FACTORS INFLUENCING INTENTION TO USE FACEBOOK: CASE OF UNIVERSITY
STUDENTS IN BHUTAN

Mrs. Sonam Choden

A Thesis Submitted in Partial Fulfillment of the Requirements

for the Degree of Master of Science Program in Computer Science and Information

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นางโซนัม โชเด็น

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

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....Thesis Advisor

(Assistant Professor Nagul Cooharojananone, Ph.D.)

....External Examiner

(Kanokwan Atchariyachanvanich, Ph.D.)

โซนัม โชเด็น : ปัจจัยที่มีอิทธิพลต่อความตั้งใจใช้เฟสบุก: กรณีของนักศึกษามหาวิทยาลัยในประเทศภูฏาน. (FACTORS INFLUENCING INTENTION TO USE FACEBOOK: CASE OF UNIVERSITY STUDENTS IN BHUTAN) อ.ที่ปรึกษาวิทยานิพนธ์หลัก: ดร. นกุล คูหะโรจนานนท์, 61 หน้า.

งานวิจัยนี้สร้างขึ้นเพื่อศึกษาปัจจัยที่ส่งผลกระทบต่อการใช้เฟสบุ๊คของนักเรียนและนักศึกษาในประเทศภูฏาน โดยปัจจัยที่ใช้ในการศึกษา คือ อิทธิพลทางสังคม การมีปฏิสัมพันธ์ทางสังคม การเพิ่มประสิทธิภาพทางสังคม และความบันเทิง ทั้งนี้งานวิจัยดังกล่าวได้มีการเก็บข้อมูลประชากรตัวอย่างจำนวน 350 คน โดยใช้แบบสอบถามออนไลน์ ผลการวิจัยพบว่าปัจจัยที่ส่งผลกระทบต่อความตั้งใจในการใช้เฟสบุ๊คมากที่สุด คือการเพิ่มประสิทธิภาพทางสังคม ถัดมาคือการมีปฏิสัมพันธ์ทางสังคม และความบันเทิง ตามลำดับ นอกจากนี้ผลการวิจัยระบุว่าอิทธิพลทางสังคมไม่มีผลกระทบต่อความตั้งใจในการใช้เฟสบุ๊คในประเทศภูฏาน เราจึงได้วิเคราะห์ข้อมูลแบบจำแนกกลุ่มและพบว่าความแตกต่างทางเพศมีผลกระทบต่ออิทธิพลทางสังคม โดยอิทธิพลทางสังคมจะมีผลกระทบต่อการใช้เฟสบุ๊คในเพศหญิง แต่ไม่มีผลกระทบในเพศชาย ดังนั้นจึงสรุปได้ว่าปัจจัยด้านเพศมีส่วนสำคัญอย่างมากต่อระดับความตั้งใจในการใช้เฟสบุ๊คในประเทศภูฏาน

ภาควิชา	คณิตศาสตร์และวิทยาการคอมพิวเตอร์	ลายมือชื่อนิสิต	....
สาขาวิชา	วิทยาการคอมพิวเตอร์และเทคโนโลยีสารสนเทศ	ลายมือชื่อ อ.ที่ปรึกษาวิทยานิพนธ์หลัก	....
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SONAM CHODEN: FACTORS INFLUENCING INTENTION TO USE FACEBOOK: CASE OF UNIVERSITY STUDENTS IN BHUTAN. ADVISOR: ASST. PROF. NAGUL COOHAROJANANONE, Ph.D., 61 pp.

This study tries to find out which factors influence the use of Facebook by the students from colleges and institutes in Bhutan. Four pre-determined factors such as Social Influence, Social Interaction, Social Enhancement and Entertainment Value are tested to find out the students' use of Facebook amongst this cohort. We used an online questionnaire to conduct empirical research, and collected and analyzed the samples of 350 and revealed that Intention to use Facebook was strongly determined by the factor Social Enhancement followed by Social Interaction and Entertainment value. Surprisingly the factor Social Influence is insignificant in determining the students' Intention to use Facebook in Bhutan. This work also ran clustering analysis by gender, which found notable difference in factor Social Influence between male and female. Social Influence is an important factor affecting Intention to use Facebook for female but not for male. Therefore, the findings suggest that gender differences also produce different significant level in Intention to use Facebook in Bhutan.

จุฬาลงกรณ์มหาวิทยาลัย
CHULALONGKORN UNIVERSITY

Department:	Mathematics and Computer Science	Student's Signature	....
		Advisor's Signature	....
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CHAPTER 1

INTRODUCTION

1.1. Background and Importance

Evolution of social sites has reshaped the traditional communication patterns to a completely new pattern of face-to-face communication removing conventional barriers to communication. Users of online social sites are able to communicate with their friends, families and acquaintances their thoughts and emotions in the form of various multimedia options such as photos, videos, graphics and so on. Although there are a number of online social networking sites readily available for the users, Facebook is currently the most popular among the college student (Cheung, Chiu, & Lee, 2010; Skendzic, Kovac, & Kovacic, 2012). According to their website, Facebook was initially launched for college students in 2004 and for high school students in 2005 (Facebook, 2013, http://facebook.com/facebook). It was opened for rest of the people across the globe only in the year 2007 (Facebook, 2013, http://facebook.com/facebook). It is prominently used as a communication tool.

In the past, online social networking sites were predominantly used by younger generations of the people. However, today people from across all age groups use them to connect and communicate with each other. The burgeoning influence of Facebook has brought significant changes in sharing of information and building of social relationships. This technology provides new means for the people specially students to present themselves, interact with each other, establish and maintain their friendships, enhance themselves socially and broaden their knowledge. Therefore, without exception it is also a widely used social site in Bhutan for various purposes.

While for some, social networking sites such as Facebook are used as a tool to advertise a product or service, for others they are exclusively used to communicate and express their feelings with their friends and acquaintances. They serve different purpose to different people. A large pool of literature is available on Intention to use Facebook and its impact on the lives of the peoples, specifically

students. However, there hardly exits such studies in Bhutan. No empirical studies have been conducted on the use of Facebook and its impact on the people of Bhutan, particularly the university students from across different institutes and colleges. This study, therefore, tries to find out factors that influence use of Facebook amongst the students from different colleges and institutes across the country. In brief, study will test how four pre-selected hypothetical factors would influence use of the Facebook amongst a cohort of students from several institutes and colleges.

1.2.   Problem Formulation and Motivation

Although extensive research studies have conducted around the globe, little or no studies have been conducted on the use and impact of Facebook amongst the people of Bhutan. To the best of my knowledge, the use of Facebook have been increasing every year specially amongst the youth in a small country like Bhutan and as this phenomenon is quite new, there exists relatively a very little or no theory-driven empirical studies have been conducted. Therefore the studies of factors that drive students' Intention to use Facebook are drawn out.

1.3.   Objective

The main objective of this research is to find out factors that affect the Intention to use Facebook. Further, this study will shed light on how and why some factors such as Social Influence, Social Interaction, Social Enhancement and Entertainment Value have positive impact on Intention to use it. Moreover, the study presents a detailed account of the participants' Facebook usage profile and activities such as the amount of time an individual spent in a day and the size of their social circle.

1.4.   Scope of the Thesis and Constrain

Considering the fact that there are limited empirical studies on use of Facebook in Bhutan, the scope of this research is as listed below:

    i.   It was mainly focused and limited to Bhutanese students who use Facebook.

    ii.   Questionnaire was presented in English since everybody knows English well in Bhutan.

    iii.   The sample were collected on volunteer base

    iv.   Student includes both male and female

1.5.   Benefits of Expected Outcomes

Being a pioneer study conducted in this particular field of subject, this study not only hopes to lay a foundation study on the subject, but also hopes to provide, for the educators and researchers, insights into the use of Facebook amongst the students and, for the policy makers, a framework for future policy directions for the use of it. It will also expect to provide a summery and critique of the research topics and method hitherto in the study of Facebook in Bhutan as well as around the globe.

1.6.   Structure of the Thesis

Structurally, the thesis is divided into five chapters. As usual, first chapter presents brief introduction on the thesis followed by statement of problems. The chapter also outlines the objective and the scope of the study and its expected benefits to the different colleges and institutions. The second chapter provides an existing literature review on the subject. The literature review largely consists of a brief history of Internet in Bhutan, brief information on different institutions and colleges under Royal University of Bhutan. Much of literature review is focused on Social Networking Sites and use of the Facebook in Bhutan and how pre-selected hypothetical factors affect use of the Facebook. Following chapter three presents methodological aspects of the study followed by experimental results and discussion

of experimental results in chapter four. Finally, chapter five provides discussion and concluding remarks on the findings of the study.

CHAPTER 2

FUNDAMENTAL KNOWLEDGE AND LITERATURE REVIEW

In this Chapter, it provides the Fundamental Knowledge or an overview of ICT in Bhutan, Royal University of Bhutan (RUB), Social Networking Services and Facebook and Literature Reviews of the factors such as Social Influence, Social Interaction, Social Enhancement and Entertainment Value that affects Intention to use Facebook. First, Section 2.1, present the brief explanation of Internet in Bhutan followed by Royal University of Bhutan in Section 2.2. Then state a short review on Social Networking Services in Section 2.3 followed by definition of Facebook and its usage in Section 2.4. In Section 2.5, some literature review on Social Influence is drawn out, followed by the literature review on Social Interaction in Section 2.6. Then, literature review on Social Enhancement in Section 2.7 and final Section 2.8 present the literature review on Entertainment Value.

2.1. Internet in Bhutan

Bhutan experienced its first internet service in the year 1999 and until the end of year 2003, the Internet Service Provider (ISP) named Druknet was the only one internet provider in Kingdom of Bhutan (Tobgay & Wangmo, 2008). Although Bhutan Information Communication and Media Authority (BICMA) has issued license to four ISP namely Druknet, Samden Pvt. Tech, DrukCom Private Limited and Tashi Cell but Druknet leads the market followed by Tashi Cell as shown in Table 2.1

Table 2.1: Internet services provided by different Internet Service Provider with their number of subscribers as of June 2013. (Source: http://www.bicma.gov.bt/index.php/divisions/telecomm/statistics, 2013)

Sl.No	Services	Druknet	Tashi Cell	DrukCom Private Limited	Samden Pvt. Tech
1	Lease Line	227	99	3	30
2	EDGE/GPRS	131,662	15935	NA	NA
3	3G	40,082	685	NA	NA
4	ADSL Broadband	19,239	NA	90	NA

2.2.   Royal University of Bhutan (RUB)

Royal University of Bhutan (RUB) is the only university and a leading higher education institution established in 2003. It is a decentralized with ten constituent colleges spread across the Kingdom of Bhutan. The member colleges are listed in following table with their location and number of students as of 2012

Table 2.2: Member Colleges of Royal University of Bhutan (RUB)
(Source: http://www.rub.edu.bt/index.php/annual-statistics/212-annual-statistic, 2013)

