x_2}$ = variance of sample 2 = $\frac{\sum(X_2 - \bar{X}_2)^2}{n_2}$

n_1 = number of subjects in sample 1

n_2 = number of subjects in sample 2

4.1.4. A One-way ANOVA Test

A one-way between subjects analysis of variance (ANOVA) is applied to determine whether there is any significant difference between the means of age groups (independent variables) on regard to the factors in this study that affects customers' attitude towards the acceptance of Internet banking. So, we have conducted this analysis to understand whether the customers of different age groups, divided into three independent groups (i.e. below 30, 31-40 and above 40) differs in adoption of Internet banking based on the factors determined in this study. We are interested to find out whether the means for these three groups are

significantly different from one another or whether they are relatively the same. The factors defined as dependent variables has numerical values that are measured in continuous scale and they were analyzed using one-way between subjects ANOVA to compare the effect on their attitude towards the adoption on Internet banking by their age groups (i.e. below age of 30, 31 to 40 and above age of 41) as independent variable that has approximately equal variance on the dependent variable and measured on nominal scale or categorical in nature. Following is the hypothesis that we have defined and tested to find the significant relationships between age groups of the customers.

Hypothesis:

Null Hypothesis (H_0): No significant difference exists between customers' age groups towards the adoption of Internet banking with regard to the factors defined in this study.

Research Hypothesis (H_1): A significant difference exists between customers' age groups towards the adoption of Internet banking with regard to the factors defined in this study.

4.2. Demographic and Descriptive Statistics

From a sample size of 273 respondents collected in this study, 62% of the respondents were male and the remaining 38% were female. Therefore, looking at the ratio of gender we can understand that large number of males are adopting and using Internet banking in Bhutan. The majority of the respondents (89%) were below 40 years old with 44% in 18-30 years old category followed by 45% in the 31-40 years old. This result clearly shows that young customers are adopting Internet banking more than the elders ones. The largest proportions (54%) of the respondents by qualification were bachelor's degree and 25% high school. Therefore, as a whole the survey respondents were well educated and highly qualified. 73% of the respondents by occupation were from government employee followed by private sectors (12%). About 68% of the respondents preferred to use internet at home and at work and only 10% of the respondents prefer to use Internet in the public places such as in Internet café. 19% of the respondents have shown Internet banking as their preferred method for performing banking transactions and about 22% of the respondents prefer to visit banks to conduct their financial transactions. The largest proportions of the respondents (57%) carry out ATMs usage as the main means to conduct banking transactions and only 2% of the respondents prefer to use telephone for their

banking transactions. However, from this survey 59% of the respondents were Internet banking users and 41% of the respondents were non-users which is almost equal in proportion to be analyzed. For more detail, the demographic characteristics are shown in Table 4.1.

Table 4. 1: Demographic characteristics (N=273)

Variable	Classification of Variables	Frequency	Percentage (%)
Gender	Male	168	61.5
	Female	105	38.5
Age	18-30	119	43.6
	31-40	123	45.1
	41-50	22	08.1
	51-60	7	02.6
	60 and above	2	00.7
Qualification	High school	69	25.3
	Bachelor's degree	147	53.8
	Master's degree	47	17.2
	Ph.D.	1	00.4
	Others	9	03.3
Occupation	Government employee	200	73.3
	Co-operate sector	17	06.2
	Private sector	33	12.1
	Students	6	02.2
	others	17	06.2
Internet access location	At home	162	34.0
	At work	160	33.5
	At school	83	17.4
	In Internet café	46	09.6
	In a friend's place	22	04.6
	Do not use the Internet	4	00.8
Preferred methods for banking transactions	ATMs	256	57.3
	Visit banks	95	21.3
	Telephone	10	02.2
	Internet banking services	86	19.2
Categorization of respondents	Users	162	59.3
	Non-users	111	40.7
Years using Internet banking for users	Less than 1 year	66	40.7
	1 to 3 years	83	51.2

	3 to 5 years	10	06.2
	More than 5 years	3	01.9
Frequencies using Internet banking for users	Once a day	9	05.6
	Once a week	60	37.0
	Once a month	76	46.9
	Once a year	4	02.5
	Others	13	08.0

The graphical representations of demographic characteristics are shown in the following figures:

