

To Study the Internet Access and Usage Behavior in the Kingdom of Bhutan

Kencho Tshering

Abstract—To find the Internet usage behavior of the people of Bhutan and Internet access gap among the Bhutanese people, the study conducted one to one survey among 466 individuals in four regions of Bhutan, namely, Trashigang in the east, Bumthang in the central, Thimphu in the west and Phuentsholing in the south. The interviews were conducted among Internet service providers, business owners, government ministries/departments and public and corporate organizations.

The results indicated that the number of male and female representation is almost equal and there are 90 Internet nonusers and 376 Internet users. The analysis on Internet nonusers shows that there are more male Internet nonusers than female and people are not using Internet because the Internet charges are too high and they don't have computer. Therefore, most of the Internet nonusers are willing to use the Internet service if the service charges are reduced or if they can buy computer on installment bases or at cheaper price.

The results also indicated that People use Internet mostly from home and office. The mobile Internet and broadband services are the most frequently used Internet services in Bhutan. The women in Bhutan use Internet more frequently than men but once they are logged on to Internet both male and female tend to spend equal number of time on Internet. However, women are spending slightly more than men on Internet services in terms of money. When it comes to actual Internet usage, majority of the respondents uses Internet for information, education, chatting and emails. However, the results also indicate that there are Bhutanese people using Internet for pornography and other related movies.

The results also indicate that Social influence has a positive impact on Internet usage among women but men's use of Internet is rather voluntary and work driven. Facilitating conditions have positive impact on Internet use among the Bhutanese people. Age has significant influence on Internet usage; the young adults (26-35 years old) and middle aged Bhutanese (46-55 years old) use Internet more than older people (above 55 years old) and younger people or youths between 16-25 years old. Although the income has very little significant on use of Internet, the profession has great significant on the use of Internet. The corporate & public employees, and civil servants are more frequent Internet users than people with other profession.

Keywords— Internet, Internet usage, Bhutanese (people of Bhutan), behavior.

I. INTRODUCTION

THE Internet is a global system of interconnected computer networks that serves billions of users worldwide. It is a

network of networks that consists of millions of private, public, academic, business, and government networks, of local to global scope, that are linked by a broad array of electronic, wireless and optical networking technologies (Potosky 2007). There was tremendous growth in Internet usage globally. Within a decade, from 2000 to 2011 the number of Internet users globally rose from 360 million to 2.267 billion and by the end of June 2012 there were over 2.4 billion Internet users in the world (Internet world Stats, 2012).

In terms of Internet usage by region, as of June 2012, 44.80% of the world's Internet users are based in Asia, 21.5% in Europe, 11.4% in North America, 10.40% in Latin America and the Caribbean taken together, 7.0% in Africa, 3.7% in the Middle East and 1.0 % in Australia/Oceania (Internet World Stats).

The Internet service reached Bhutan very late; it was introduced only on 2nd June 1999. In the year 2000 there were only about 3000 computers in the entire country. DrukNet, an IT division under the umbrella of government owned corporation called Bhutan Telecom Limited was the only Internet Service Provider at that time. People of Bhutan were offered only simple dial-up services with the maximum theoretical speed of 56 Kbps. According to International Telecommunications Union, by the end of 2006 there were 20,000 Internet users in Bhutan, which forms 3.1% of the country's population. The World Bank report 2011 shows that by December 2010, Bhutan's fixed Internet users grew from 0.1 users per 100 people in the year 2000 to 1.0 user per 100 people in 2010. The personal computer per 100 people grew from 0.9 to 2.0 from 2000 to 2010. In terms of Internet usage, the Internet users per 100 people grew from 0.4 users per 100 people in 2000 to 7.2 users in 2010 (World Bank).

The Internet provides great ranges of services and information. The Internet services like chat, e-mails, social networking, search engines, etc., are most commonly used and it provides users with wide range of benefits. In their study, Abraham Akman and Alok Mishra found that the key to using Internet is not technology but the individuals themselves therefore the people's perceptions on using Internet are shaped by the existing value system of the society (Abraham akman, Alok Mishra 2009). It is important to study the Internet access gap and their underlying causes because access to the Internet can improve opportunities to education, employment, civil engagement, government participation, and way to global information (Ono & Zavodny, 2007). The difference in various aspects of Internet usage across

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demographic groups have become an interesting research area because demographic attributes like gender, age, income, and education were found to affect Internet usage (Yang & Tung 2007). Many studies provide evidence of difference in Internet usage among different gender. Hills and Argyle (2003) found the male dominance and female resistance in using Internet.