Sl. No	Name of College	Location	No. of Students
1	College of Natural Resources (CNR)	Lobesa, Punakha	369
2	College of Science and Technology (CST)	Rinchhending, Phuntsholing, Chukha	641
3	Gaeddu College of Business Studies (GCBS)	Gedu, Chukha	1181
4	Institute of Language and Culture Studies (ILCS)	Taktse, Trongsa	550
5	Jigme Namgyel Polytechnic (JNP)	Dewathang, Samdrup Jongkhar	574
6	National Institute of Traditional Medicine (NITM)	Thimphu, Thimphu	65
7	Paro College of Education (PCE)	Paro, Paro	1239
8	Royal Institute of Health Sciences (RIHS)	Thimphu, Thimphu	362
9	Samtse College of Education (SCE)	Samtse, Samtse	1190
10	Sherubtse College (SC)	Kanglung, Trashigang	1229
Total			7400

The Figure 2.1 presents the percentage of male and female students in each colleges of RUB. The figure clearly shows that CNR has highest differences in male and female population of students at 84% male and 16% female while RIHS has equal percent of male and female students with 50% each.
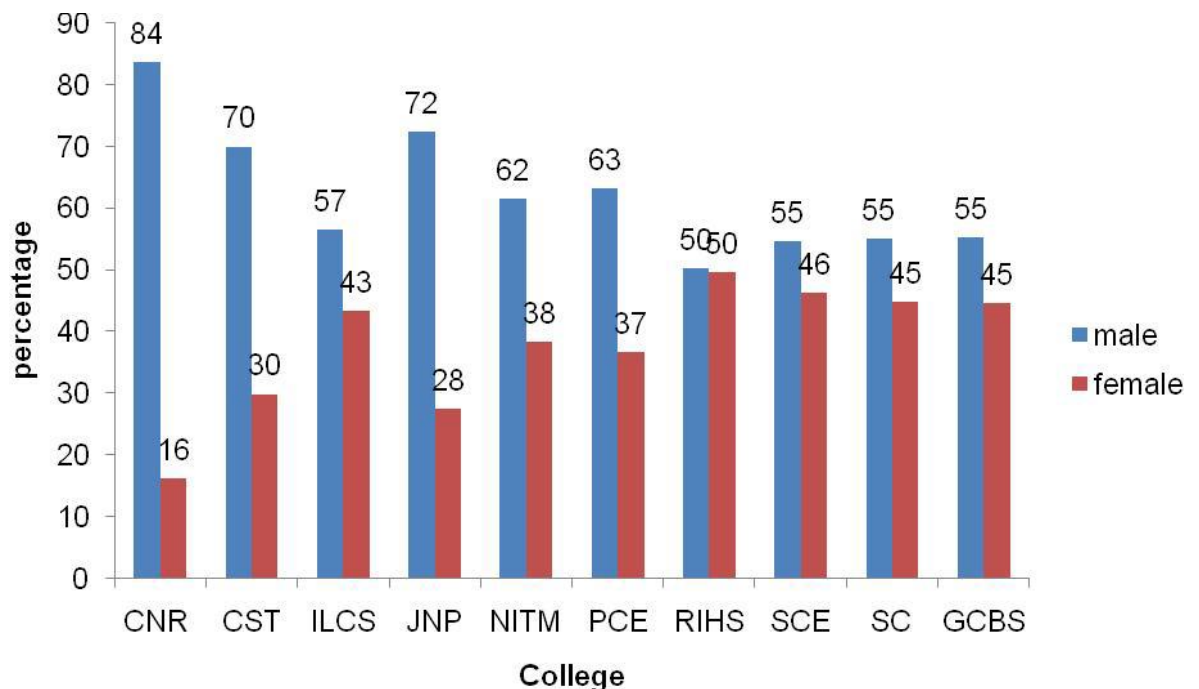
Figure 2.1: Number of students (%) under RUB by gender in the year 2012

2.3. Social Networking Services (SNS)

Social networking services (SNS) are an online platforms that allows users to connect each other to engage themselves in online social activities such as chat, share photos, videos, web pages, updates, comments, etc. and also it allows maintenance of a sustainable contact (Kaur, Bharali, & Pradeep, 2012). It is also defined as an informal learning environment, which provide users sort of outside-classroom extension of interaction and learning with their friends, where users are mostly students (Hwang, Wu, Huang, & Huang, 2012). Students of the "Net generation", or as Prensky calls them "digital natives" are the popular users of today's social networks and these students are those who were born between 1982 and 1991 (Tulaboev & Oxley, 2010).

Social networking services are the main application form of Web 2.0 that functions more and more widely, and is gradually integrating various elements designed to help people build social network. It is a relationship-centered where real-life relationships migrate to the network, through which users can found not

only old mates, but also new friends made through an old friends and can keep in touch within themselves easily and conveniently (Bo & Rensheng, 2010).

2.4.   Facebook

Facebook allows users to establish a semi-open or open personal profile, help users clearly identify other users known to them and seek connections between themselves, friends and other users (Wu, Hsieh, Chen, & Tu, 2011).

Since Facebook was at first developed for the students' use, therefore most researchers focus mainly on students' use of Facebook (Nemec, Hölbl, Burkeljca, & Welzer, 2011). The researchers believe Facebook as a facilitator that facilitates users' Interaction with others and improves content understanding in the class and their research showed that university students has increasing influences in use of Facebook as their usage rate of over 90% per year lies in university campuses (Chen, 2011).

2.5.   Social Influence

Social Influence reflects the influence of expectations from significant others and the acceptance of the influence after all depend on individual users (Cheung, Chiu, & Lee, 2011). The usage of the new systems by the users would influenced by the information from the second hand, especially from the users' family or friends. Similarly, the Bhutanese students may be using Facebook because other people are using it or their friends forced them to use it or the people who influence their behavior would think that they should use it.

2.6.   Social Interaction

There are number of studies focusing on Social Interaction among college and university students. Some are reviewed here. The researchers have mentioned about Social Networking Services as a platform where lots of games and plugins can be found, which expands forms of communication between users, enhancing the mutual interaction (Bo & Rensheng, 2010). It has been said that the maximum number of Facebook users use it to interact with people they already knew,

especially peers, which may promote self-disclosure and personal feedback, further identity development (Gentile, Twenge, Freeman, & Campbell, 2012). Similarly, the college students use Facebook in order to keep in touch with their friends rather than for their educational purpose and to connect and get an instant communication with their friends (Hew, 2011). In another research students reported that they specifically joined Facebook as a means of making new friends, to interact and keep in touch with their family at home and with their old and new friends, and to plan social events with their friends at university (Madgea, Meekb, Wellensc, & Hooleyd, 2009).

A group of researchers observed that Facebook activity has contradictory and puzzling effects on Social Interaction as this social network satisfies the user's interpersonal intimacy but it diverts the actual face-to-face communication and it also declined the use of other electronic media like email (McAndrew & Jeong, 2012). However another group pointed out, that social networks have been used for communication and interaction purpose from institution point of view and the growing acceptance of Facebook has brought out a new mode for the user interaction and communication (Quinn, Chen, & Mulvenna, 2011; Sanchez, Gonzalez, Alayon, & Gonzalez, 2013). In addition, a research showed that most positive impact in use of Facebook and Twitter among university students was to have better interaction and relation with their family and friends (Hamade, 2013).

Similarly, the college and institution students in Bhutan are using Facebook because they might be feeling more comfortable and easy to interact, communicate with their friends and family, and using Facebook might help them to find more friends and keep interacting with their new and old friends. Therefore, I believe, one of the main objectives of online social network is for social interaction and connection. From the above review we can say that social interaction will increase the user's Intention to use Facebook.

2.7. Social Enhancement

Social Enhancement is defined as "The value that a participant derives from gaining acceptance and approval of other members, and the enhancement of one's social status within the community on account of one's contribution to it" (Cheung et al., 2011). Updating status, uploading photos, commenting on others status and photos, contributing in the group or community and sharing friend's photos and status would enhance and develop the friendship within community. The Facebook may act as a unique mode of communication in which to develop and maintain relationships socially (Grieve, Indian, Witteveen, Tolen, & Marrington, 2013). Facebook also act as a friendship facilitator which helps to remove environmental barriers to friendship relations by providing an additional communication channels and easy to use by the learners to share and generate tacit knowledge (Ractham & Firpo, 2010; Tu, Wu, Hsieh, & Chen, 2011).

2.8. Entertainment Value

Entertainment Value is defined as "fun and relaxation through playing or otherwise interaction with others" (Cheung et al., 2011). The undergraduate students normally use Facebook just to entertain themselves or for fun and "killing time" rather than educational purpose or gathering information (Foge & Nehmad, 2008). Similarly, it has been said that both the men and women use and continued Intention to use Social Network sites are strongly affected by the Enjoyment factor (Lin & Lu, 2011). Generally the students are using Facebook to safe their boredom and keep them engaged with the Facebook activities and applications.

It has been mentioned above that undergraduate students normally use Facebook just for fun and enjoyment rather than gathering information or educational purpose (Foge & Nehmad, 2008), However, a study on Facebook use among university students has shown that Facebook is a tool where college and institute students can connect with others who shares similar interests, and much of a speculative nature has been written about using social media to support educational aims (Skues, Williams, & Wise, 2012). Similarly, a study on using social

network at university suggests that social network allow improving cognitive capacities, synthesis and decision making and leaning (Sanchez et al., 2013). But I believe that to some extent, Facebook is being used for gathering information and knowledge sharing, however all most all the users they are engaged with it just to entertain themselves rather than for gaining knowledge and sharing information.

CHAPTER 3

METHODOLOGY

This chapter describes the methods and measurement developed for the study of factors influencing the Intention to use Facebook. It has been divided into sections where in, section 3.1 describes the identifications of factors and their hypothesis, section 3.2 presents proposed research model and section 3.3 describes the methods and measurement developed for the research and in final section, 3.4 describes how data has been collected.

3.1.   Identifying Factors and Deriving Hypothesis

Although we come across a number of factors that influence the Intention to use Facebook from the study of other research papers studied based on university students but we found four factors which appear to affect the Bhutanese students and they are listed below

1. **Social Influence:** Social Influence occurs when one's emotions, opinions, or behaviors are affected by others especially those who are important to one's life. It is the influence of expectations from significant others and the acceptance of the influence on the use of a particular system after all depends on the individual users whether he or she is going to accept it or not. This factor is considered for the study because we feel that Bhutanese students are easily affected their behaviors and attitude in adaptation of information technology from the experienced users. Based on this discussion, we hypothesize that:

    H1: Social Influence has a direct positive relationship with users' Intention to use Facebook.

2. **Social Interaction:** Social Interaction is an ability of two or more social beings to come into contact and communicate or acknowledge one another. Several studies have shown that many

participants join such online social communities mainly to dispel their loneliness, meet like-minded others, and receive companionship and social support. Similarly, we feel Bhutanese people especially students are very much interested in connecting, communicating and interacting with new people and keep in touch with their old mates and therefore we have considered this factor for the study of intention to use Facebook. Hence, this discussion hypothesize that :

H2: Social Interaction has a direct positive relationship with users' Intention to use Facebook.