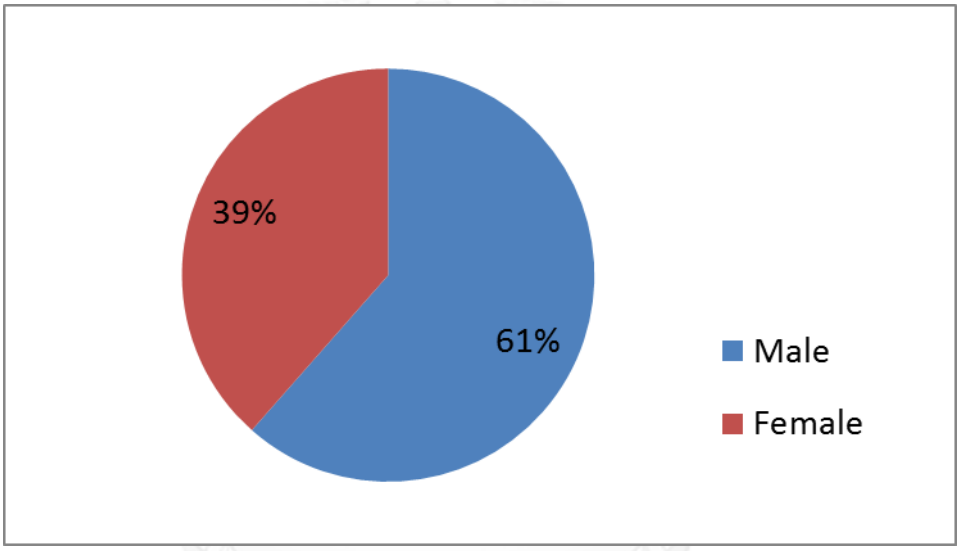


Figure 4. 1: Gender categorization

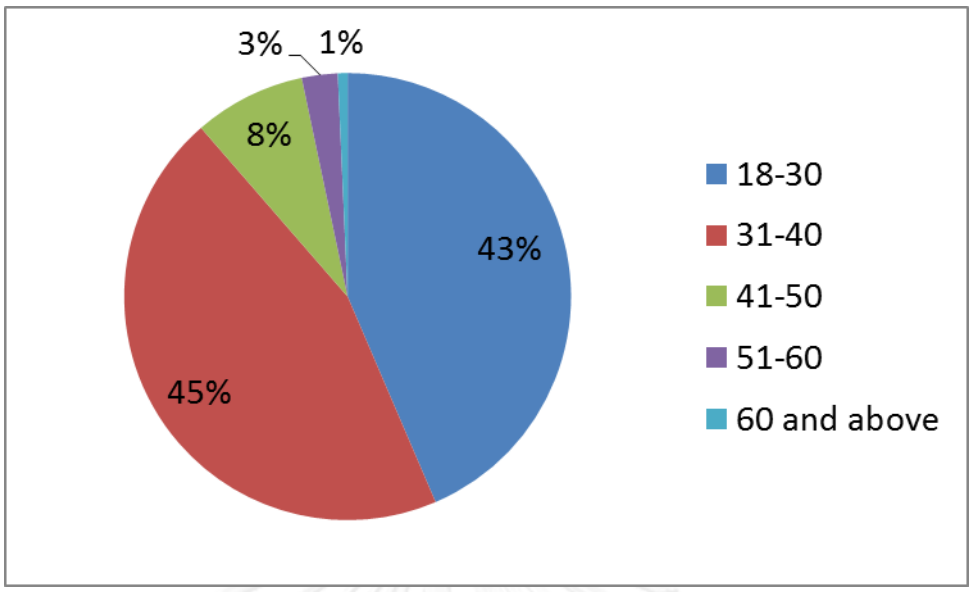


Figure 4. 2: Age categorization

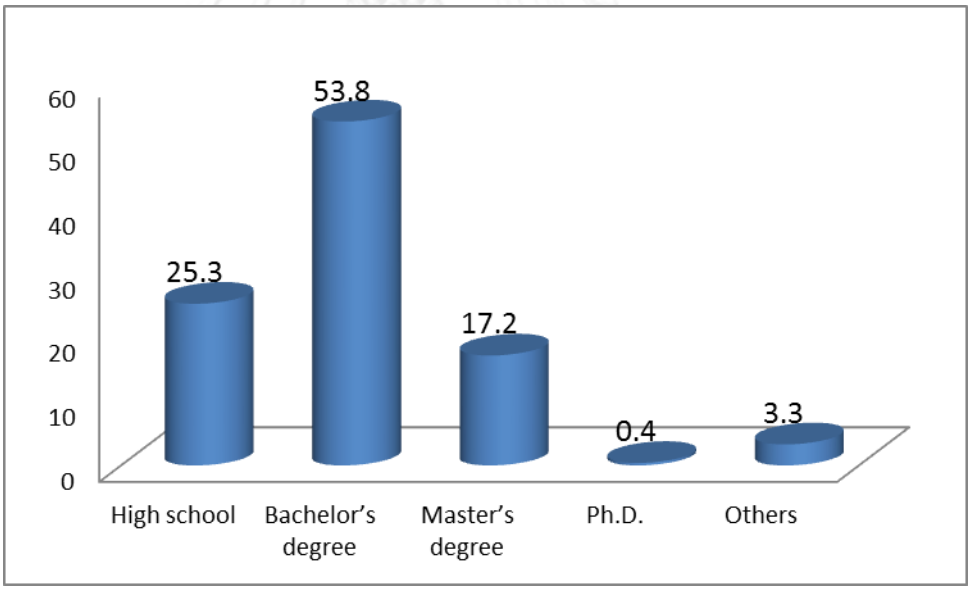


Figure 4. 3: Qualification categorization

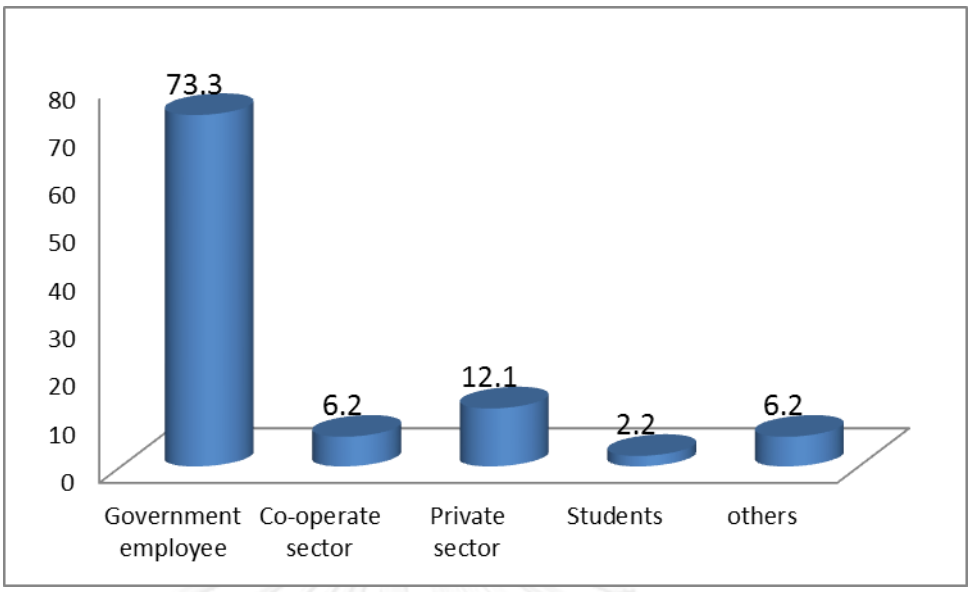


Figure 4. 4: Occupation categorization

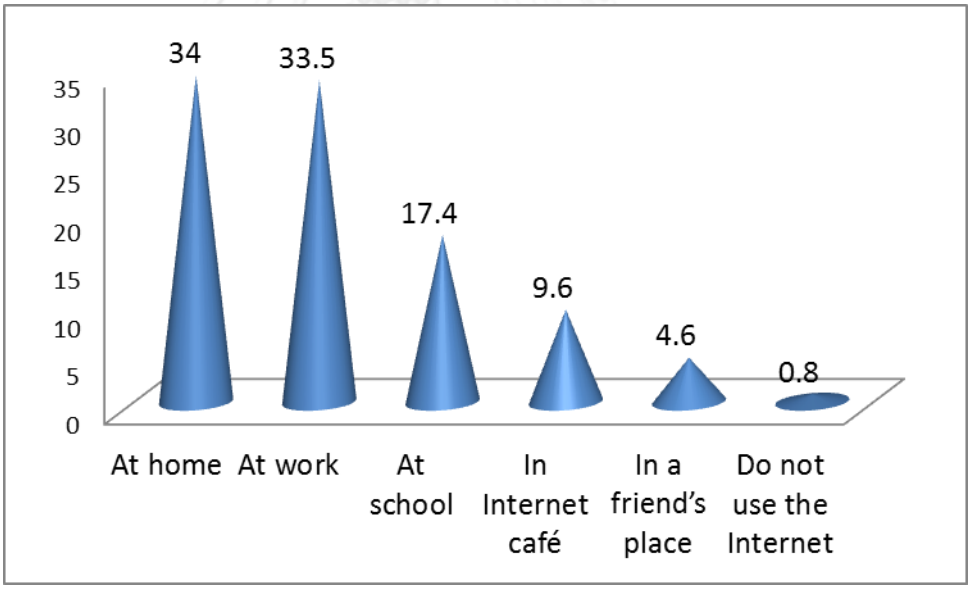


Figure 4. 5: Categorization of Internet access location

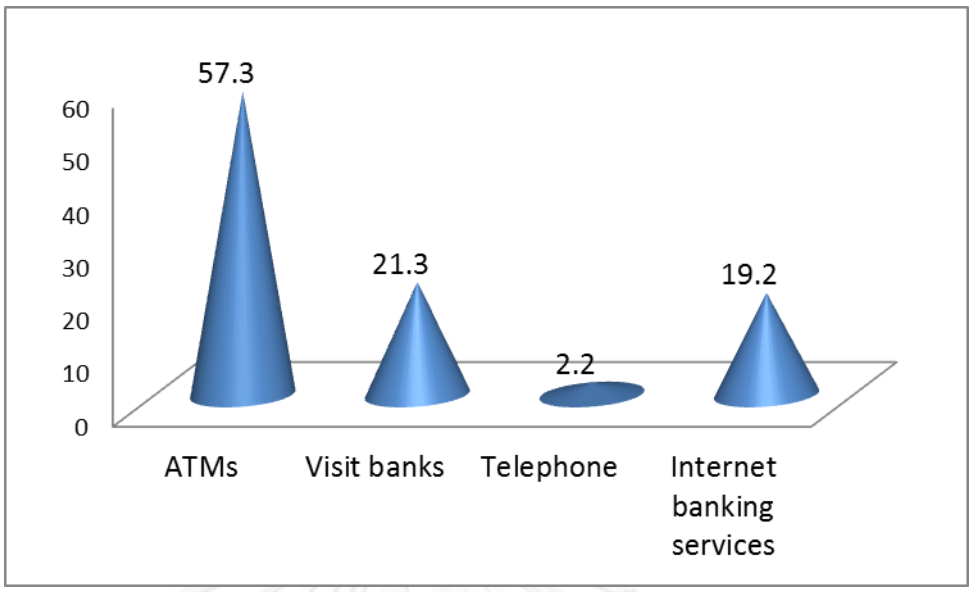


Figure 4. 6: Preferred methods for banking transactions

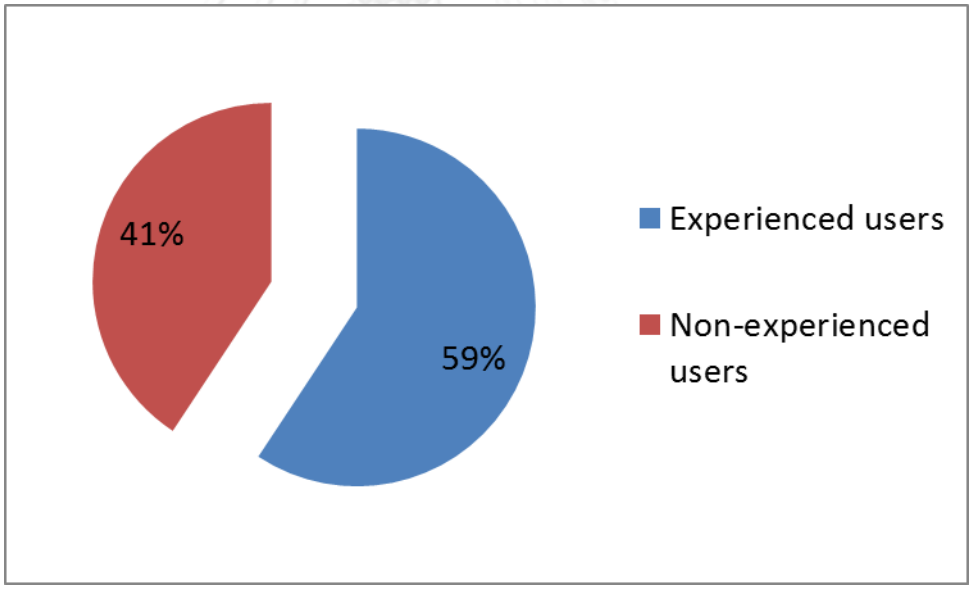


Figure 4. 7: Categorization of respondents

The following two figures represent the demographic information based on experienced users of Internet banking.

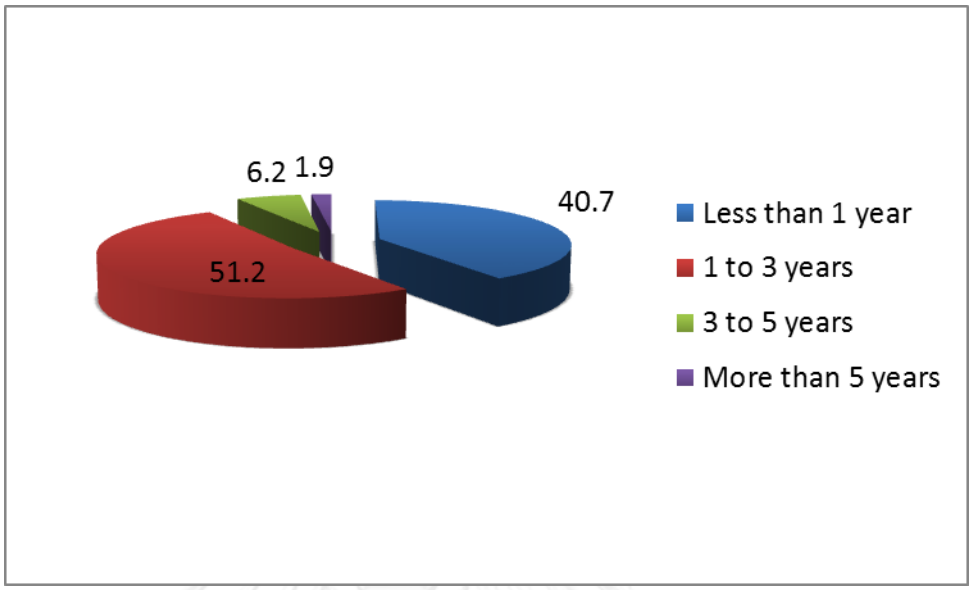


Figure 4. 8: Categorization of number of years experienced using Internet banking