In an American study in 2005, the percentage of men using the Internet was slightly ahead of the percentage of women. Men logged on more often, spent more time online, and were more likely to be broadband users, whereas women tended to make more use of opportunities to communicate (such as email). Men and women were equally likely to use the Internet for shopping and banking. More recent studies indicate that in 2008, women significantly outnumbered men on most social networking sites, such as Facebook and Myspace, although the ratios varied with age. However, in Bhutan there were no studies or researches conducted on the Internet usage differences among different demographic like gender, age, income, and education. Based on this rationale, this study was undertaken to assess the extent of differences in Internet usage and their underlying causes because the findings can help the government of Bhutan to develop Internet service policy and also help Internet Service Providers to develop marketing plans.

In the year 1999 when the Internet was first introduced, Bhutan had only one Internet Service Operator (DrukNet). DrukNet started off with simple dial up service (56Kbps being the maximum theoretical speed). The international links then, were via satellite to Honolulu in Hawaii, KDDI-Japan and Madley in London (totaling to 12Mbps download and 8Mbps upload). Now Bhutan have three fixed Internet service providers and two mobile Internet service providers.

A. Research Objective

- A. To find the Internet usage behavior with regard to gender, age, education, profession and income level of the people of Bhutan.
- B. To study and analysis the Internet nonusers and find the reason/s for not using the Internet.
- C. And also to study the Internet access and find whether there is access gap or not.

II. LITERATURE

2.1 Brief information of Bhutan

Bhutan is nestled in the arms of eastern Himalayas; the peaceful and mountainous country lies undisturbed by modern qualms that have infected so many nations around the world. Many describe Bhutan as the last Shangri-La on earth. Ruled by the benevolent blessing of the wise hereditary kings for more than a century now, the kingdom of Bhutan enjoys unprecedented peace and harmony. Sandwiched between the two giant and populous nations of China on the North and India on East, West and South or researches conducted on the Internet usage differences among different demographic like gender, age, income, and education. Based on this rationale, this study was undertaken to assess the extent of differences in

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TABLE I
FACTS ABOUT BHUTAN

Population	708,265
Density	18.0/Square KM
Area	38,394 square KM
Religion	Vajrayana Buddhism
Capital City	Thimphu
Official Language	Dzongkha
Demonym	Bhutanese
Government	Constitutional Monarchy
King	Jigme Khesar Namgyel Wangchuk
Prime Minister	Jigme Y. Thinley
GDP (2010)	USD 3.875 billion
Per Capita (2010)	USD 5,429
Currency	Ngultrum (BTN)
Time Zone	BTT (UTC+6)
ISO 3166 code	BT
Internet TLD	.bt
Calling code	975

Source: National Statistical Bureau of Bhutan, online, 2012

The Ngultrum (Nu.) Bhutanese currency was used in this study based on the Bhutan National Bank's foreign currency exchange rate "as of. June 2012" 1 USD = Nu.50.27 (Ngultrum).

2.2 Relevant Literature

A. Internet Access

The operational definition of Internet access vary from study to study, most of the studies defined Internet access by making a distinction between people how use web & other Internet services and people who do not. Some studies used "Internet access" to refer to whether a person have the means to connect to the Internet or not (Paul DiMaggio, Eszter Hargittai, Coral Celeste, and Steven Shafer, 2006). But in this study the "Internet access" is referred to whether a person has Internet connection or not and the "Digital Divide" is viewed as a gap between people with and without Internet access. Social scientists and policy makers began to worry about inequality in Internet access as early as 1995 (Anderson 1995). A research program (NTIA) in America had found out that the Internet "Digital Divide" was created by many factors such as gender, age, education, income and disability status. Further the NTIA's report identified other factors such as location and country's fixed telephone line capacity.

B. Gender and Internet

Many studies and literature shows a complete picture of

relationship between gender and Internet usage and some studies reports that there are no significant link between gender and Internet access and usage pattern. However, there are numerous debates on the link between gender and Internet usage. Many researchers are aware of gender inequality in Internet usage and studies found that gender inequalities are not only reflected in Internet technology but also in numerous aspects such as in education politics, and workforce. In their studies, Ibrahim Akman and Alok Mishra (2009) found the difference in Internet usage among male and female. Hills and Argyle (2003) found that male use more Internet than female and the report also shows the evidence of male dominance and female resistance on the Internet usage. The Internet usage study in Finland by many researchers have found that boys more frequently play games, use computers for writing and emailing and surf the Internet than girls. The study on Internet usage among college students in North Carolina by Ono & Zovodny (2003) found some gender differences in attitudes toward technology and intensity of Internet use. There are gender differences and inequality in both Internet access and intensity of use. Bimber (2000) found that the gender gap in the Internet is larger where more intensive Web use is concerned. Women are substantially less likely to be frequent users, equally likely to be infrequent users, and more likely to be intermediate users. In short, females are less intensive Internet users than males (Bimber, 2000).