3. **Social Enhancement:** Social Enhancement is defined as "The value that a participant derives from gaining acceptance and approval of other members and the enhancement of one's social status within the community on account of one's contribution to it" (Cheung et al., 2011). It has been proved that SNS migrate real-life relationship to the network, through which users can found not only old mates but also new friends and expand their social circle (Bo & Rensheng, 2010). Thus, the factor Social Enhancement is considered for this study as it helps users establish more social circle and it could be appropriate factor which is characterized by the Bhutanese students. Based on this discussion, we hypothesize that:

    H3: Social Enhancement has a direct positive relationship with users' Intention to use Facebook.

4. **Entertainment Value:** It is a value derived from fun and relaxation through playing or otherwise interacting with their friends or other people. Undergraduate students use Facebook to entertain themselves or for fun and "killing time" rather than educational purpose or gathering information and the enjoyment factor is strongly affected (Foge, et al., 2008; Lin, et al., 2011). We have seen

in literature review under Social Networking Services (SNS) that those students who were born between 1982 and 1991 are said to be as "Net generation" or "digital natives" and are popular users of today's social network and thus the Bhutanese students are also fall under the age of 1982 who are net generation as well. Hence, this discussion hypothesize that:

H4: Entertainment Value has a direct positive relationship with users' Intention to use Facebook.

3.2. Research Model

Figure 3.1 presents the study's research model, developed based on the four factors which are Social Influence, Social Interaction, Social Enhancement, and Entertainment Value which determine the Intention to use Facebook. These key factors are affecting an individual student's Intention to use Facebook in the colleges and institutions in Bhutan.
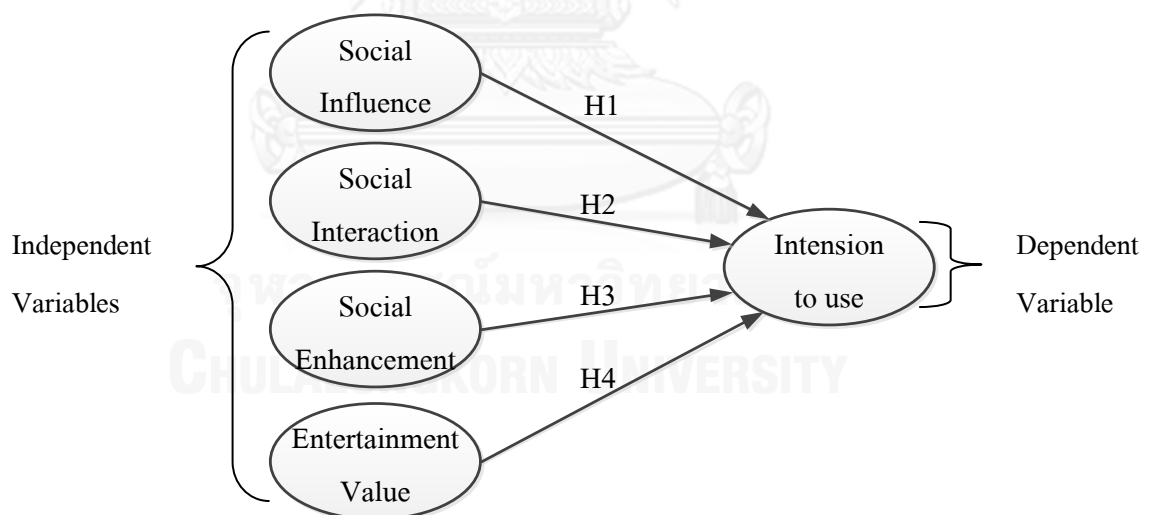
Figure 3.1: The research model

The variables at left hand side are the independent factors that affect the Intention to use Facebook whereas the variable at right hand side is the factor which directly depends on the left hand side factors in determining the Intention to use Facebook by the college and institution students in Bhutan.

3.3.   Research Measurement Development

The survey questionnaire was developed containing three parts. The first part questions were the respondents' demographic and Facebook utility information, second part questions were specific to each factor that affects Intention to use Facebook and final part was based on the participants' satisfactory level. In the first part, i.e demographic and Facebook utility information, questions regarding gender, age group, number of friends they have in their friend list, hours spent per day in Facebook and time spent on different activities are presented. In the second part, there were seventeen questions in total and all items were measured on a five-point Likert-type scale with endpoints ranging from "strongly disagree=1" to "strongly agree=5". Four items measure Social Influence of which two were adopted from Cheung, et al. (2010) and two were developed by ourselves, four items measure Social Interaction of which two were adopted from Hew (2011) and other two were developed by ourselves, three items measure Social Enhancement of which two were adopted from Cheung, et al. (2010) and one from Hew (2011), four items measure Entertainment Value of which two were adopted from Chung, et al. (2010) and another two from Lin, et al. (2011) and two items measure Intention to use Facebook and both are adopted from Lin, et al. (2011). Table B.1 under Appendix B lists the source of the items in detail.

A pre-test were used to validate the instrument and it involved fifteen respondents and all are undergrads. Respondents were asked to fill up the questionnaire and comment on the length of the instrument, the format, wording of the scales and clarity of the questions. It was constructed using Google docs and the URL was then provided personally to the pre-test respondents through Facebook message. Based on the respondents' feedback, this study modified the questionnaire items in order to provide clear information to the users.

3.4. **Data Collection and Sampling**

Participants were 356 undergraduate students from the colleges and institutions under Royal University of Bhutan (RUB). Of the 356 students who completed the survey, 350 were valid for the data analysis. Data were collected only from the students who have Facebook account.

The survey questionnaire was launched online and the students were first informed of the website and provided with the URL. Brief instructions were given to the students on how to find the link and fill the questionnaire form and guided them appropriately throughout the entire research process. In order to encourage respondents to participate and response honestly, this study offered a small gift to each participants. All data were stored confidentially and the participants were completely voluntary. The followings picture was taken while the data collection was doing in colleges and institutions.
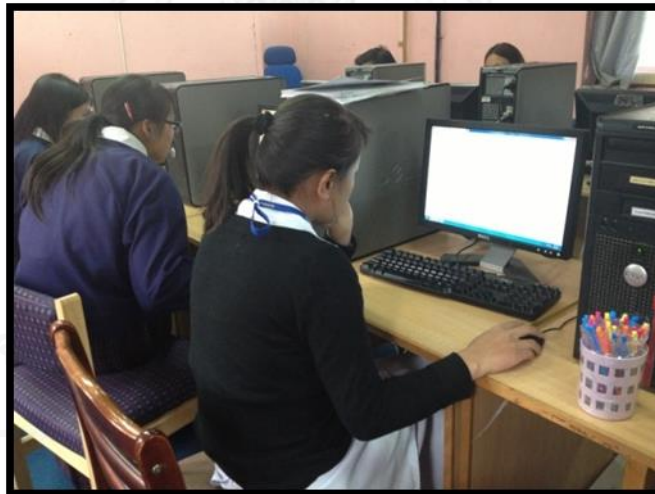
Figure 3.2: picture during collecting data

Online questionnaire gathered data, distributed from April 25 to May 30, 2013 to randomly chosen Facebook users from different colleges and institutions of Royal University of Bhutan. Effort was put to collect responses from all colleges and institutions of RUB, but due to a number of unforeseen obstacles the samples could not collect from few colleges. However the survey did cover the majority colleges

and institutions which are located in different region of the country. The figure 3.3 shows the number of respondents from different colleges and institutions

	RIHS	NITM	PCE	CNR	CST	JNP	SC	GCBS	SCE	Total
Frequency	70	32	35	11	163	1	26	10	2	350
Percent	20.0	9.1	10.0	3.1	46.6	.3	7.4	2.9	.6	100.0
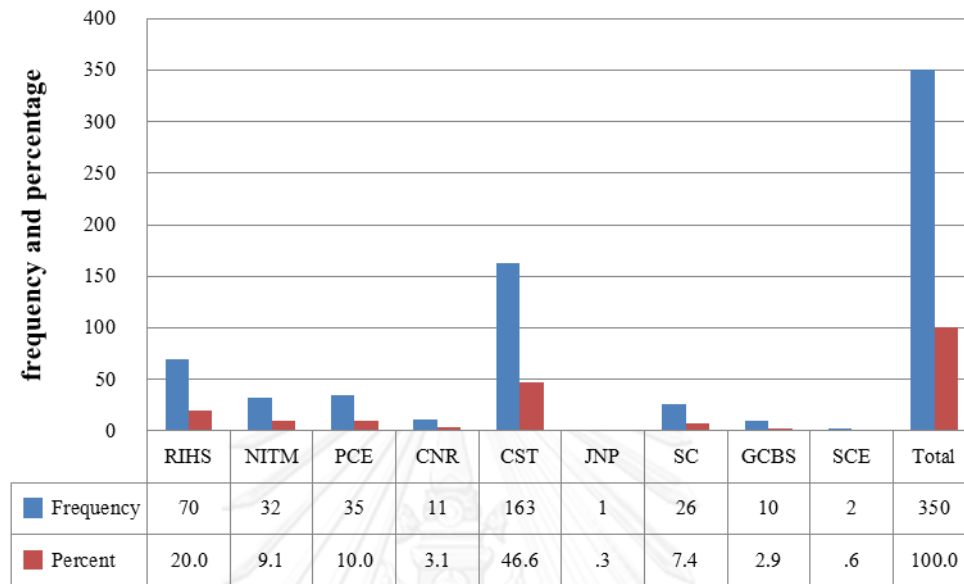
Figure 3.3: No. of respondents from different colleges and institutions

In the above figure, x-axis presents the respondents in frequency and percentage and y-axis present the name of the colleges.

The collected data were analyzed using SPSS 20 statistical package. Total of 350 students from different colleges and institutions were responded, out of which 234 were male and 116 were female with 66.9% and 33.1% respectively. The details are discussed in next chapter.

CHAPTER 4

EXPERIMENTAL RESULTS

This chapter describes the analysis and the results of the study and is divided into four sections. Section 4.1 presents the Demographic and Facebook utility information in details, Section 4.2 describes Reliability, Factor and Regression and their analysis result, in Section 4.3 chi square is used to analyzed the findings, Section 4.4 presents normality test, Section 4.5 presents independent t-test for gender based on four factors, Section 4.6 presents an ANOVA test for the study and last Section 4.7 shows significant difference in gender and course based on their satisfactory level in use of Facebook conducting Mann-Whitney U Test.

4.1.   Demographic and Facebook utility information result

Total of 350 students from different colleges and institutes were responded, out of which 234 were male and 116 were female with 66.9% and 33.1% respectively and the majority (n=270) were from the age between 21-25 years old with 77.1%. The majority of the participants (n=116) were having more than 500 friends in their Facebook friend list. From the sample collected, 82.6% were taking non IT course with sample number of 289 where as 17.4% were taking IT course with sample number of 61. Regardless of how busy the students are with their academic schedule, they keep using Facebook everyday with most of the respondents (n=117) spends less than one hour on Facebook followed by the respondents (n=113) who spends one to two hours per day. About 63.1% of respondents spend their time on Facebook chatting with their friends which is very high comparing to other activities. A sample of demographic characteristics and Facebook utility information is shown in following Table 4.1 followed by the figures.