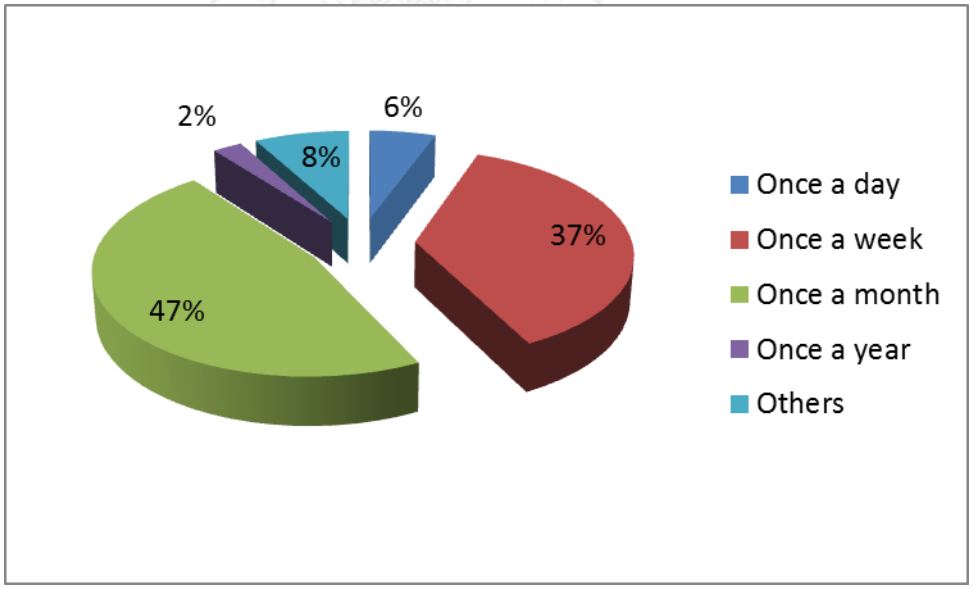


Figure 4. 9: Categorization of frequency using Internet banking

4.3. Results

4.3.1. Factor Analysis and Scale Reliability

The Cronbach's alpha has been calculated to assess the internal consistency and content validity of the instruments. It was said that 0.70 is the recommended value for Cronbach alpha (Sabah Abdullah Al-Somali et al., 2008). Table 4.2 indicates that in every case, the scales are within the acceptable range as recommended by Nunnally (1978). This implies that the measurement is good.

Table 4. 2: Factor analysis and reliability analysis

Latent constructs	Indicator	Factor loading	Cronbach's alpha(α)
Perceived usefulness (PU)	PU1	0.790	0.748
	PU4	0.734	
	PU3	0.697	
	PU2	0.628	
Perceived Ease of Use (PEOU)	PEOU3	0.830	0.689
	PEOU4	0.698	
	PEOU2	0.692	
Security (SE)	SE4	0.911	0.672
	SE3	0.765	
Social Influence (SI)	SI1	0.789	0.557
	SI3	0.772	
Attitude (AT)	AT4	0.836	0.823
	AT2	0.804	
	AT1	0.801	
	AT3	0.795	

4.3.2. Hypotheses Test

The hypotheses results for the proposed research model are illustrated in Figure 4.10. To point out, how well the model is performing, the R^2 and the beta coefficients are shown in the regression analysis and labeled in the model. R^2 explains the predictive influence of the model and the beta coefficients should be significant and reliable with positive effects. The customer's attitude towards the adoption of Internet banking in this study was jointly studied and predicted by perceived usefulness, perceived ease of use, security and social influence. It was found that PU (β=.457; p<.001) and social influence (β=.454; p<.001) has the

highest positive effects towards the customer's attitude. Meaning that hypothesis 1 and 4 was strongly supported. It was followed by PEOU (β=.308; p<.001) and security (β=.221; p<.001) that influenced customer attitudes towards using Internet banking, supporting hypotheses 2 and 3. The results of this study have shown that all the coefficients are significant at the 99% significance level providing strong support for all the hypothesized. Together these variables explained 55.3% (R^2=.553, coefficient of determination) of the variance of customer's attitude towards acceptance of Internet banking in Bhutan indicating a good explanatory power of the model. In this study, security has less positive impact or significant values influenced by customer attitudes towards adoption of Internet banking. However, the results provided strong support for social influence that has the highest positive impact on customer attitudes. The reasons for these results are discussed in detail in the discussion part.

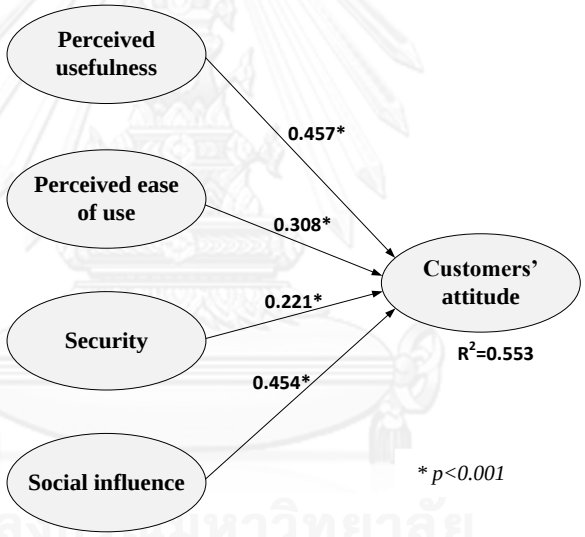


Figure 4. 10: Results of research model

4.4. Results of Chi-Square Test

We have formulated a hypothesis about different variables in this study to find the relationship between two variables. Different demographic characters were compared with different items such as gender with different items from the factors defined in this study. Experienced and inexperienced users of Internet banking with items explained in different factors. Following are hypotheses prepared and we have applied chi-square to test significant difference between the two variables.

4.4.1. Chi-square test between genders and items for the factors

We have conducted a chi-square test if men and women are significantly different in how they think about the security in using Internet to do money transactions. The following hypothesis was framed and tested to validate the differences between genders.

Hypothesis 1:

H_0: There is no difference between genders regarding the security of the Internet to do money transactions.

H_1: There is difference between genders regarding the security of the Internet to do money transactions.

The result shows that greater percentage of male strongly agreed and responded to the item "Using Internet to do money transactions is secure" compared to female. Therefore, the result has shown that there is statistically significant difference, X^2 (2, N = 273) = 7.26, $p < 0.05$ between genders and the security in using Internet to do money transactions in Bhutan. The reason for differences between the genders regarding the security of the Internet to do money transactions is mainly because more number of males are found to be using Internet banking than females. 51.2% of male strongly disagreed that using Internet to do money transactions is secure and 67.6% of female. For more details refer Table 4.3 below.

Table 4. 3: Result of chi-square analysis and cross-tab between gender and the security in using Internet to do money transactions.

	Male	Female	Total	P-Value
Strongly Disagree	86 (51.2%)	71 (67.6%)	157	0.026
Neutral	63 (37.5%)	25 (23.8%)	88	
Strongly Agree	19 (11.3%)	9 (8.6%)	28	
Total	168	105	**273**	

Customers of different banks have different attitude towards adoption of Internet banking and their attitude greatly affects the adoption rate. Therefore,

we have tested the significant difference between male and female with regards to their attitude with the item "I think that using Internet banking for financial transactions would be a wise idea" to find out if the opinion differs according to gender or not. So following hypothesis was framed and tested.

Hypothesis 2:

H_0: There is no difference between genders with regards to their attitude in using Internet banking for financial transactions.

H_1: There is a difference between genders with regards to their attitude in using Internet banking for financial transactions.

A chi-square test was performed and a statistically significant difference was found between genders and customers' attitude in using Internet banking for financial transactions, X^2 (2, N = 273) = 8.60, $p < 0.05$. The result has shown that 19% of the male strongly agreed to the statement whereas 10.5% of the female strongly agreed as depicted in Table 4.4. We know female are more reluctant to use Internet banking for their financial transactions because 41.9% of the female strongly disagreed compared to male with 26.2% that strongly disagreed.

Table 4. 4: Result of chi-square and cross-tab between gender and customers' attitude in using Internet banking for financial transactions.

	Male	Female	Total	P-Value
Strongly Disagree	44 (26.2%)	44 (41.9%)	88	0.014
Neutral	92 (54.8%)	50 (47.6%)	142	
Strongly Agree	32 (19.0%)	11 (10.5%)	43	
Total	168	105	**273**	

4.4.2. Chi-square test between experienced and inexperienced users of Internet banking with items for the factors

Four items were designed to measure the perceived usefulness of the banks customers' attitude towards the acceptance of Internet banking. We have tested the significant difference between the experienced and inexperienced user of Internet banking with these four items. Each of the relationships are described and explained below with their hypothesis.

Hypothesis 3:

H_0: There is no significant difference between users of Internet banking regarding the use of Internet banking to accomplish their tasks much quickly.

H_1: There is a significant difference between users of Internet banking regarding the use of Internet banking to accomplish their tasks much quickly.

From the results of chi-square we found that there is extremely statistically significant difference, X^2 (2, N = 273) = 25.78, p < .001 between users of Internet banking in terms of its usefulness in accomplishing their tasks much quickly as we can see that 63% of the experienced users strongly agreed and only 34.2% of non-users strongly agreed. Experienced users find Internet banking to be more useful to accomplish their tasks much quickly than inexperienced users as shown in Table 4.5 below. We can easily understand the reasons for differences between these two groups because the experienced users they already used the Internet banking and they know how useful it is in accomplishing their tasks much quickly compared to the inexperienced users. Therefore, 18.1% of the inexperienced users strongly disagreed that it's more useful to accomplish their tasks much quickly where only 4.9% of the experienced users strongly disagreed on this.