C. Age and Internet

According to the world Internet stats report (2010), age is one of the socio-demographics that have an effect on the Internet usage. Teens and young adults are more likely to be online than older generations. The PewInternet Project has reported that over 80 percent of American people between 12 and 34 years old go online. After that age, the percentages steadily decrease. Only half of the Americans in the sixties go online and merely 26 percent of people between 70 and 75 have accessed the web (Fox & Madden, 2005). Regarding specific uses of the internet, younger users are more likely to engage in communicative and interactive activities such as instant messaging, and blogging than older generations (Bonfadelli, 2002; Fox & Madden, 2005). People between 29 and 69 years old tend to engage in activities that require more capital such as online banking and make travel reservations (Fox & Madden, 2005). Chen (2007) found that among college students in China, 18-21 years old were more likely to use social network sites and video-sharing applications than 22- plus-years old. In Europe older people use Internet less than younger people (Hills & Argyle, 2003). According to Fang and Yen (2006) older people are less proficient in Internet use than younger people and younger people find it easier to navigate the net. However, according to the International Telecommunications Union (2011) the Internet usage in Japan among older people (age group of 65 to 79) has increased by 32% from 2003 to 2009. Children and the youth are generally enthusiastic adopters of the Internet for communication, entertainment and education.

D. Income, education and Internet

The International Telecommunications Union report states that high income and better-educated group of people have more access to computer and Internet than low income and less educated people. According to Eurostat report 2011, the percentage of the population in Europe with high formal education using the Internet was more than twice as much as the share for the population with a low level of education.

According to the reported generated by About Asia Pacific Internet Research Alliance (APIRA, 2009), the largest group of Internet users in Korea are the people with “Bachelor/college” level education, which accounts for 41.1%, followed by “Master or above”, which accounts for 29.6%. The largest group of Internet users in Chinese Mainland, Hong Kong and Macau is “High School/Middle School”, which accounts for 67.4%, 53.9% and 52.5% respectively, followed by “Bachelor/college”, which accounts for 26.1%, 33.4% and 31.3% respectively. In Taiwan, the largest group of Internet users is the people with “Bachelor/college” level education, which accounts for 50.8%, followed by “High School/Middle School”, which accounts for 39.8%. (APIRA report 2009), statistics shows that, people with a bachelor degree or a master degree/above are two groups with the highest adoption rate of the Internet. The adoption rate of the Internet by those with a master degree is over 97% in Korea and Macau.

Compared to other regions, the Internet adoption rate of those with elementary education or below in Taiwan is relatively low since it is only 9.9%. In Korea, people with high school/ middle school qualifications exhibit the lowest adoption rate than other qualifications. The percentage of which is 56.9%. In Korea, Hong Kong and Macau, people in the highest household income group have the highest adoption rate of the Internet, the number of which for the three regions is 90.8%, 93.6% and 91.5% respectively (APIRA report, 2009).

III. METHODOLOGY

The study used both quantitative and qualitative methodology like one to one survey among four hundred and sixty six individuals in Bhutan and in-depth interviews and content analysis.

3.1 Research model and hypotheses

The study analyzed five research models, namely Theory of Reasoned Action (TRA), Technology Acceptance Model (TAM), Theory of Planned Behavior (TPB), Decomposed Theory of Planned Behavior (DTPB) and Unified Theory of Acceptance and Use of Technology (UTAUT). After analysis and comparison, this study used the Unified Theory of Acceptance and Use of Technology (UTAUT) model as its research model. The UTAUT model is used instead of other models because this model integrates the four main core determinants: Performance Expectancy (PE), Effort Expectancy (EE), Social Influence (SI), Facilitating Conditions (FC), and four control variables, which are

“Gender”, “Age”, “Experience”, and “Voluntariness of Use”. Moreover, previous studies and researchers found that the explanatory power of UTAUT model is up to 70% with regard to technology using behavior, it is more effective than any of the models that are known before. Accordingly the constructs and variables of the model are hypothesized.

In order to best fit the UTAUT model for this study a few changes in terms of hypothesis are made. The four constructs (PE, EE, SI, & FC) and four variables (gender, age, voluntariness of use, and experience) are hypothesized to have significant influence on Internet usage behavior in Bhutan. The factors or variables like income, profession and education are taken as experience.