Table 4.1: Demographic and Facebook utility information result

Measure	Item	Frequency	Percentage (%)
Gender	Male	234	66.9
	Female	116	33.1
Age group	15-20	47	13.4
	21-25	270	77.1
	26-30	14	4.0
	Greater than 30	19	5.4
Your course	IT	61	17.4
	Non IT	289	82.6
How many friends you have in your friend list?	0-100	32	9.1
	101-200	47	13.4
	201-300	58	16.6
	301-400	54	15.4
	402-500	43	12.3
	More than 500	116	33.1
How many hours a day do you spend on Facebook?	Less than 1 hour	117	33.4
	1-2 hours	113	32.3
	2-3 hours	50	14.3
	3-4 hours	36	10.3
	4-5 hours	10	2.9
	More than 5 hours	24	6.9
Most of the time you spend your time in Facebook on	Playing game	21	6.0
	Chatting with friends	221	63.1
	Status updates	30	8.6
	Finding friends	14	4.0
	Photo galleries	36	10.3
	Others	28	8.0

Following Figures shows the graphical representation of the demographic and Facebook utility information.
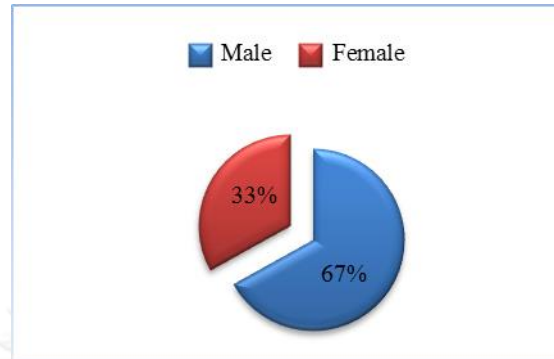
Figure 4.1: Gender
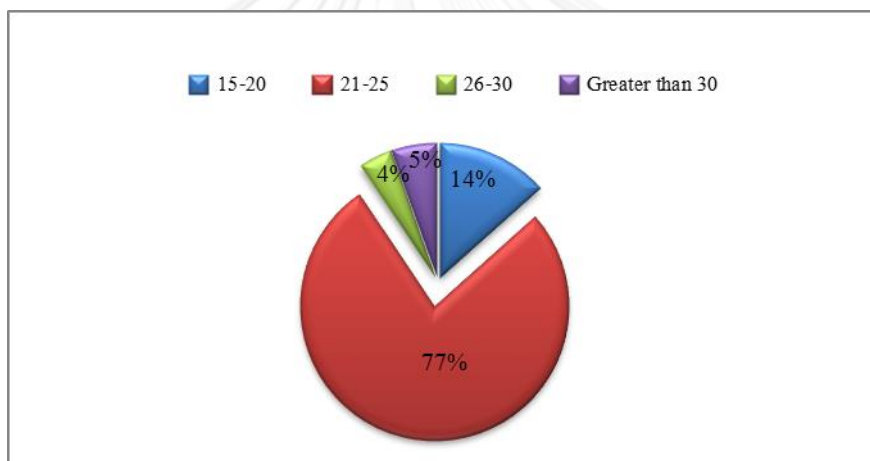
Figure 4.2: Age Group
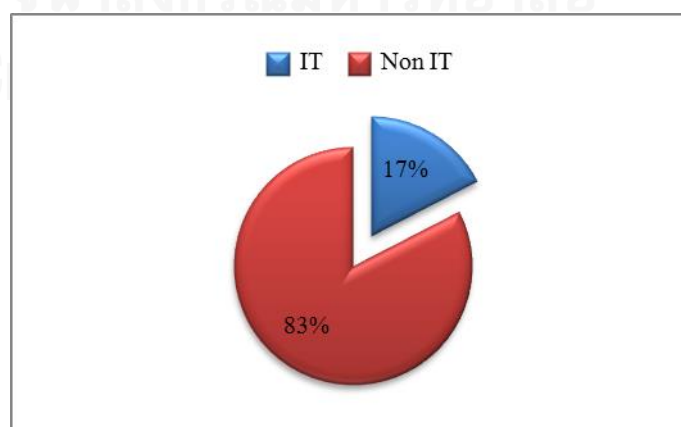
Figure 4.3: Course
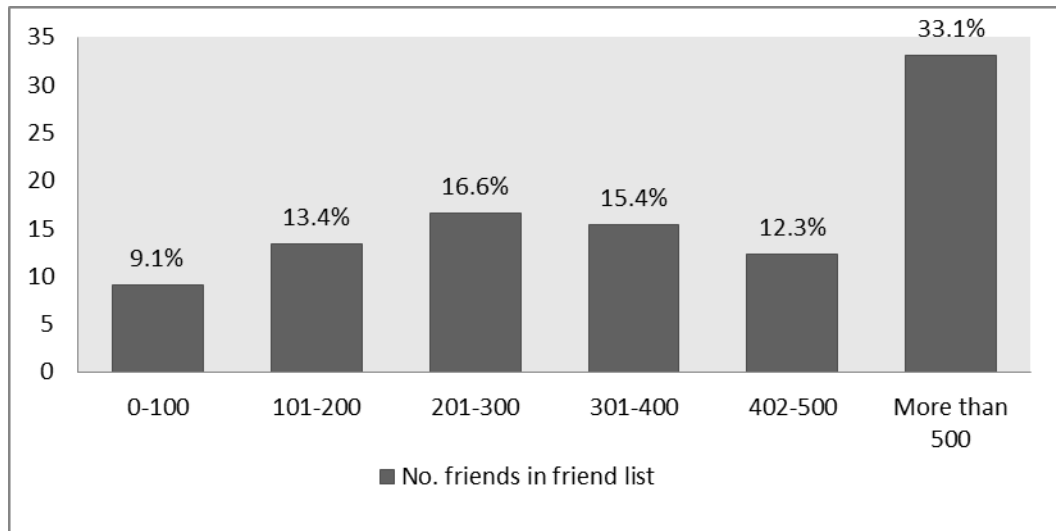
Figure 4.4: No. of friends in their friend list
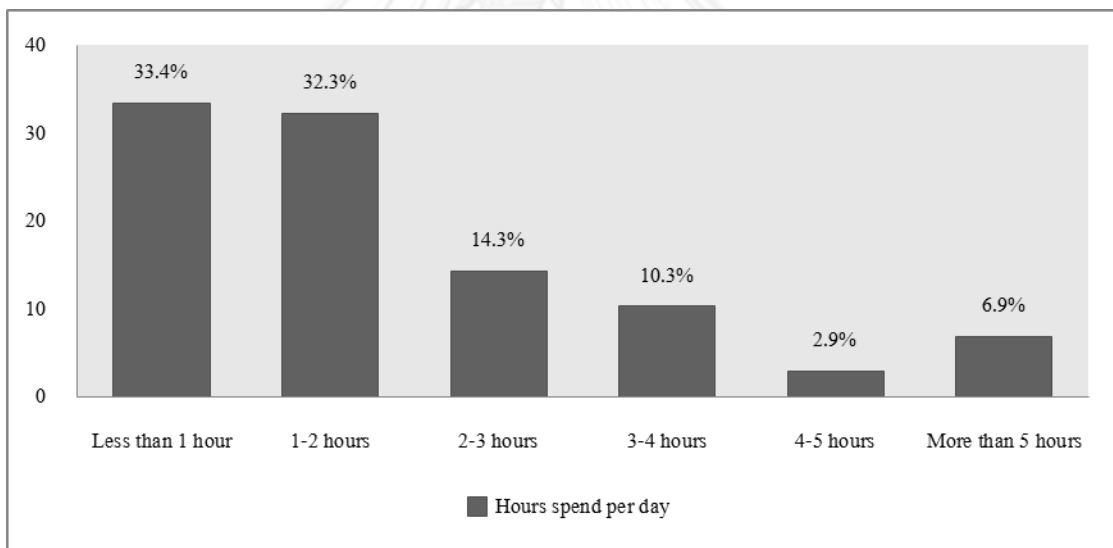
Figure 4.5: Number of hours spent on Facebook per day
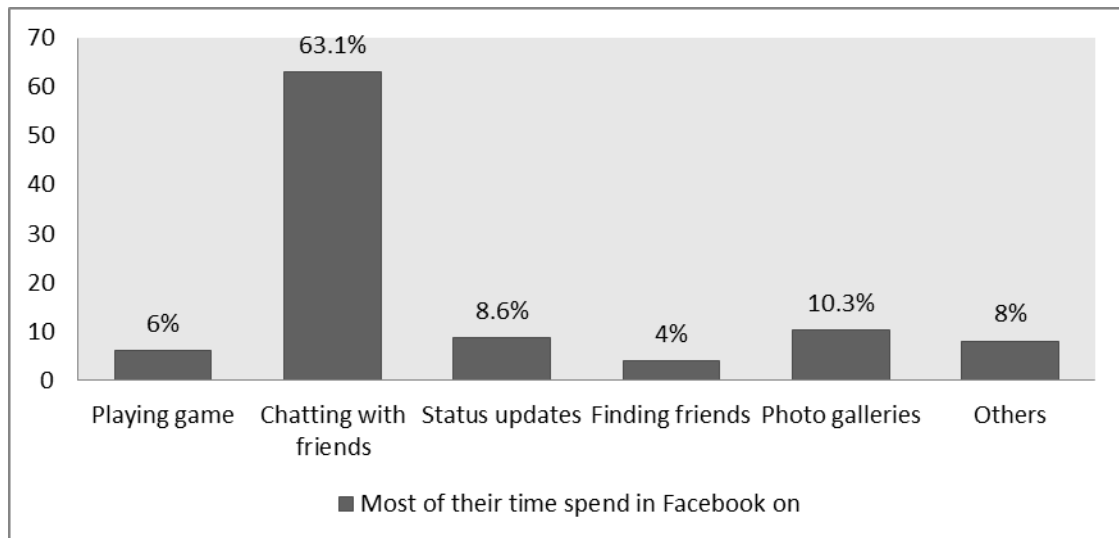
Figure 4.6: Activities in Facebook user spent most of their time

4.2.   Reliability, Factor and Regression Result

Cronbach's alpha coefficient was tested for reliability analysis which is the most frequently used estimate of internal consistency. It is an estimate of the internal consistency reliability associated with the scores derived from a scale or a composite score. Reliability is important because in the absent of reliability it is impossible to have any validity association with scores of the scales and is done before doing any type of analysis on the data. It has been indicated that 0.70 is standard reliability coefficient (Nunnaly, 1994) but lower thresholds are sometimes used.

The factor analysis was applied to the questions by using the principle components extractions method and varimax rotation. Some questions which are negative in values are eliminated in order to increase the factor loading values to reach the acceptable standard (with factor loading of 0.50 or more).

4.2.1. Regression analysis between users and independent factors and dependent factor

We have tested reliability for this study based on all the users and each item has gained a cronbach's alpha coefficient value greater than 0.614 as described here. Constructs such as Social Influence, Social Interaction, Social Enhancement,

Entertainment Value and Intention to use obtained a cronbach's α 0.614, 0.746, 0.722, 0.728 and 0.705 respectively.