Table 4. 5: Result of chi-square and cross-tab between users and its usefulness in accomplishing their tasks much quickly.

	Experienced users	Inexperienced users	Total	P-Value
Strongly Disagree	8 (4.9%)	20 (18.1%)	28	0.000
Neutral	52 (32.1%)	53 (47.7%)	105	
Strongly Agree	102 (63.0%)	38 (34.2%)	140	
Total	162	111	**273**	

Hypothesis 4:

H_0: There is no significant difference between users of Internet banking regarding its greater control over financial banking activities.

H_1: There is a significant difference between users of Internet banking regarding its greater control over financial banking activities.

The result has shown that experienced users think Internet banking to be providing greater control over financial banking activities than inexperienced users of Internet banking, X^2 (2, N = 273) = 29.37, p < .001. Therefore, there is a statistically significant difference between users of Internet banking and their thinking about Internet banking as a greater control over financial activities. From the result we know that 18.5% of the experienced users have strongly agreed that Internet banking gives greater control over their financial banking activities whereas 10.8% of the inexperienced users have strongly agreed as shown in Table 4.6. The only reason between these two groups resulting in significant difference is because of their experiences in using Internet banking services as we can easily understand that experienced users might have better knowledge in using it than the inexperienced users. Thus, 64% of the inexperienced users have responded for strongly disagreed and only 30.9% of experienced users responded strongly disagreed.

Table 4. 6: Result of chi-square and cross-tab between users and their thinking about Internet banking as a greater control over financial activities.

	Experienced users	Inexperienced users	Total	P-Value
Strongly Disagree	50 (30.9%)	71 (64.0%)	121	0.000
Neutral	82 (50.6%)	28 (25.2%)	110	
Strongly Agree	30 (18.5%)	12 (10.8%)	42	
Total	162	111	**273**	

Here, we have tested to measure the significant differences between the users of Internet banking with three items of perceived ease of use. Two items

yielded significant difference when comparison was made except one. Following are the hypotheses created and analyzed.

Hypothesis 5:

H_0: There is no significant difference between users of Internet banking regarding the ease of use of Internet banking to do what they want to do.

H_1: There is a significant difference between users of Internet banking regarding the ease of use of Internet banking to do what they want to do.

In this result there is no statistically significant difference, X^2 (2, N = 273) = 5.32, $p > 0.05$, between the users of Internet banking and the perceived ease of use from the item "It is easy to do what I want to do using Internet banking". 31.5% of the experienced users strongly disagreed while 43.2% of the inexperienced users responded same. Table 4.7 presents the results in detail as shown below.

Table 4. 7: Result of chi-square and cross-tab between users and the easiness of using Internet banking.

	Experienced users	Inexperienced users	Total	P-Value
Strongly Disagree	51 (31.5%)	48 (43.2%)	99	0.070
Neutral	75 (46.3%)	48 (43.3%)	123	
Strongly Agree	36 (22.2%)	15 (13.5%)	51	
Total	162	111	**273**	

Hypothesis 6:

H_0: There is no significant difference between users of Internet banking regarding their overall expectation about Internet banking to use in future.

H_1: There is a significant difference between users of Internet banking regarding their overall expectation about Internet banking to use in future.

The result analysis has shown that there is statistically significant difference between Internet banking users about their expectation to use it easily in the future, X^2 (2, N = 273) = 8.91, $p < 0.05$. We can conclude that 34% of the

experienced users have responded strongly agreed regarding the overall expectation about Internet banking to use in future and 20.7% of inexperienced user as it is clearly shown in Table 4.8 below. The reason for significant difference between these two groups could be due to their experiences in using Internet banking as experienced users might expect to use more easily in future compared to inexperienced users because they don't have much idea about the Internet banking services.

Table 4. 8: Result of chi-square and cross-tab between users and their expectation to use it easily in the future.

	Experienced users	Inexperienced users	Total	P-Value
Strongly Disagree	21 (13.0%)	27 (24.3%)	48	0.012
Neutral	86 (53.0%)	61 (55.0%)	147	
Strongly Agree	55 (34.0%)	23 (20.7%)	78	
Total	162	111	**273**	

Hypothesis 7:

H_0: There is no significant difference between users of Internet banking regarding their consideration of using Internet banking if someone personally recommended it.

H_1: There is a significant difference between users of Internet banking regarding their consideration of using Internet banking if someone personally recommended it.

This result also found that there is significant relationship between the users of Internet banking and their consideration of using it if someone personally recommended it, X^2 (2, N = 273) = 7.78, $p < 0.05$. From the results we can say that 17.2% of the experienced users have strongly agreed and 10.8% of the inexperienced users have responded in the same manner. Also 34% of experienced users have responded that they strongly disagree about their consideration of using Internet banking if someone personally recommended it. Likewise greater numbers of respondents from inexperienced users (50.5%) have responded strongly disagreed. Since inexperienced users have little knowledge

about the Internet banking they are more reluctant to accept it compared to experienced users.

Table 4. 9: Result of chi-square and cross-tab between users and their consideration of using if someone personally recommended it.

	Experienced users	Inexperienced users	Total	P-Value
Strongly Disagree	55 (34.0%)	56 (50.5%)	111	0.020
Neutral	79 (48.8%)	43 (38.7%)	122	
Strongly Agree	28 (17.2%)	12 (10.8%)	40	
Total	162	111	**273**	

4.5. The Independent Samples t-Test Results

An independent samples t-test has been used to assess the differences in customers' attitude towards the acceptance of Internet banking by their occupational groups (defined as government and private employees) based on various factors. There are four different factors defined as dependent variables that affects customers' attitude in adoption of Internet banking. Therefore, we have tested each of the four factors to find out whether there are statistically significant differences between occupational groups of the customers towards the acceptance of Internet banking. So, these dependent variables have been measured as numerical values and the two occupational groups have approximately equal variance on the dependent variables.

An independent samples t-test was conducted to compare differences between occupations of a customer on the factor perceived usefulness. There is no statistically significant difference between the means of government employees (M= -.025, SD=1.026) and private employees (M=.068, SD=0.927) conditions; F = 0.722, t = -0.683 at p > 0.05 with regard to the factor perceived usefulness. Therefore, the null hypothesis was not rejected. This result shows that the factor perceived usefulness was considered to be relatively same by these two categories of customers' occupation in terms of its usefulness and convenience. More details about the results are shown in Table 4.10 below.

Table 4. 10: Result of independent sample t-tests between occupations and perceived usefulness.

	Levene's Test for Equality of Variances		t-test for Equality of Means						
	F	Sig.	t	df	Sig.(2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
								Lower	Upper
Equal variance assumed	.722	.396	-.683	270	.495	-.09359746	.13696955	-.36326160	.17606668
Equal variance not assumed			-.716	140.914	.475	-.09359746	.13067009	-.35192463	.16472972

Regarding perceived ease of use, there is statistically significant difference between the means of government employees (M= -.080, SD=1.031) and private employees (M=.221, SD=0.879) conditions; F = 0.730, t = -2.219 at $p < 0.05$, with regard to perceived ease of use by rejecting the null hypothesis. Therefore, the result shows that there was a significant relationship between customers' occupations in affecting their attitude by the factor perceived ease of use as shown in Table 4.11. The reason could be that the government employees must be receiving some kind of basic training on how to use Internet banking services. This might have some effect on their attitude towards using Internet banking in Bhutan.

Table 4. 11: Result of independent sample t-tests between occupations and perceived ease of use.

	Levene's Test for Equality of Variances		t-test for Equality of Means						
	F	Sig.	t	df	Sig.(2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
								Lower	Upper
Equal variance assumed	.730	.394	-2.219	270	.027	-.30148905	.13585453	-.56895795	-.03402015
Equal variance not assumed			-2.389	149.211	.018	-.30148905	.12620166	-.55086232	-.05211579

In the results we found that there is no statistically significant difference between the means of government employees (M= -.008, SD=0.938) and private

employees (M=.021, SD=1.160) conditions; F = 7.649, t = -.190 at p > 0.05 and the null hypothesis is not rejected. So, we could conclude that there is no significant difference between customers' occupation in relationship to the security of the Internet banking in Bhutan. The reasons behind this are because there are not many crimes and customers don't face problems about the security. Moreover, their friend who suggests and encourages them to use Internet banking assures them using it was highly secured. The details of results are depicted in Table 4.12 below.

Table 4. 12: Result of independent sample t-tests between occupations and security.

	Levene's Test for Equality of Variances		t-test for Equality of Means						
	F	Sig.	t	df	Sig.(2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
								Lower	Upper
Equal variance assumed	7.649	.006	-.209	270	.834	-.02867966	.13707683	-.29855501	.24119569
Equal variance not assumed			-.190	108.419	.850	-.02867966	.15113381	-.32823998	.27088066

Similarly, there is no statistically significant difference between the means of government employees (M= -.039, SD=1.004) and private employees (M=.106, SD=0.987) conditions; F = 0.290, t = -1.059 at p > 0.05, with regard to social influence and the null hypothesis was not rejected. Therefore, we could conclude that there is no significant difference between customers' occupation in relationship to the factor social influence towards the adoption of Internet banking in Bhutan. The reason for this result could be because of their friends, family and surrounding neighbors must have influenced them and many customers force each other to use the Internet banking facilities. People do trust each other in adoption of Internet banking services as Bhutanese people have very strong social relationship. More details about the results are shown in Table 4.13.

Table 4. 13: Result of independent sample t-tests between occupations and social influence.

	Levene's Test for Equality of Variances		t-test for Equality of Means						
	F	Sig.	t	df	Sig.(2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
								Lower	Upper
Equal variance assumed	.290	.591	-1.059	270	.290	-.14489261	.13680405	-.41423092	.12444570
Equal variance not assumed			-1.067	130.178	.288	-.14489261	.13573995	-.41343441	.12364920

4.6. A One-way ANOVA Test

4.6.1. Normality Test and Homogeneity of Variance

Statistical test for normality was conducted numerically to determine whether the data is normal or not. In this section we are interested to know if the participants' response is normally distributed or not based on the four factors by their age group that is defined as categorical independent variables. We have used a Shapiro-Wilk's test ($p>0.05$) (Shapiro & Wilk, 1965) for assessing normality as it is more appropriate with small sample sizes. The null hypothesis for normality test is that the data in this sample are normally distributed. The results of the normality test are clearly shown in Table 4.14. If the Sig. value of the Shapiro-Wilk is greater than 0.05, the data set is considered to be normal by accepting the null hypothesis. In the table given below we can see that for each factor the numbers of respondents based on their age groups are normally distributed and the significant values in all the age groups are greater than 0.05. However, under social influence in the age group of below 30 was found to be non-significant where the p-value is less than 0.05. By homogeneity test the equality of variances assumption is tested and a Levene's test verified the equality of variances in the samples (homogeneity of variance) with $p > 0.05$ in all the dependent variables. The result of test of homogeneity of variance is shown in the Table 4.15.

Table 4. 14: Normality test results

	Age	Shapiro-Wilk		
		Statistic	df	Sig.
Perceived Usefulness	Below 30	.980	119	.073
	Between 31-40	.982	123	.105
	Above 41	.955	31	.220
Perceived Ease of Use	Below 30	.986	119	.247
	Between 31-40	.988	123	.379
	Above 41	.968	31	.468
Security	Below 30	.992	119	.697
	Between 31-40	.985	123	.201
	Above 41	.955	31	213
Social Influence	Below 30	.972	119	.013
	Between 31-40	.979	123	.055
	Above 41	.956	31	.221

Table 4. 15: Test of Homogeneity of Variances

	Levene Statistic	df1	df2	Sig.
Usefulness	.054	2	269	.948
Ease of use	.356	2	269	.701
Security	.370	2	269	.691
Social influence	.016	2	269	.984

4.6.2. ANOVA Test Results

Perceived Usefulness

We have conducted one-way ANOVA test to find out whether there is a significant difference between age groups (independent variable) of a customer in regard to the factor perceived usefulness in relation to attitude towards the adoption of Internet banking. The result shown in Table 4.16 explains that there is no significant effect of age groups on the factor perceived usefulness at $p<0.05$ level for the three conditions [$F = 0.045$ and $p = 0.956$]. From these results we can say that there was no significant difference between the age groups of the customers in affecting their attitude towards adoption of Internet banking in

Bhutan. All those different age groups consider Internet banking to be useful and advantages in any banking activities.

Table 4. 16: Result of One-way ANOVA test between age groups towards the factor perceived usefulness

Perceived Usefulness		Descriptive				
		Mean			Std. Deviation	
	Below 30	-.015			.988	
	Between 31-40	.020			1.031	
	Above 41	-.022			.948	
	Total	0E-7			1.000	
		ANOVA				
		Sum of Squares	df	Mean Square	F	Sig.
	Between groups	.091	2	0.046		
	Within Groups	270.909	269	1.007	.045	.956
	Total	271.000	271			

Perceived Ease of Use

Here, PEOU (dependent variables) was tested to compare the effect of different age groups (independent variable) that directly affects customers' attitude towards the adoption of Internet banking. The results depicted in Table 4.17 shows that there was not a significant difference or effect by their age groups on this factor at $p<0.05$ level for the three conditions [$F = 1.333$ and $p = 0.265$]. As a whole the results suggests that there was no significant difference on customers' attitude by their age groups on this factor. Therefore, customers of different age groups consider Internet banking to be easy to use and they think that interaction with Internet banking does not require a lot of mental efforts.

Table 4. 17: Result of One-way ANOVA test between age groups towards the factor perceived ease of use

Perceived		Descriptive	
		Mean	Std. Deviation

Ease of Use	Below 30	-.096		.988		
	Between 31-40	.039		1.037		
	Above 41	.212		.876		
	Total	0E-7		1.000		
		ANOVA				
		Sum of Squares	df	Mean Square	F	Sig.
	Between Groups	2.659	2	1.330	1.333	.265
	Within Groups	268.341	269	.998		
	Total	271.000	271			

Security

Security as dependent variable has been tested using one-way ANOVA test to compare the significant difference between different age groups (independent variable) of the customers that has relationships with customers' attitude towards the acceptance of Internet banking. The results shown in Table 4.18 has represented that there was not a significant difference between their age groups on this factor, security at $p<0.05$ level for the three conditions [$F = 0.489$ and $p = 0.614$]. The results suggest that there was no significant difference between different age groups of customers on their attitude in adoption of Internet banking and the effects on this factor by these two groups are relatively same.

Table 4. 18: Result of One-way ANOVA test between age groups towards the factor security

Security		Descriptive				
		Mean		Std. Deviation		
	Below 30	.010		.960		
	Between 31-40	-.047		1.054		
	Above 41	.150		.941		
	Total	0E-7		1.000		
		ANOVA				
		Sum of	df	Mean	F	Sig.

		Squares		Square		
	Between groups	.981	2	.491	.489	.614
	Within Groups	270.019	269	1.004		
	Total	271.000	271			

Social Influence

Finally, we have conducted the same analysis to compare the significant differences between different age groups (independent variable) of the customers that have direct relationships towards their altitude in adoption of Internet banking based on the factor SI. The results given in Table 4.19 clearly represents that there was not a significant difference between their age groups on this factor at $p<0.05$ level for the three conditions [$F = 0.26$ and $p = 0.799$]. Therefore, the result suggests that there are no significant relationships between age groups of customers in affecting their attitude based on social influence factor towards the adoption of Internet banking.

Table 4. 19: Result of One-way ANOVA test between age groups towards the factor social influence

Social Influence		Descriptive				
		Mean		Std. Deviation		
	Below 30	.035		1.026		
	Between 31-40	-.035		.973		
	Above 41	.009		1.033		
	Total	0E-7		1.000		
		ANOVA				
		Sum of Squares	df	Mean Square	F	Sig.
	Between groups	.298	2	.149	.148	.862
	Within Groups	270.702	269	1.006		
	Total	271.000	271			

4.7. Experienced and Inexperienced users of Internet Banking

4.7.1. Analysis of the measurement

The sample data collected were re-grouped and categorized into two groups based on experienced and inexperienced users of Internet banking. The results may differ from these two groups of respondents. The Cronbach's alpha higher than 0.551 was generated considering only the beneficial items and five reliable factors of the total questions are classified as shown in Table 4.20 and 4.21.

Table 4. 20: Reliability and validity test results (Experienced)

Constructs	Items code	Cronbach's alpha (α)
Perceived Usefulness (PU)	PU_1 PU_2 PU_3 PU_4	0.725
Perceived ease of use (PEOU)	PEOU_2 PEOU_3* PEOU_4	0.737
Security (SE)	SE_3 SE_4	0.671
Social Influence (SI)	SI_1 SI_3	0.511
Attitude (AT)	AT_1 AT_2 AT_3 AT_4	0.793
*Note: *Item code PEOU_3 is negatively worded item; responses from the respondents were reversed.*		

Table 4. 21: Reliability and validity test results (Inexperienced)

Constructs	Items code	Cronbach's alpha (α)
Perceived Usefulness (PU)	PU_1 PU_2 PU_3 PU_4	0.698

Perceived ease of use (PEOU)	PEOU_1 PEOU_2 PEOU_4	0.664
Security (SE)	SE_1 SE_3 SE_4	0.713
Social Influence (SI)	SI_1 SI_3	0.568
Attitude (AT)	AT_1 AT_2 AT_3 AT_4	0.821

4.7.2. Results and hypotheses testing

The results of the proposed research model were illustrated in the Figure 4.11 and 4.12 separately for experienced and inexperienced users of Internet banking. To point out how well the models are performing, the R^2 and the beta coefficients are shown in the regression analysis and labeled in the models. It was found that perceived usefulness (β=.410; p<.001) and social influence (β=.410; p<.001) has the highest positive effect on attitude followed by perceived ease of use (β=.354; p<.001) and security (β=242; p<.001) regarding experienced users of Internet banking. Together these variables explained 52% (R2=.522, coefficient of determination) of the variance of customer's attitude. Whereas in the case of inexperienced users, social influence (β=.486; p<.001) has the highest positive effect on attitude, followed by perceived ease of use (β=.363; p<.001), security (β=.277; p<.001) and perceived usefulness (β=.262; p<.001) explaining 51% (R^2=.513) of the variance of attitude. As a whole, all the hypotheses are well supported with the significance of all beliefs less than standardized value (p<.05) meaning entire factors have high significant and positive effects on customer's attitude towards acceptance of Internet banking in Bhutan.