After performing reliability analysis, effective items were carried out for factor analysis. After eliminating negative point questions, the remaining questions for Social Influence, Social Interaction, Social Enhancement, Entertainment Value and Intention to use are four, four, three, four and two respectively. These remaining items are then used for regression analysis. Table 4.2 shows the factor loading value and Cronbach's alpha for users in general.

Figure 4.7 shows the research model to describe linear regression analysis result for all samples. Significant hypotheses are indicated with triple asterisks (***) and insignificant hypothesis is represented by ns (not significant). Social Interaction (β=0.279, p<0.001), Social Enhancement (β=0.358, p<0.001) and Entertainment Value (β=0.226, p<0.001) has positive impact to users' Intention to use Facebook, whereas the factor Social Influence (β=0.062, p>0.05) which does not met the significant level; this suggest that no matter what people says or forced the users but they never influenced their intention to use Facebook from their family and friends. Beta (β) values and their significant (sig.) values are shown in Table 4.2 and the abbreviations of the items are given in Table 4.3.
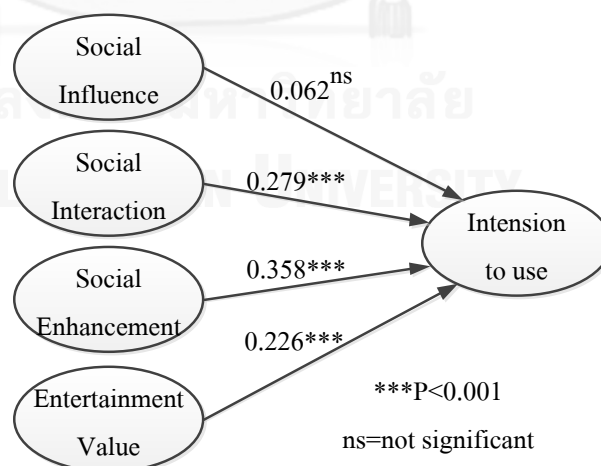
Figure 4.7: Linear regression analysis result based on all users
(n=350)

Table 4.2: Results of construct items for all valid users

Construct	Items	Factor loading	Cronbach's alpha (α)	Beta (β)	Sig. (P-Value)
Social Influence	SI1	0.665	0.614	0.062	0.183
	SI2	0.719			
	SI3	0.760			
	SI4	0.565			
Social Interaction	SINT1	0.714	0.746	0.279	0.000
	SINT2	0.677			
	SINT3	0.740			
	SINT4	0.750			
Social Enhancement	SE1	0.746	0.722	0.358	0.000
	SE2	0.777			
	SE3	0.725			
Entertainment Value	EV1	0.729	0.728	0.226	0.000
	EV2	0.659			
	EV3	0.746			
	EV4	0.644			
Intention to Use	IU1	0.879	0.705		
	IU2	0.879			

Table 4.3: Abbreviations of the items

Construct	Item Code	Items
Social Influence	SI1	I am using Facebook because others are using Facebook
	SI2	My friends forced me to use Facebook
	SI3	People who influence my behavior would think that I should use Facebook
	SI4	People who are important to me would think that I should use Facebook
Social Interaction	SINT1	Facebook makes me more comfortable to interact and keep in touch with old and new friends
	SINT2	Facebook helps me to find a new friend and interact with them
	SINT3	Most of the time I use Facebook to communicate with my friends
	SINT4	I find it easy to communicate with others through Facebook
Social Enhancement	SE1	I feel by using Facebook will make oneself more popular
	SE2	I use Facebook to impress others by updating the status, uploading the photos, commenting, sharing, etc
	SE3	I feel proud to tell my friends that I am on Facebook
Entertainment Value	EV1	I generally use Facebook when I feel bored
	EV2	Facebook provides me a lot of joy, it is just cool and fun
	EV3	Facebook keep me engaged through chat, games, post, photos, etc
	EV4	A wide range of applications is available on Facebook which keeps me engaged with.
Intention to Use	IU1	I intend to recommend my friends to use Facebook in the future
	IU2	I intend to keep using Facebook in the future

Social Enhancement has the strongest impact on Intention to use Facebook by the students in Bhutan. When the users feel that using Facebook makes them more known to the people and expand social network, they will have higher tendency towards Intention to use Facebook. Majority of the participants (n=116) were having more than 500 friends in their Facebook friend list which is comparatively higher than lower ranges and that can be one reason that Bhutanese students are interested in expanding their social network.

The factor Social Interaction does have positive impact on Intention to use Facebook. This supports the fact that students feel more comfortable to find new friends and interact with them, easier to communicate and it helps them to keep in touch with old and new friends.

Study conducted by a group (Lin & Lu, 2011) suggested that with increased peer connections and compatible online facilities, Social Networking Services becomes more interesting and therefore found that factor Enjoyment has strong impact on Intention to use Social Networking Services. Similarly a factor Entertainment Value for this study does have a high level of impact on Intention to use Facebook. This might be because it contains a wide range of applications and games which let the students to engaged with whenever they feel bored and moreover there are lots of features such as chat, photos, post, etc. which lets students to entertain themselves. Generally the students are using it to save their boredom and keep them engaged with its activities and applications.

In contrast this study observed that Social Influence and Intention to use Facebook are not associated. Thus, this exhibits that students do not have any influence of their family and friends on using Facebook. This also indicates that Bhutanese students are not sensitive to other's opinions in regards of using social networking; they are using it on their own wish and acceptance.

4.2.2. Regression analysis between gender group and independent factors and dependent factor

Realiability analysis used cronbach's alpha coefficient to assess the model's internal consistency for male samples (n=234) and cronbach's alpha value of the construct ranged from 0.630 to 0.759. The indicator factor loading of every item in the measuring model of this study exceeded 0.5, therefore meeting all the conditions for regression analysis. The values of factor loading and cronbach's alpha (α) for the items and constructs are shown in Table 4.4.

Table 4.4: Results of construct items for male samples

Construct	Items	Factor loading	Cronbach's alpha (α)	Beta (β)	Sig. (P-Value)
Social Influence	SI1 SI2 SI3 SI4	0.698 0.722 0.796 0.531	0.630	-0.038	0.504
Social Interaction	SINT1 SINT2 SINT3 SINT4	0.723 0.647 0.756 0.759	0.759	0.327	0.000
Social Enhancement	SE2 SE3 SE4	0.740 0.741 0.751	0.708	0.331	0.000
Entertainment Value	EV1 EV2 EV3 EV4	0.763 0.698 0.772 0.517	0.749	0.206	0.000
Intention to Use	IU1 IU2	0.878 0.878	0.701		

Regression analysis result for male sample is described in Figure 4.8. Highly significant hypotheses are indicated with triple asterisks (***) and insignificant hypothesis is represented by ns (not significant). Social Interaction (β=0.327, p<0.001), Social Enhancement (β=0.331, p<0.001) and Entertainment Value (β=0.206, p<0.001) has direct positive impact to users' Intention to use Facebook, in contrast the factor Social Influence (β=-0.038, p>0.05) which is insignificant in determining male users' Intention to use Facebook. Beta (β) values and their significant (sig.) values are shown in Table 4.4 in detail.
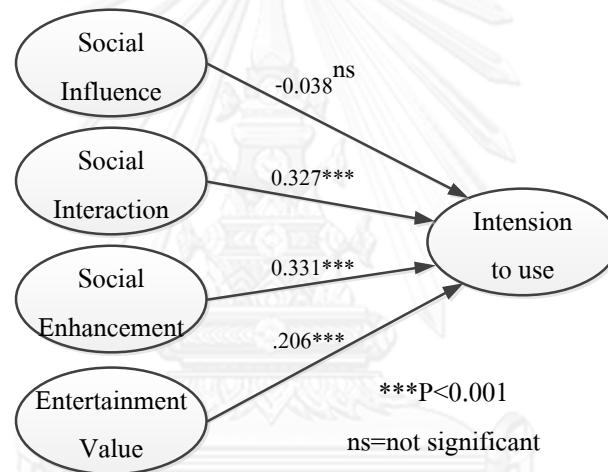
Figure 4.8: Linear regression analysis result for male samples (n=234)

Realiability analysis used cronbach's alpha coefficient to assess the model's internal consistency for female samples (n=116) and cronbach's alpha value of the construct ranged from 0.614 to 0.759. The indicator factor loading of every item in the measuring model of this study exceeded 0.5, therefore meeting all the conditions for regression analysis. The values of factor loading and cronbach's alpha (α) for the items and constructs are shown in Table 4.5.

Regression analysis result for female sample is described in Figure 4.9. The significant value (p-value) < 0.001, 0.01 and 0.05 is used to make the hypotheses decision. All the factors for female samples have positive direct impact on Intention

to use Facebook as described here, Social Influence (β=0.236, p<0.01), Social Interaction (β=0.157, p<0.05), Social Enhancement (β=0.408, p<0.001) and Entertainment Value (β=0.252, p<0.01). Beta (β) values and their significant (sig.) values are shown in Table 4.5 in detail.

Table 4.5: Results of construct items for female samples

Construct	Items	Factor loading	Cronbach's alpha (α)	Beta (β)	Sig. (P-Value)
Social Influence	SE1	0.650	0.614	0.236	0.003
	SE2	0.646			
	SE3	0.563			
	SE4	0.564			
Social Interaction	SINT1	0.689	0.746	0.157	0.049
	SINT2	0.699			
	SINT3	0.659			
	SINT4	0.686			
Social Enhancement	SE2	0.636	0.722	0.408	0.000
	SE3	0.768			
	SE4	0.611			
Entertainment Value	EV1	0.644	0.728	0.252	0.002
	EV2	0.566			
	EV3	0.714			
	EV4	0.726			
Intention to Use	IU1	0.882	0.713		
	IU2	0.882			
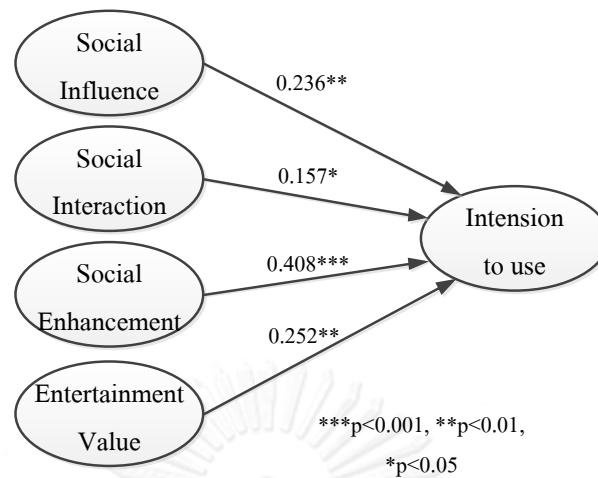
Figure 4.9: Linear regression analysis result for female samples (n=116)

The gender makes a remarkable difference in the impact of Social Influence on Intention to use Facebook. Figures 4.8 and 4.9 are the results of structural model analysis for male and female users and the detailed results are shown in Tables 4.4 and 4.5. First, in the factor Social Influence has significant impact on Intention to use with female, but not with male. Research done by a group (Lin & Lu, 2011) has shown that female are more readily or excessively affected by other's opinions and are influenced by their families and friends in use of new technology. Whereas, male uses technologies, as their task requires. Similarly, the Bhutanese female are easily influenced by their colleagues and family if they feel that their opinions help them improve themselves socially as well as educationally.