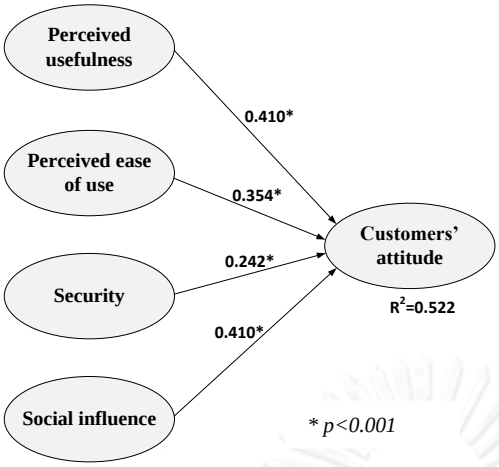


Figure 4. 11: Experienced results

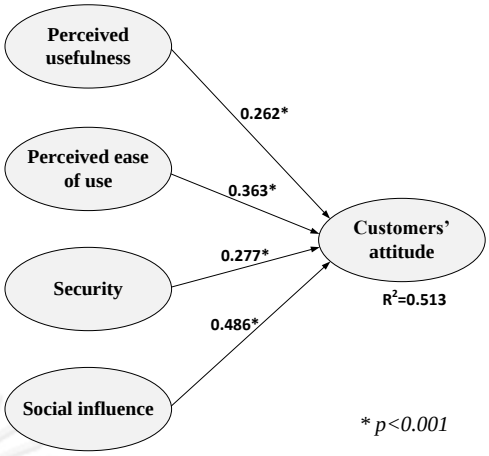


Figure 4. 12: Inexperienced results

4.7.3. Discussion

The hypotheses formulated in this section were well supported and entire factors selected have positive effects on customers' attitude towards acceptance of Internet banking in Bhutan. The social influence was found to be the most influential and highly significant factor affecting customers' attitude towards acceptance of Internet banking. Their friends, family and surrounding neighbors have influenced and made them aware about the Internet banking facilities. This happened because of the lack of awareness campaigns and less information provided by the banks about Internet banking. Regarding the experienced users, social influence and perceived usefulness are confirmed to be highly significant. Experienced users have more concerns on security than inexperienced but it was confirmed to be significant in both the groups.

4.8. Comparison between Bhutan and Vietnam Countries

A comparison between two countries (Bhutan and Vietnam) was examined to find out what factors affect the adoption of Internet Banking based on the common factors studied in both the countries. Two different questionnaires were developed to collect data from these two countries. About Vietnam country, the questionnaire were designed and written in English and then translated into Vietnamese in order to make sure that Vietnamese respondents obviously understand each item of the questionnaire. In the case of

Bhutan, we have framed and designed the questionnaire in English because English is considered as an official language. In carrying out the survey for these studies, the data collection was conducted by online as well as through hard copy regarding the Vietnam country but for Bhutanese customers we have used only the hard copy. In Bhutan, data was collected from four different districts of various regions, namely, Bumthang in the central, Thimphu and Paro in the west, Gelephu in the south. This comparison would provide vital information on how to manage Internet banking service effectively in Vietnam and Bhutan based on the customers perceptions towards the use of Internet banking.

4.8.1. Demographic Information of the Respondents

The brief information about demographic profile of the two countries is presented in the Table 4.22 below. However, the detailed about the demographic characteristics of Bhutan is shown in the Table 4.1 and the Vietnam country is depicted in Table 4.23.

Table 4. 22: Demographic information of Bhutan and Vietnam countries

Bhutan	Vietnam
• 273 usable responses. • Male (62%) and Female (38%). • Majority (89%) below age 40. • 54% were bachelor's degree.	• 275 usable responses. • Male (47%) and Female (54%). • 68.8% young age from 18-30. • 50.3% were bachelor's degree.

Table 4. 23: Respondents' Demographic profile of the Vietnam country

Variable		Frequency	Percentage (%)
Gender	Female	168	53.5
	Male	146	46.5
Age	18 - 30	216	68.8
	Over 31	98	31.2
Education degree	High school or under	15	4.8
	Trade school/college	36	11.5
	University	158	50.3
	Graduate school	102	32.5

	Others	3	1.0
Occupation	Office clerk	52	16.6
	Worker	20	6.4
	Manager	9	2.9
	Executive	32	10.2
	Academic	53	16.9
	Technician	51	16.3
	Student	82	26.2
	Others	14	4.5
Experience of using Internet banking	Never	114	37.0
	1 - 6 months	41	13.3
	6 months - 1 year	31	10.1
	1 - 3 years	79	25.6
	3 - 5 years	27	8.8
	Over 5 years	16	5.2
Frequencies using IB for experienced users	One time per week at least	81	41.1
	One time per month at least	81	41.1
	One time per 6 months at least	35	11.2

4.8.2. Hypothesis development

We have formulated a hypothesis to find out statistically a significant difference between the means of two countries (Bhutan and Vietnam) in relation to customers adoption of Internet banking based on the factors studied in both of the countries' research work. We have a hypothesized model with independent variables (perceived usefulness. perceived ease of use, trust and social influence) directly linked with a single dependent variable (intension to use). Both models are exactly the same and sample sizes are similar. We have conducted an independent sample t-test to find out the interaction between these two countries and the common factors studied in their studies. So, each factor have been tested and analyzed to find out which has a more significant relationship between two countries based on the independent variables and dependent variable. For example, we want to know if the factor, social influence (Independent variable) has greater effects on Bhutanese customers' intention to use (dependent variable) Internet banking than the

Vietnamese. Therefore, we will be looking at which factors have stronger relationship in affecting customers' intention to use Internet banking and find the differences between these two countries.

Hypothesis:

Null hypothesis (H_0): There is no statistically significant difference between the means of two countries (Bhutan and Vietnam) and the factors on customers' intention to use Internet banking.

Alternative hypothesis (H_1): There is a statistically significant difference between the means of two countries (Bhutan and Vietnam) and the factors on customers' intention to use Internet banking.

4.8.3. Results

Perceived Usefulness

An independent samples t-test was conducted to compare the mean difference between customers of two countries on the factor perceived usefulness. The result shows that there is a statistically significant difference between the means of Bhutanese customers (M= .123, SD= .913) and Vietnamese customers (M= -.122, SD= 1.068) conditions; F = 3.576, t = 2.882 at p <0.05 with regard to the factor perceived usefulness. Therefore, the null hypothesis was rejected. This result shows that the factor perceived usefulness was considered to be not relatively same by these two countries in terms of its usefulness and convenience. More details about the results are shown in Table 4.24 below. The variation in the results of these two countries could be because of numerous benefits and convenience. Moreover, customers do not need to run to banks to do transaction, withdraw or transfer money; instead they can do from their home, office or anywhere from their computers connected to the Internet. Using Internet banking helps customers save time, manage their financial activities in a better way and it is easy to do transactions.

Table 4. 24: Result of independent sample t-tests between two countries and perceived usefulness

	Levene's Test for Equality of Variances		t-test for Equality of Means						
	F	Sig.	t	df	Sig.(2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
								Lower	Upper
Equal variance assumed	3.576	.059	2.882	546	.004	.24460349	.08487141	.07788903	.41131795
Equal variance not assumed			2.884	534.261	.004	.24460349	.08482318	.07797563	.41123135

Perceived Ease of Use

Regarding perceived ease of use, there is a statistically significant difference between the means of Bhutanese customers (M= .086, SD= .916) and Vietnamese customers (M= -.085, SD= 1.072) conditions; F = 8.763, t = 2.002 at p <0.05, with regard to perceived ease of use by rejecting the null hypothesis. Therefore, the result shows that there was a significant relationship between customers' of these two countries in affecting their attitude by the factor perceived ease of use as shown in Table 4.25. The significant differences between Vietnam and Bhutan regarding perceived ease of use could be true because Internet banking services was launched very late and was still at its early stage. In addition, both the countries entirely depend on agriculture and forestry by almost 60-70 percent and the customers of both countries are not very familiar with new and advance technology. Also, they do not usually keep in touch with technology.

Table 4. 25: Result of independent sample t-tests between two countries and perceived ease of use

	Levene's Test for Equality of Variances		t-test for Equality of Means						
	F	Sig.	t	df	Sig.(2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
								Lower	Upper

Equal variance assumed	8.763	.003	2.002	546	.046	.17059281	.08520232	.00322833	.33795729
Equal variance not assumed			2.003	534.253	.046	.17059281	.08515389	.00331529	.33787033

Trust

Here, there is extremely statistical significant difference between the means of Bhutanese customers (M= -.419, SD= 1.044) and Vietnamese customers (M= .416, SD= .751) conditions; F = 7.649, t = -.190 at p <0.05 and rejected the null hypothesis. We could conclude that there is a significant difference between customers' of two countries in relationship to their trust on using Internet banking. The details of results are depicted in Table 4.26 below. As we all know that banking transactions usually involves monetary transactions the customers of these two countries have more vigilant as they are more familiar with the traditional transactions.

Table 4. 26: Result of independent sample t-tests between two countries and security

	Levene's Test for Equality of Variances		t-test for Equality of Means						
	F	Sig.	t	df	Sig.(2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
								Lower	Upper
Equal variance assumed	25.428	.000	-10.762	546	.000	-.83590694	.07767234	-.98848013	-.68333375
Equal variance not assumed			-10.749	493.951	.000	-.83590694	.07776261	-.98869322	-.68312067

Social Influence

Similarly, there is also a statistically significant difference between the means of Bhutanese customers (M= .104, SD= .818) and Vietnamese customers (M= -.103, SD= 1.145) conditions; F = 0.290, t = -1.059 at p <0.05, with regard to the factor social influence and the null hypothesis was rejected. Therefore, we could conclude that there is a significant difference between customers' of two

countries in relationship to the factor social influence towards the adoption of Internet banking. More details are shown in Table 4.27. The difference between the results of these two countries is due to the characteristic of Vietnamese and Bhutanese culture as Bhutanese have very strong social relationships that influence others in their daily live and try to make their behavior reliable with others. An individual become more confident in using Internet banking when they find someone in their social surrounding using it. Thus, the two countries have different effects from social influence towards the customers' intention to use Internet banking.

Table 4. 27: Result of independent sample t-tests between two countries and social influence

	Levene's Test for Equality of Variances		t-test for Equality of Means						
	F	Sig.	t	df	Sig.(2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
								Lower	Upper
Equal variance assumed	27.67	.000	2.426	546	.016	.20636156	.08505728	.03928198	.37344114
Equal variance not assumed			2.429	495.947	.015	.20636156	.08495639	.03944275	.37328037

CHAPTER V

DISCUSSION

The proposed research model in this study was well supported and entire factors adopted have positive effects towards acceptance of Internet banking in Bhutan. The perceived usefulness and social influence was found to be the most influential and highly significant factors affecting customers' attitude of Internet banking adoption. Many customers have suggested Internet banking to be more useful and advantage in terms of its convenient and time saving. Social influence was highly significant because their friends, family and surrounding neighbors have influenced and many force each other to use the Internet banking facilities. One of the reasons for users' attitude highly affected by social influence was due to cultural difference as Bhutanese has very strong social relationships (Wangyal, 2001). The results of the study conducted by Ochuko et al. (2009) found security as the most important factor in determining the adoption rate of Internet banking whereas in this study security was found to be less important than other factors. Technology improvement in the present days made banking security very strong and more safe compared to earlier days. There were not many crimes about the security and customers don't face problems about the security in Bhutan. The main reason was that their friend who suggests and encourages them to use Internet banking assures them using Internet banking was highly secured. People do trust each other in adoption of Internet banking services and they don't face security problems as like other countries. This is one of the strong reasons why security is found to be less significant in studying the factors affecting the adoption of Internet banking in Bhutan.

On the other hand, the lack of awareness campaigns and less information provided by the banks about Internet banking services largely hampered people from using Internet banking. Most of the customers use Internet banking at home or at work mainly because they are much anxious about Internet banking frauds and banks considers security as the utmost concern. They provide their customers with enough information on security such as terms and conditions, about phishing, do and don't and tip on Internet banking. Moreover, the customers are very much concern about the public terminals such as Internet café, offices, schools, etc. because of the Internet frauds and hackers getting into Internet banking services. Therefore, there were fewer problems on Internet

banking services and customers are aware about the public terminal network security problems. Most of the people don't know the risks involved in Internet banking services. Some people don’t even know that money can be stolen online or through ATM. So people ignore all those risks unknowingly where the results in this study has shown less importance on security. More than half of the respondents (about 59%) have experienced Internet banking services and only 4 respondents (0.8%) did not use Internet. This implies that the respondents are more likely to adopt and ready to utilize Internet banking in future.

There is not much difference of the overall explanatory power of research model between experienced and inexperienced users of Internet banking. R^2 of 52% for experienced users and R^2 of 51% for inexperienced users of Internet banking are generated. Thus, it suggests that the extended TAM was competent of explaining a comparatively high amount of variation of customer attitude towards acceptance of Internet banking. Regarding the experienced users, social influence together with perceived usefulness has the highest significance because they find Internet banking services to be more useful especially in terms of banking transactions compared to ATMs and visiting banks. Experienced users have more concern on security than inexperienced users. However, security was confirmed to be significant in both results.

CHAPTER VI

CONCLUSION

This chapter presents practical implication of the research based on the results obtained in this study. Furthermore, it presents contributions of the study and its limitations and further research.

6.1. Practical Implication of the Research

This study has contributed and supported in validating the TAM. The results of the extended TAM show the appropriateness in predicting the factors that influence customer attitude to accept Internet banking. Bhutan as a developing country at the present era, the accessibility of Internet facilities are not developed in many of the regions and the ones that already have access to Internet services especially in town areas and nearby cities still do not have very fast and high speed Internet connections. This creates customers using Internet banking services frustrated and discourages them from using the service as it was not fast enough to use Internet banking. According to the study by Tshering (2013), people are not using Internet because of the higher rates and most of the people don't have computers. Mobile Internet and broadband services are the most frequently used in Bhutan for the Internet services. Therefore, in future there would be a huge impact on the adoption of Internet banking with the development of Internet connections and use of Internet banking services on smart phones and tablets. Banks in Bhutan really need to play an important role in influencing the awareness and the attitude and behavior of the present and potential Internet banking users.

6.2. Contributions of the Study

This study has major contributions across all area of IT adoption and the results in this study can be used for further study. The study has contributed in the development of a conceptual model that explains and predicts the factors that influence the adoption and acceptance of Internet banking in Bhutan.

6.3. Limitations and Further Research

The limitations in carrying out this study were that many of the banks' customers are not aware about the Internet banking services and information about Internet banking and its usage at the time of surveying this study is still in

its early year's period. As more banks in Bhutan adopt and implement Internet banking services rapidity, it is very important for them to investigate and study various factors that influence adoption of Internet banking. This study can be expanded including other variables such as customer loyalty to Internet banking and perceived risks. Moreover, these factors can also be tested in using different applications like mobile banking at various financial sectors in Bhutan in order to find out the relationships and contrast between other developing countries.

REFERENCES

Ajzen, I., & Fishbein, M. (1973). Attitudinal and Normative Variable as Predictors of Special Behavior. *Journal of Personality and Social Psychology*, 41-57.

Al-Somali, S. A., Gholami, R., & Clegg, B. (2008). Internet banking acceptance in the context of developing countries: An extension of the Technology Acceptance Model. *In European conference on Management of Technology*, 1-16.

Al-Somali, S. A., Gholami, R., & Clegg, B. (2009). An investigation into the acceptance of online banking in Saudi Arabia. *Technovation, 29*, 130-141.

Alsajjan, B., & Charles, D. (2006). The Impact of Trust on acceptance of Online banking. *European Association of Education and Research in Commercial Distribution*, 27-30.

Ariff, M., Shoki, Md, Zakuan, N., Jusoh, A., Bahari, A., Zaidi, & M., Y., S. (2012). The Effects of Computer Self-Efficacy and Technology Acceptance Model on Behavioral Intention in Internet Banking Systems. *Procedia- Social nad Behavioral Sciences, 57*, 448-452.

Azim, M., Ali, A., & Sattar, J. (2011). Factors Influencing Adoption of Information Technology Based Banking Services. A case study of Pakistan. *Frontiers of Information Technology*, 45-50.

Baraghani, S., Naimi, Zegordi, S., H., & Khalifa, M. (2008). Factors influencing the adoption of Internet banking. *Joint MSc. program in Marketing and Electronic Commerce*, 1-109.

Cheng, D., Liu, G., & Qian, C. (2008). On Determinants of User Acceptance of Internet Banking: A Theoretical Framework and Empirical Study. *In Advance Management of Information for Globalized Enterprices, 2008. AMIGE 2008. IEEE Symposium on. IEEE*, 1-5.

Cheng, T., Lam, D., & Yeung, A. (2006). Adoption of Internet banking: an empirical study in Hong Kong. *Decision Support Systems, 42 (3)*, 1558-1572.

Davis, F., D., Bagozzi, R., P., & Warshaw, P., R. (1989). User Acceptance of Computer Technology: A comparison of two theoretical models. *Management Science, Vol.35*(8), 982-1003.

Davis, F. D. (1989). Perceived Usefulness, Perceived Ease of Use, and User Acceptance of Information Technology. *MIS Quarterly, Vol.13*(3), 319-340.

Koskosas, I. (2011). The Pros and Cons of Internet Banking: A Short Review. Kozani, Greece: University of Western Macedonia.

Lee, D., Park, J., & Ahn, J. (2001). On the Explanation of Factors Affecting E-Commerce Adoption. *ICIS*, 109-120.

Lee, M. C. (2009). Factors influencing the Adoption of Internet banking:An Integration of TAM and TBP with perceived risk and perceived benefit. *Electronic Commerce Research and Applications, 8*, 130-141.

Nunnally, J. (1978). Psychometric Theory. New York, NY: McGraw-Hill.

Ochuko, R., E., Cullen, A., J., & Neagu, D. (2009). Overview of Factors for Internet Banking Adoption. *International Conference on CyberWorlds*, 163-168.

Quarterly Newsletter. (2009). Retrieved from http://www.bob.bt/wp-content/uploads/2010/05/BOB-Newsletter-I.pdf

Rahut, D., Bahadur, Castellanos, I., Velasquez, & Sahoo, P. (2012). Performance of Financial Institutions in Bhutan. *Asia-Pacific Development journal, Vol.19*(1), 97-138.

Risk management for electronic banking and electronic money activities. (1998).

Rouibah, K., Ramayah, T., & May, O., Sook. (2011). Modeling user acceptance of Internet banking in Malaysia: A Partial Least Square (PLS) Approach. *IGI Global Publisher, 1*, 1-24.

Sathye, M. (1999). Adoption of Internet banking by Australian consumers: An empirical investigation. *International Journal of Bank, Vol.17*(7), 324-334.

Shapiro, S. S., & Wilk, M. B. (1965). An Analysis of Variance Test for Normality (Complete Samples). *Biometrika Trust*, 591-611.

Suh, B., & Han, I. (2002). Effect of trust on customer acceptance of Internet banking. *Electronic Commerce Research and Application, 1*, 247-263.

Suping, H., & Yizheng, S. (2010). Factors Influencing User Acceptance of Online Banking. *International Conference on Logistics Systems and Intelligent Management, 1*, 315-318.

Susanto, A., Lee, H., & Zo, H. (2011). Factors influencing Initial Trust Formation in adopting Internt banking in Indonesia. *International Conference in Advance Computer Science and Information System*, 305-310.

Tan, M., & Teo, T., S., H. (2000). Factors influencing the adoption of Internet banking. *Journal of the Association for Information Systems, Volume 1*(5), 1-44.

Tshering, K. (2013). To study the Internet Access and Usage Behavior in the Kingdom of Bhutan. *International Journal of Computer Science and Electronics Engineering (IJCSEE), Vol.1*(2), 288-297.

Wangyal, T. (2001). Ensuring Social Sustainability: Can Bhutan's Education System Ensure Intergenerational Transmission of Values. *Journal of Bhutan Studies*, 106-131.