This study also found that of all factors, Social Enhancement has greatest positive impact on Intention to use Facebook for female followed by Entertainment Value, Social Influence and Social Interaction, whereas for male all the factors except a factor Social Influence has very strong significant on Intention to use Facebook.

4.3.   Chi Square Test

Chi-square (X^2) test is used to examine the relationship between two or more categorical variables which may be either both nominal or both ordinal or a mixed and the equation is represented as $X^2 = \sum \frac{(o-e)^2}{e}$,

Where, o = the observed frequencies

e = the expected frequencies and

$\sum$ = the 'sum of'

Chi-square value and the p value < 0.001, 0.01 and 0.05 is used to make the hypotheses decision. Each association results are described below

4.3.1. Association between demographic variables and Facebook utility information variables

This section shows the relationship between the demographic variables such as gender and course and the Facebook utility variables such as number of friends they have in their Facebook, number of hours spent on Facebook per day and the time spent on different activities on Facebook. Each association results are described below and detailed chi-square results are shown in APPENDIX C

1) Association between gender and number of friends in their friend list

H_0=There is no relationship between gender and number of friends they have in their Facebook friend list
H_1=There is relationship between gender and number of friends they have in their Facebook friend list

This study observed that there is a strong evidence of relationship between gender and number of friend they have in their Facebook (Chi-square (X^2) = 11.450, p < 0.05). It has been reported that female students are having higher number of Facebook friends than male students(Pempek, Yermolayeva, & L., 2009). Similarly, this study revealed that female students are having more Facebook friends than male students. Although both male and female have high percentage in regard with highest range of Facebook

friends (500+) when comparing with lower ranges, however 43.1% of female compared to 28.1% of male are having more friends in their Facebook as shown in Table 4.6

Table 4.6: Percent and count (frequency) distribution of number of friends in their Facebook friend list and its association with gender

Gender		Ranges of Facebook friend						Chi-square (X^2)
		0-100	101-200	201-300	301-400	401-500	500+	
Male	%	10.7%	15.4	15.4	16.7	13.7	28.2	
	Count	25	36	36	39	32	66	
Female	%	6.0	9.5	19.0	12.9	9.5	43.1	11.450 (P=0.043)
	Count	7	11	22	15	11	50	

*Note: Percent by row and Count by row

2) Association between gender and number of hours spent on Facebook per day

H_0=There is no relationship between gender and number of hours spent on Facebook per day H_1=There is relationship between gender and number of hours spent on Facebook per day

Since p > 0.05 for this association test, we fail to reject null hypothesis. Therefore, this study depicts that there is no evidence of relationship between gender and number of hours spent on Facebook per day (Chi-square (X^2) = 8.550, p > 0.05) in other words both male and female spent equal number of hours on Facebook as shown in Table 4.7. This depicts that both male and female spent the same amount of time on Facebook.

Table 4.7: Percent and count (frequency) distribution of number of hours spent on Facebook and its association with gender

Gender		Number of hours spent on Facebook per day					Chi-square (X^2)
		< 1 hour	1-2 hours	2-3 hours	3-4 hours	>4 hours	
Male	%	29.1	32.1	15.8	12.0	11.1	8.550(P=0.073)
	Count	68	75	37	28	26	
Female	%	42.2	32.8	11.2	6.9	6.9	
	Count	49	38	13	8	8	

*Note: Percent by row and Count by row

3) Association between gender and the time spent on different Facebook activities

H_0=There is no relationship between gender and time spent on different Facebook activities

H_1=There is relationship between gender and time spent on different Facebook activities

This study revealed that there is a strong evidence of a relationship between gender and time spent on different Facebook activities (Chi-square (X^2) = 11.655, p < 0.05). Both male and female has high percentage on activity "chatting with friends" when comparing with other activities but male are more likely to spent more time on chat than female as shown in Table 4.8

Table 4.8: Percent and count (frequency) distribution of time spent on Facebook activities and its association with gender

Gender		Timespent on different Facebook activities						Chi-square (X^2)
		Playing games	Chatting with friends	Status update	Finding friends	Photo galleries	others	
Male	%	4.3	67.1	7.3	3.8	8.1	9.4	11.655(P=0.040)
	Count	10	157	17	9	19	22	
Female	%	9.5	55.2	11.2	4.3	14.7	5.2	
	Count	11	64	13	5	17	6	

*Note: Percent by row and Count by row

1) Association between students' course and number of hours spent on Facebook per day

H_0=There is no relationship between students' course and number of hours spent on Facebook per day

H_1=There is relationship between students' course and number of hours spent on Facebook per day

This result also shows that there is no evidence of a relationship between students' course and number of hours spent by users per day on Facebook (Chi-square (X^2) = 2.832, p > 0.05). Their percent distribution is shown in Table 4.9

Table 4.9: Per cent and count (frequency) distribution of number of hours spent on Facebook and its association with students' course

Course		Number of hours spent on Facebook per day					Chi-square (X^2)
		< 1 hour	1-2 hours	2-3 hours	3-4 hours	>4 hours	
IT	%	26.2	32.8	14.8	14.8	11.5	2.832(P=0.586)
	Count	16	20	9	9	7	
Non-IT	%	34.9	32.2	14.2	9.3	9.3	
	Count	101	93	41	27	27	

*Note: Percent by row and Count by row

4.4. Normality test

A Shapiro-Wilk's test (p>.05) as shown in Table 4.10 and a visual inspection of their histograms, normal Q-Q plots and box plots showed that the factor Social Influence, Social Interaction, Social Enhancement and Entertainment Value were approximately normally distributed after performing logarithm transformation, with a skewness of -.058 (Standard Errors = .130) and a kurtosis of -.284 (Standard Errors = .260) for Social Influence, a skewness of -.055 (Standard Errors = .130) and a kurtosis of -.036 (Standard Errors = .130) for Social Interaction, a skewness of -.262 (Standard Errors = .130) and a kurtosis of -.150 (Standard Errors = .260) for Social Enhancement and a skewness of .026 (Standard Errors = .130) and a kurtosis of .622 (Standard Errors

= .260) for Entertainment Value. After performing normality test, then we have conducted an independent t-test and one-way ANOVA test.

Table 4.10: Tests of Normality

Dependent variables	Shapiro-Wilk		
	Statistic	df	Sig.
Social Influence	.993	350	.129
Social Interaction	.996	350	.633
Social Enhancement	.992	350	.067
Entertainment Value	.993	350	.080

4.5. Significant Difference in Gender based on Four Factors

We used an independent t-test to understand whether the gender difference will affect the four factors such as Social Influence, Social Interaction, Social Enhancement and Entertainment Value. Basically the independent t-test compares the means of two unrelated population groups on the same continuous variables. For our study, we considered male and female as two unrelated groups and each factors as continuous variables and conducted the independent t-test for all four factors separately. The research questions for the t-test is focused on the differences, therefore we framed four different questions to conduct an independent t-test for four dependent factors and they are described below.

1. Does a significant difference in mean values exist in gender based on Social Influence?

Hypothesis:

H_0 = There is no significant difference in means of gender based on Social Influence

H_1 = There is significant difference in means of gender based on Social Influence

According to Table 4.11, the Levene's Test for Equality of Variances shows that the significant Value (p=0.233) which is greater than 0.05 with F ratio (1.427), it means the two variances are not significantly different; that is the two variances are approximately equal. So the equal variances were assumed with t value of -1.847 and 348 degree of freedom. The p value is .066 which is greater than 0.05. Therefore, the null hypothesis could not be rejected and we conclude that there is no

statistically significant difference in mean values between two groups in Social Influence. Both Bhutanese males and females consider the use of Facebook is relatively same in terms of its Influential from their friends and family.

Table 4.11: Results of Compare Means for Social Influence

		Levene's Test for Equality of Variances		t-test for Equality of Means				
		F	Sig.	t	df	Sig. (2-tailed)	95% Confidence Interval of the Difference	
							Lower	Upper
Social Influence	Equal variances assumed	1.427	.233	-1.847	348	.066	-.04762	.00149
	Equal variances not assumed			-1.918	253.662	.056	-.04674	.00062

2. Does a significant difference in mean values exist in gender based on Social Interaction?

<u>Hypothesis:</u>

H_0 = There is no significant difference in means of gender based on Social Interaction

H_1 = There is significant difference in means of gender based on Social Interaction

According to Table 4.12, the Levene's Test for Equality of Variances shows that the significant Value (p=0.650) which is greater than 0.05 with F ratio (.206), it means the two variances are not significantly different; that is the two variances are approximately equal. So the equal variances were assumed with t value of -3.977 and 348 degree of freedom. The p value is .000 which is less than 0.05 significant level. Therefore, we reject the null hypothesis and we conclude that there exists a statistically significant difference between two groups in Social Interaction; the

female students (with a mean of 0.63) prefer to have more interaction than male (with a mean of 0.58). Although both Bhutanese males and females are very much interested in social interaction but female lacks their courage to interact with others face-to-face and therefore the social networking services like Facebook in specific really helped the Bhutanese females in general and female students in specific to interact with their known and unknown people virtually online. That must be the reason why this study revealed that there is a difference in means of male and female.

Table 4.12: Results of Compare Means for Social Interaction

		Levene's Test for Equality of Variances		t-test for Equality of Means				
		F	Sig.	t	df	Sig. (2-tailed)	95% Confidence Interval of the Difference	
							Lower	Upper
Social Interaction	Equal variances assumed	.206	.650	-3.977	348	0.000	-.06953	-.02352
	Equal variances not assumed			-4.041	239.233	0.000	-.06921	-.02384

3. Does a significant difference in mean values exist in gender based on Social Enhancement?

Hypothesis:

H_0 = There is no significant difference in means of gender based on Social Enhancement

H_1 = There is significant difference in means of gender based on Social Enhancement

According to Table 4.13, the Levene's Test for Equality of Variances shows that the significant Value (p=0.517) which is greater than 0.05 with F ratio (.421), it

means the two variances are not significantly different; that is the two variances are approximately equal. So the equal variances were assumed with t value of 1.953 and 348 degree of freedom. The p value is .052 which is greater than 0.05. Therefore, the null hypothesis could not be rejected and we conclude that there is no statistically significant difference between two groups in Social Enhancement. This result shows that both male and female students in Bhutan considers the factor Social Enhancement as relatively same for them and the reason could be because both male and female are always positive towards enhancing themselves socially and build social network stronger.

Table 4.13: Results of Compare Means for Social Social Enhancement

		Levene's Test for Equality of Variances		t-test for Equality of Means				
		F	Sig.	t	df	Sig. (2-tailed)	95% Confidence Interval of the Difference	
							Lower	Upper
Social Enhancement	Equal variances assumed	.421	.517	1.953	348	.052	-.00017	.04773
	Equal variances not assumed			1.891	211.016	.060	-.00101	.04857

4. Does a significant difference in mean values exist in gender based on Entertainment Value?

Hypothesis:

H_0 = There is no significant difference in means of gender based on Entertainment Value

H_1 = There is significant difference in means of gender based on Entertainment Value

According to Table 4.14, the Levene's Test for Equality of Variances shows that the significant Value (p=0.109) which is greater than 0.05 with F ratio (2.586), it means the two variances are not significantly different; that is the two variances are approximately equal. So the equal variances were assumed with t value of 1.745 and 348 degree of freedom. The p value is .082 which is greater than 0.05. Therefore, the null hypothesis could not be rejected and we conclude that there is no statistically significant difference between two groups in Entertainment Value. Since there is so many numbers of features and tools which both genders can always access through it and entertain themselves. Therefore this study revealed that both Bhutanese male and female students considers the Intention to use Facebook is relatively same in terms of factor Entertainment Value.

Table 4.14: Results of Compare Means for Entertainment Value

		Levene's Test for Equality of Variances		t-test for Equality of Means				
		F	Sig.	t	df	Sig. (2-tailed)	95% Confidence Interval of the Difference	
							Lower	Upper
Entertainment Value	Equal variances assumed	2.586	.109	1.745	348	.082	-.00203	.03405
	Equal variances not assumed			1.668	204.027	.097	-.00292	.03494

4.6. Significant Difference in number of hours spent by students in Facebook based on Four Factors

We used one-way ANOVA test to find out whether the differences in the users' Facebook activities will affect the four factors or not. Basically, the one-way ANOVA test is used to determine or compare the means of three or more unrelated population groups on the same continuous variable. In our study, we have divided

the users' activities into six groups (playing game, chatting with friends, status update, finding friends, photo galleries and others) and dependent variables are Social Influence, Social Interaction, Social Enhancement and Entertainment Value. In the group others, the users' have specified their other activities and it is shown in APPENDIX D. The research questions for the one-way ANOVA test is focused on the differences, therefore this study developed four different questions and they are presented below.

1. Does a significant difference in mean values exist between the users' Facebook activities based on Social Influence?

Hypothesis:

H_0 = There is no significant difference in mean values between users' Facebook activities based on Social Influence

H_1 = There is significant difference in mean values between users' Facebook activities based on Social Influence

Table 4.15 shows the output of the ANOVA test whether there is statistically significant difference between the groups' mean. Since we can see that the significant level for this test is greater than 0.05 (p=0.357), therefore, the null hypothesis could not be rejected and we conclude that there exist no significant difference between the groups of the users' Facebook activities based on Social Influence. All kinds of users' Facebook activities in Bhutan considers relatively same in terms of factor Social Influence.

Table 4.15: ANOVA test for Social Influence

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	.067	5	.013	1.105	.357
Within Groups	4.181	344	.012		
Total	4.249	349			

2. Does a significant difference in mean values exist between the users' Facebook activities based on Social Interaction?

Hypothesis:

H_0 = There is no significant difference in mean values between users' Facebook activities based on Social Interaction

H_1 = There is significant difference in mean values between users' Facebook activities based on Social Interaction

According to the Table 4.16, the p value is 0.000 which is less than 0.05 significant level. Therefore, we reject the null hypothesis and we conclude that there exists a statistically significant difference between the groups in Social Interaction. To know which of the specific groups differed, we did post-hoc test and the result of this test is shown in Table E.1 under APPENDIX E. From the Table E.1, we can see that there is a significant difference between group playing games and chatting with friends (p=0.012), between the group chatting with friends and status update (p=0.043), between the group chatting with friends and finding friends (p=0.026), between the group chatting with friends and others (p=0.000) and the group between photo galleries and chatting with friends (0.000) which are all less than 0.05 significant level, however there were no difference between the groups whose significant values greater than 0.05 as shown in Table E.1.

Table 4.16: ANOVA test for Social Interaction

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	.355	5	.071	6.966	.000
Within Groups	3.506	344	.010		
Total	3.861	349			

3. Does a significant difference in mean values exist between the users' Facebook activities based on Social Enhancement?

Hypothesis:

H_0 = There is no significant difference in mean values between users' Facebook activities based on Social Enhancement

H_1 = There is significant difference in mean values between users' Facebook activities based on Social Enhancement

According to the Table 4.17, we see that the significant level is equal to 0.05 (p=0.050), therefore, we reject the null hypothesis and we conclude that there exists a statistically significant difference between the groups based on Social Enhancement. To know which of the specific groups differed, we did post-hoc test and the result of this test is shown in table E.2 under APPENDIX E. We can see from Table E.2 that there is a significant difference in the activities "finding friends" and "others" with p value 0.010 which is less than 0.05 significant level. However, there is no difference between other groups apart from finding friends and others.

Table 4.17: ANOVA test for Social Enhancement

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	.127	5	.025	2.238	.050
Within Groups	3.918	344	.011		
Total	4.045	349			

4. Does a significant difference in mean values exist between the users' Facebook activities based on Entertainment Value?

Hypothesis:

H_0 = There is no significant difference in mean values between users' Facebook activities based on Entertainment Value

H_1 = There is significant difference in mean values between users' Facebook activities based on Entertainment Value

Table 4.18 shows the output of the ANOVA test whether there is statistically significant difference between the groups' mean. Since we can see that the significant level for this test is greater than 0.05 (p=0.154), therefore, the null hypothesis could not be rejected and we conclude that there exist no significant difference between the groups of the users' Facebook activities based on Entertainment Value. All kinds of users' Facebook activities considers relatively same in terms of factor Entertainment Value since all these activities are meant for

entertaining the users and therefore the Bhutanese Facebook users treat them comparatively same.

Table 4.18: ANOVA test for Entertainment Value

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	.053	5	.011	1.622	.154
Within Groups	2.238	344	.007		
Total	2.291	349			

4.7. Significant Difference in Gender and course based on their satisfactory level

We have also conducted a test on users' satisfactory levels in usage of Facebook in our study. For this test we used Mann-Whitney U test. Mann-Whitney U test is a nonparametric hypothesis test used to compare differences between two independent groups and their dependent variable is either continuous or ordinal but not nominal distributed. We compared the differences between gender groups based on their satisfactory level and between course groups based on their satisfactory level and their results are described below

1. Does a significant difference exist between male and female in Facebook usage satisfaction?

   Hypothesis:

   H_0 = No significant gender difference exist in Facebook usage satisfaction

   H_1 = Significant gender difference exist in Facebook usage satisfaction

   As shown in Table 4.20 with p value greater than 0.05 (Asymp. Sig. (2-tailed)= .345), the null hypothesis could not be rejected and we conclude that the data does not provide statistically significant evidence of a difference between male and female in usage of Facebook satisfaction. Both male and female Facebook users in Bhutan considers relatively same when coming to their satisfactory level of Facebook usage.

Table 4.19: Result of Mean Rank for Gender

	Gender	N	Mean Rank	Sum of Ranks
satisfactory	Male	234	177.59	41556.00
	Female	116	168.16	19170.00
	Total	350		

Table 4.20: Result of Mann-Whitney U test for Gender

	satisfactory
Mann-Whitney U	12615.000
Wilcoxon W	19170.000
Z	-.945
Asymp. Sig. (2-tailed)	.345

2. Does a significant difference exist between IT and Non-IT in Facebook usage satisfaction?

Hypothesis:

H_0 = No significant course difference exist in Facebook usage satisfaction

H_1 = Significant course difference exist in Facebook usage satisfaction

As shown in Table 4.22 with p value less than 0.05 (Mann-Whitney U = 7125, p = 0.014), the null hypothesis could be rejected and we conclude that there exist a significant difference between IT and Non-IT users in Facebook usage satisfaction (with mean rank for users with IT is higher than users with non-IT background) as shown in Table 4.21. Although there wasn't significant difference in satisfaction of Facebook usage between male and female, however there exists difference in Facebook usage satisfaction based on IT and non-IT users. IT users of Facebook are more satisfied when comparing with non-IT Facebook users and the reason could be since Facebook is all related with technologies; Facebook must be easy and more convenient for IT users to use it when comparing to non-IT Facebook users in Bhutan.

Table 4.21: Result of Mean Rank for Course

	course	N	Mean Rank	Sum of Ranks
satisfactory	IT	61	149.25	8955.00
	Non-IT	289	179.76	51771.00
	Total	350		

Table 4.22: Result of Mann-Whitney U test for Course

	satisfactory
Mann-Whitney U	7125.000
Wilcoxon W	8955.000
Z	-2.461
Asymp. Sig. (2-tailed)	.014
a. Grouping Variable: course	

CHAPTER 5

CONCLUSIONS

In this chapter, we present the limitations and Future Research in Section 5.1 which is followed by Conclusion n Section 5.**Limitations and Future Research**

In interpreting the results of this research, one must pay attention to a number of limitations and its future research as well.

- First, this study represents students' uses of Facebook only; therefore researcher must take care in findings to other social networks in future. The means for use of other sites may differ from Facebook usage. Therefore it is necessary to compare and contrast among the usage of different social networking sites.

- Second, researchers can also study Facebook based on teaching and learning since this study focused on the purpose of using Facebook which doesn't give any information on teaching learning purpose.

- In order to better understand the users' use of SNS in depth, researchers should introduce qualitative interview method since this study focused on quantitative research model and the questionnaire was launched online.

5.2. Conclusion

Based on the results, we conclude that Intention to use Facebook was strongly significant by the factor Social Enhancement whereas the factor Social Influence is insignificant in determining the students' Intention to use Facebook in general. When coming to the findings based on gender, all factors have significant impact on Intention to use for both male and female except a factor Social Influence which has very high significant with female whereas it is insignificant for male in determining Intention to use Facebook in Bhutan.

This study also shows that female are more likely to have larger number of friends than male whereas male spend more time on activity "chatting with friends" than

female. We also found that student who are 26 and above in their age spent fewer hours on Facebook whereas students with age of 25 and below spent more time on Facebook. Although, all age groups spent most of their Facebook time on activity "chatting with their friends" but younger generation students spent more time than old ones.

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APPENDICES

Chulalongkorn University

Topic: Study of Factors Influencing Intention to use Facebook: Case of University Students in Bhutan

Dear Participant,

As part of my studies in the Master of Computer Science at Chulalongkorn University, Thailand, I am undertaking a survey which is part of a thesis for the unit. I am seeking your response to the survey questions which would take approximately 10 – 15 minutes of your time. I ensure you that I will respect your time, privacy, anonymity, and your replies and confidentiality of the results will be strictly maintained. Therefore I would like to request you all to answer the questions as honest as possible.

Thank you for taking part in this survey which is part of a student project for the unit. The information provided in this survey will be used only for this project and will be kept confidential.

Part I: Please tick the appropriate one and answer against each question.