Winnie, C., & John, P. (2002). An Evaluation of Internet Banking in New Zealand. *Proceedings of the 35th Hawaii International Conference on System Science*.

The Work of a Nation. The Center of Intelligence. (2013, January 10). Retrieved from https://www.cia.gov/library/publications/the-world-factbook/geos/bt.html

APPENDICES

APPENDIX A

CONSTRUCTS AND ITEMS WITH CORRESPONDING SOURCE

Constructs and Items	Source
Perceived Usefulness(PU) 1. Using the Internet Banking would enable me to accomplish my tasks more quickly. 2. Internet Banking gives me greater control over financial banking activities. 3. I think the Internet banking is useful. 4. Overall, I would find using the Internet Banking to be advantageous.	Cheng, et al., (2006), Abdullah, et al., (2008), and Lee (2009)
Perceived Ease of Use(PEOU) 1. It is easy to do what I want to do using Internet Banking. 2. I think that learning to use Internet Banking will be or has been easy. 3. I think that interaction with Internet banking does not require lot of mental efforts. 4. Overall, I expect Internet Banking will be easy for me to use.	Lee (2009), Abdullah, et al., (2008) and Abdullah, et al., (2009)
Security(SE) 1. The security policies of Internet banking are available to customers. 2. The security of Internet banking is important. 3. Using internet to do money transaction is secure. 4. Overall, the Internet banking is a safe place to transmit sensitive information.	Abdullah, et al., (2008) and Abdullah, et al., (2009)
Social Influence(SI) 1. I would consider using online banking if someone personally recommended it. 2. When trying new technology, I trust my own instinct more than advice from others. 3. Most people who are important to me think that I should use or continue to use online banking.	Abdullah, et al., (2009)
Attitude(AT) 1. I think that using Internet banking is a good idea 2. I think that using Internet banking for financial transactions would be a wise idea. 3. I think that using Internet banking is pleasant 4. In my opinion, it is desirable to use Internet banking	Cheng, et al., (2006) and Lee (2009)

APPENDIX B

SURVEY QUESTIONNAIRE

Survey Questionnaire for factors influencing the Adoption of Internet Banking by Bhutanese Consumers

Dear Sir/Madam,

Thank you for taking your time to fill in this questionnaire. It would really help me in pursuing my master degree at Chulalongkorn University in Thailand. I assure you that all responses will be held strictly confidential and please answer the questions as honest as possible. I appreciate your precious time and generosity.

Part I: Please provide correct information for each item. You can tick [✓] the appropriate responses.

1. Gender*

○ Male ○ Female

2. Age*

○ 18 to 30
○ 31 to 40
○ 41 to 50
○ 51 to 60
○ 60 and above

3. Qualification*

○ High School
○ Bachelor's Degree
○ Master's Degree
○ Ph.D.
○ Others

4. Occupation*

○ Government Employee
○ Co-operate Sector
○ Private Business
○ Students
○ Others_____

5. Your Internet Access Location.* (You can apply more than one choice)

☐ At home
☐ At work
☐ At school
☐ In Internet café
☐ In a friend's place
☐ Do not use the Internet

6. Preferred Methods of performing Banking transactions* (You can apply more than one choice)

☐ ATMs
☐ Visit Banks
☐ Telephone
☐ Internet banking services

7. Do you use Internet banking?* (You can choose Yes if you have experienced before)

If No, you can skip the questions 8, 9, 10 and 11.

◯ Yes
◯ No

8. Years you have been using Internet banking.

◯ Less than 1 year
◯ 1 to 3 years
◯ 3 to 5 years
◯ More than 5 years

9. Frequencies using Internet banking.

◯ Once a day
◯ Once a week
◯ Once a month
◯ Once a year
◯ Others _____

10. Which bank(s) do you use for majority of your Internet banking services?* (You can apply more than one choice)

☐ Druk PNB
☐ Bank of Bhutan
☐ Bhutan National Bank
☐ Tashi Bank
☐ Others____

11. Which of the following services are more frequently used in Internet banking?* (You can apply more than one choice)

☐ Search statements
☐ View transactions.
☐ Download statements.
☐ Check balance.
☐ Transfer money.
☐ Others____

Part II: Please indicate your level of agreement or disagreement with each of these statements regarding the adoption of Internet banking. Circle the most appropriate response on the following scale.

No.	Item	Strongly Disagree 1	Disagree 2	Neutral 3	Agree 4	Strongly Agree 5
1	Using the Internet Banking would enable me to accomplish my tasks more quickly.	1	2	3	4	5
2	Internet Banking gives me greater control over financial banking activities.	1	2	3	4	5
3	I think the Internet banking is useful.	1	2	3	4	5
4	Overall, I would find using the Internet Banking to be advantageous.	1	2	3	4	5
5	It is easy to do what I want to do using Internet Banking.	1	2	3	4	5
6	I think that learning to use Internet banking would be easy.	1	2	3	4	5
7	I think that interaction with Internet banking does not require a lot of mental effort.	1	2	3	4	5
8	Overall, I expect Internet Banking will be easy for me to use.	1	2	3	4	5
9	The security policies of Internet banking are available to customers.	1	2	3	4	5
10	The security of Internet banking is important.	1	2	3	4	5
11	Using internet to do money transaction is secure.	1	2	3	4	5

12	Overall, the Internet banking is a safe place to transmit sensitive information.	1	2	3	4	5
13	I would consider using Internet banking if someone personally recommended it.	1	2	3	4	5
14	When trying new technology, I trust my own instinct more than advice from others.	1	2	3	4	5
15	People who are important to me would think that I should use Internet banking.	1	2	3	4	5
16	I think that using Internet Banking is a good idea.	1	2	3	4	5
17	I think that using Internet Banking for financial transactions would be a wise idea.	1	2	3	4	5
18	I think that using internet banking is pleasant.	1	2	3	4	5
19	In my opinion, it is desirable to use internet banking.	1	2	3	4	5

APPENDIX C

TABLES SHOWING RESULTS OF CHI-SQUARE AND CROSS TABULATIONS

Table A. 1: Gender and the item "Using Internet to do money transactions is secure".

Cross Tab Result

		Gender		Total
		Male	Female	
Security	Strongly	86	71	157
Disagree		63	25	88
	Agree	19	9	28
	Strongly	168	105	273
Agree				
Total				

Chi-square Test

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	7.262[a]	2	.026

Table A. 2: Gender and the item "I think that using Internet banking for financial transactions would be a wise idea".

Cross Tab Result

		Gender		Total
		Male	Female	
Attitude	Strongly	44	44	88
Disagree		92	50	142
	Agree	32	11	43
	Strongly	168	105	273
Agree				
Total				

Chi-square Test

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	8.598[a]	2	.014

Table A. 3: Users and the item “using Internet banking would enable me to accomplish my tasks more quickly”.

Cross Tab Result

		Gender		Total
		Experienced	Inexperienced	
Perceived Usefulness	Strongly Disagree	8	20	28
	Disagree	52	53	105
	Agree	102	38	140
	Strongly Agree	162	111	273
Total				

Chi-square Test

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	25.782[a]	2	.000

Table A. 4: Users and the item “Internet banking gives me greater control over financial banking activities”.

Cross Tab Result

		Gender		Total
		Experienced	Inexperienced	
Perceived Usefulness	Strongly Disagree	50	71	121
	Disagree	82	28	110
	Agree	30	12	42
	Strongly Agree	162	111	273
Total				

Chi-square Test

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	29.365[a]	2	.000

Table A. 5: Users and the item “It is easy to do what I want to do using Internet banking”.

Cross Tab Result

	Gender	

		Experienced	Inexperienced	Total
Perceived Ease of Use	Strongly	51	48	99
Disagree		75	48	123
	Agree	36	15	51
	Strongly	162	111	273
Agree				
Total				

Chi-square Test

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	5.323[a]	2	.070

Table A. 6: Users and the item “Overall, I expect Internet banking will be easy for me to use”.

Cross Tab Result

		Gender		Total
		Experienced	Inexperienced	
Perceived Ease of Use	Strongly	21	27	48
Disagree		86	61	147
	Agree	55	23	78
	Strongly	162	111	273
Agree				
Total				

Chi-square Test

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	8.914[a]	2	.012

Table A. 7: Users and the item “I would consider using Internet banking if someone personally recommended it”.

Cross Tab Result

		Gender		Total
		Experienced	Inexperienced	
Social Influence	Strongly	55	56	111

Disagree		79	43	122
	Agree	28	12	40
	Strongly	162	111	273
Agree				
Total				

Chi-square Test

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	7.776[a]	2	.020

APPENDIX D

ACRONYMS

- IB: Internet Banking
- PU: Perceived Usefulness
- PEOU: Perceived Ease of Use
- SE: Security
- SI: Social Influence
- AT: Attitude
- SPSS: Statistical Package for the Social Sciences
- IS: Information System
- TAM: Technology Acceptance Model
- ETAM: Extended Technology Acceptance Model
- TRA: Theory of Reasoned Action
- TPB: Theory of Planned Behavior
- UTAUT: Unified Theory of Acceptance and Use of Technology

VITA

Mr. Ugyen Dendup holding a Bachelor degree in Secondary Education in Mathematics and Information Technology has graduated from Paro College of Education (PCE), Royal University of Bhutan in the year 2008.

He has four years of teaching experience during which he served as the Mathematics and Computer Application teacher in Middle Secondary Schools in Bhutan.

He has completed his Masters in Computer Science and Information Technology from Chulalongkorn University, Bangkok, Thailand, in the year 2014, under the scholarship between Thailand International Development Cooperation Agency (TICA) of Thailand and Royal Government of Bhutan (RGOB), Thimphu, Bhutan.