1. Gender
   - ○ Male
   - ○ Female
2. Your age group
   - ○ 15 – 20
   - ○ 21 – 25
   - ○ 26 – 30
   - ○ Greater than 30
3. What course are you taking?_____

4. How many friends you have in your friend list?

○ 0 – 100
○ 101 – 200
○ 201 – 300
○ 301 – 400
○ 401 – 500
○ More than 500

5. How many hours a day do you spend on Facebook?

○ less than 1 hour
○ 1 to 2 hours
○ 2 to 3 hours
○ 3 to 4 hours
○ 4 to 5 hours
○ More than 5 hours

6. Most of the time you spend your time in facebook on

○ Playing game
○ Chatting with friends
○ Status updates
○ Finding friends
○ Photos galleries
○ Others

Part II: Please mark whether you strongly agree, agree, neutral, disagree and strongly disagree with the following statement based on how you feel (For each statement, please tick the appropriate one)

Item	Strongly Disagree (1)	Disagree (2)	Neutral (3)	Agree (4)	Strongly Agree(5)
1. I am using facebook because others are using facebook (SI1)	1	2	3	4	5
2. My friends forced me to use facebook (SI2)	1	2	3	4	5
3. People who influence my behavior would think that I should use Facebook (SI3)	1	2	3	4	5
4. People who are important to me would think that I should use Facebook (SI4)	1	2	3	4	5

5. Facebook makes me more comfortable to interact and keep in touch with old and new friends (SINT1)	1	2	3	4	5
6. Facebook helps me to find a new friend and interact with them (SINT2)	1	2	3	4	5
7. Most of the time I use facebook to communicate with my friends (SINT3)	1	2	3	4	5
8. I find it easy to communicate with others through facebook (SINT4)	1	2	3	4	5
9. I feel by using facebook will make oneself more popular (SE1)	1	2	3	4	5
10. I use facebook to impress others by updating the status, uploading the photos, commenting, sharing, etc (SE2)	1	2	3	4	5
11. I feel proud to tell my friends that I am on facebook (SE3)	1	2	3	4	5
12. I generally use facebook when I feel bored (EV1)	1	2	3	4	5
13. Facebook provides me a lot of joy, it is just cool and fun (EV2)	1	2	3	4	5
14. Facebook keep me engaged through chat, games, post, photos, etc (EV3)	1	2	3	4	5
15. A wide range of applications is available on facebook which keeps me engaged with. (EV4)	1	2	3	4	5
16. I intend to recommend my friends to use facebook in the future (IU1)	1	2	3	4	5
17. I intend to keep using facebook in the future (IU2)	1	2	3	4	5

Part III: Please provide you satisfactory level and your thought about the facebookhere

1. How satisfied are you with Facebook, overall?
   - ○ Very unsatisfied
   - ○ Quite unsatisfied
   - ○ Quite satisfied
   - ○ Very satisfied

APPENDIX B

Table B.1: Details for the source of Items extracted for the study

Constructs	Items	Source
Social Influence	SI1: I am using facebook because others are using facebook	Cheung, et al. (2010)
	SI2: My friends forced me to use facebook	Developed by our self
	SI3: People who influence my behavior would think that I should use Facebook	Developed by our self
	SI4: People who are important to me would think that I should use Facebook	Cheung, et al. (2010)
Social Interaction	SINT1: Facebook makes me more comfortable to interact and keep in touch with old and new friends	Developed by our self
	SINT2: Facebook helps me to find a new friend and interact with them	Hew (2011)
	SINT3: Most of the time I use facebook to communicate with my friends	Hew (2011)
	SINT4: I find it easy to communicate with others through facebook	Developed by our self
Social Enhancement	SE1: I feel by using facebook will make oneself more popular	Hew (2011)
	SE2: I use facebook to impress others by updating the status, uploading the photos, commenting, sharing, etc	Cheung, et al. (2010)
	SE3: I feel proud to tell my friends that I am on facebook	Cheung, et al. (2010)
Entertainment Value	EV1: I generally use facebook when I feel bored	Cheung, et al. (2010)
	EV2: Facebook provides me a lot of joy, it is just cool and fun	Cheung, et al. (2010)
	EV3: Facebook keep me engaged through chat, games, post, photos, etc	Lin, et al. (2011)
	EV4: A wide range of applications is available on facebook which keeps me engaged with.	Lin, et al. (2011)

Intention to Use	IU1: I intend to recommend my friends to use facebook in the future	Lin, et al. (2011)
	IU2: I intend to keep using facebook in the future	Lin, et al. (2011)

APPENDIX C

Table C.1: Chi-Square test between gender and number of Facebook friends

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	11.450[a]	5	.043
Likelihood Ratio	11.561	5	.041
Linear-by-Linear Association	5.946	1	.015
N of Valid Cases	350		

Table C.2: Chi-Square test between gender and number of hours spent on Facebook per day

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	8.550[a]	4	.073
Likelihood Ratio	8.678	4	.070
Linear-by-Linear Association	7.624	1	.006
N of Valid Cases	350		

Table C.3: Chi-Square test between gender and time spent on different Facebook activities

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	11.655[a]	5	.040
Likelihood Ratio	11.381	5	.044
N of Valid Cases	350		

Table C.4: Chi-Square test between students' course and number of hours spent on Facebook per day

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	2.832[a]	4	.586
Likelihood Ratio	2.762	4	.598
Linear-by-Linear Association	2.114	1	.146
N of Valid Cases	350		

APPENDIX D

List of the activities the students does in Facebook when they are online apart from the activities mentioned in the question.

1. Reading jokes and facts.
2. Reading posts
3. Going through the comments posted
4. Read notifications and comments
5. Features such as page, group, events and etc.
6. Reading runny jokes and articles
7. some important news such as in pages are updated on FB quickly compared to other sources
8. News Feeds
9. Just checking in updates but don't chat much.
10. Just viewing
11. Checking quotes and reading blogs
12. Scrolling down the pages up and down
13. Just stay online and do nothing. Even with my laptop shutdown, I remain online 24X7.
14. Troll football and other pages
15. Checking post.
16. Reading an interesting pages
17. In all of the above options
18. Checking notification
19. Going through pages with facts & jokes
20. some important talks with family and friends, even for finding matters related to my course and studies

Table E.1: Post-hoc test for dependent variable Social Interaction

Multiple Comparisons

(I) Activities	(J) Activities	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
playing game	chatting with friends	-.72632532*	.21756261	.012	-1.3498287	-.1028219
	status update	-.18569223	.27107981	.984	-.9625683	.5911838
	finding friends	.08576474	.32873255	1.000	-.8563359	1.0278654
	photo galleries	-.24354043	.26161274	.938	-.9932852	.5062044
	others	.09996164	.27503739	.999	-.6882563	.8881796
chatting with friends	playing game	.72632532*	.21756261	.012	.1028219	1.3498287
	status update	.54063309*	.18537982	.043	.0093610	1.0719052
	finding friends	.81209006*	.26257667	.026	.0595828	1.5645974
	photo galleries	.48278489	.17123854	.057	-.0079604	.9735302
	others	.82628696*	.19112032	.000	.2785634	1.3740106
status update	playing game	.18569223	.27107981	.984	-.5911838	.9625683
	chatting with friends	-.54063309*	.18537982	.043	-1.0719052	-.0093610
	finding friends	.27145698	.30837847	.951	-.6123118	1.1552257
	photo galleries	-.05784819	.23552795	1.000	-.7328377	.6171413
	others	.28565387	.25035525	.864	-.4318286	1.0031363
finding friends	playing game	-.08576474	.32873255	1.000	-1.0278654	.8563359
	chatting with friends	-.81209006*	.26257667	.026	-1.5645974	-.0595828
	status update	-.27145698	.30837847	.951	-1.1552257	.6123118
	photo galleries	-.32930517	.30009039	.882	-1.1893215	.5307111
	others	.01419689	.31186308	1.000	-.8795582	.9079520
photo galleries	playing game	.24354043	.26161274	.938	-.5062044	.9932852
	chatting with friends	-.48278489	.17123854	.057	-.9735302	.0079604
	status update	.05784819	.23552795	1.000	-.6171413	.7328377
	finding friends	.32930517	.30009039	.882	-.5307111	1.1893215
	others	.34350207	.24007231	.708	-.3445110	1.0315151
others	playing game	-.09996164	.27503739	.999	-.8881796	.6882563
	chatting with friends	-.82628696*	.19112032	.000	-1.3740106	-.2785634

status update	-.28565387	.25035525	.864	-1.0031363	.4318286
finding friends	-.01419689	.31186308	1.000	-.9079520	.8795582
photo galleries	-.34350207	.24007231	.708	-1.0315151	.3445110

*. The mean difference is significant at the 0.05 level.

Table E.2: Post-hoc test for dependent variable Social Enhancement

Multiple Comparisons

(I) Activities	(J) Activities	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
playing game	chatting with friends	-.16973051	.22587749	.975	-.8170632	.4776022
	status update	-.29544641	.28144003	.901	-1.1020134	.5111206
	finding friends	-.92016416	.34129617	.079	-1.8982703	.0579420
	photo galleries	-.16925554	.27161114	.989	-.9476544	.6091433
	others	.18125981	.28554886	.988	-.6370825	.9996021
chatting with friends	playing game	.16973051	.22587749	.975	-.4776022	.8170632
	status update	-.12571590	.19246473	.987	-.6772924	.4258606
	finding friends	-.75043365	.27261191	.068	-1.5317005	.0308332
	photo galleries	.00047497	.17778300	1.000	-.5090258	.5099757
	others	.35099032	.19842463	.487	-.2176664	.9196470
status update	playing game	.29544641	.28144003	.901	-.5111206	1.1020134
	chatting with friends	.12571590	.19246473	.987	-.4258606	.6772924
	finding friends	-.62471775	.32016418	.373	-1.5422627	.2928272
	photo galleries	.12619087	.24452943	.996	-.5745956	.8269774
	others	.47670622	.25992342	.445	-.2681972	1.2216097
finding friends	playing game	.92016416	.34129617	.079	-.0579420	1.8982703
	chatting with friends	.75043365	.27261191	.068	-.0308332	1.5317005
	status update	.62471775	.32016418	.373	-.2928272	1.5422627
	photo galleries	.75090862	.31155935	.156	-.1419761	1.6437933
	others	1.10142397*	.32378197	.010	.1735110	2.0293369
photo galleries	playing game	.16925554	.27161114	.989	-.6091433	.9476544
	chatting with friends	-.00047497	.17778300	1.000	-.5099757	.5090258
	status update	-.12619087	.24452943	.996	-.8269774	.5745956
	finding friends	-.75090862	.31155935	.156	-1.6437933	.1419761
	others	.35051535	.24924748	.723	-.3637924	1.0648231

	playing game	-.18125981	.28554886	.988	-.9996021	.6370825
	chatting with friends	-.35099032	.19842463	.487	-.9196470	.2176664
others	status update	-.47670622	.25992342	.445	-1.2216097	.2681972
	finding friends	-1.10142397[*]	.32378197	.010	-2.0293369	-.1735110
	photo galleries	-.35051535	.24924748	.723	-1.0648231	.3637924

*. The mean difference is significant at the 0.05 level.

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VITA

Sonam Choden graduated in Bachelors of Computer Application (BCA) from Bengaluru University, India, in the year 2008. Currently she is working as an Asst. ICT Officer in Royal Institute of Health Sciences (RIHS), Thimphu, Bhutan. She joined RIHS in the year 2009. She pursued Master in Computer Science and Information Technology from Chulalongkorn University, Bangkok, Thailand, in the year 2014