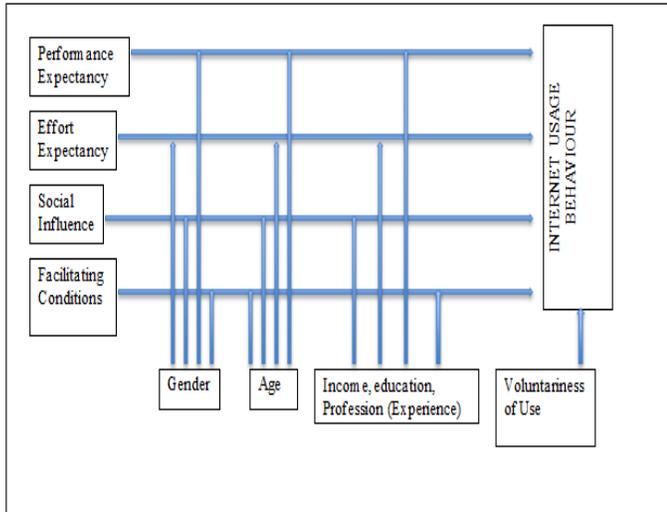


Fig. 1 Unified Theory of Acceptance and Use of Technology (UTAUT)

The four constructs of UTAUT (performance expectancy, effort expectancy, social influence, and facilitating conditions) and four variables.

Gender, age, experience, and voluntariness) are hypothesized to have a significant role as direct determinants of Internet usage behavior.

H1: Performance expectancy will have a significant positive influence on behavioral intention to use Internet service.

H2: Effort expectancy will have a significant positive influence on behavioral intention to use Internet service.

H3: Social influence will have a significant positive influence on behavioral intention to use Internet service.

H4: Facilitating conditions will have a significant positive influence on Internet service usage.

H5: Gender will have a significant positive influence on Internet service usage.

H6: Age will have a significant positive influence on Internet service usage.

H7: Experience (income, education, & profession) will have a significant positive influence on Internet service usage.

H8: Voluntariness of use will have a significant positive influence on Internet service usage.

IV. FINDINGS

The research findings are mostly descriptive which are systematically illustrated in charts and graphs. Only a simple test of reliability and coefficient was conducted for the questionnaires based on UTAUT model.

4.1 Method of Analysis

Since most of the data are categorical, the study used non-parametric methods and techniques to analyzed the data. However, a regression analysis has been performed for the UTAUT based data. Accordingly the summery, means, coefficient, correlation, and reliability test results are presented.

4.2 Profile of Respondents

TABLE II
PROFILE OF RESPONDENTS

ender	Frequency	Percentage	Profession	Frequency	Percentage
Male	244	52.36%	Civil Servant	116	25.00%
Female	222	47.64%	Corp./Public	172	37.07%
Total	466	100%	Private emp.	50	10.78%
Age	Frequency	Percentage	Business Owner	38	8.19%
16-25	105	22.58%	Student	48	10.34%
26-35	167	35.91%	Others	40	8.62%
36-45	86	18.49%	Total	464	100%
46-55	42	9.03%	Income	Frequency	Percentage
Above 55	65	13.98%	No income	47	10.24%
Total	465	100%	Less than Nu. 10,000	62	13.51%
Education	Frequency	Percentage	10,001-15,000	103	22.44%
None	13	2.82%	15,001-25,000	142	30.94%
Elementary	37	8.03%	25,001-50,000	79	17.21%
Secondary	75	16.27%	Above 50,000	26	5.66%
Higher Second.	151	32.75%	Total	459	100%
University	167	36.23%	Internet user/nonuser	Frequency	Percentage
Others	18	3.90%	Internet Users	376	80.69%
Total	461	100%	Internet nonusers	90	19.31%
			Total	466	100%

4.3 Descriptive Results

The male and female representation in this study is almost

equal with male 52.36% and 47.64% female. Out of 466 samples, 376 are already using Internet and 90 respondents are not using Internet.

The figure no.2 shows that 31% of the 90 respondents who are not using Internet said that they don't use Internet because they don't have computer and 25% don't use Internet because the Internet service charges are too high. Therefore, the main reasons for Bhutanese people not using Internet are the lack of computer and high Internet service charges. Since 17% responded that they don't use Internet because they don't know how to use that means the knowledge also have influence on decision to use the Internet. With further analysis, the results also show that 78% of the total Internet nonuser declared that they would use Internet in the future.

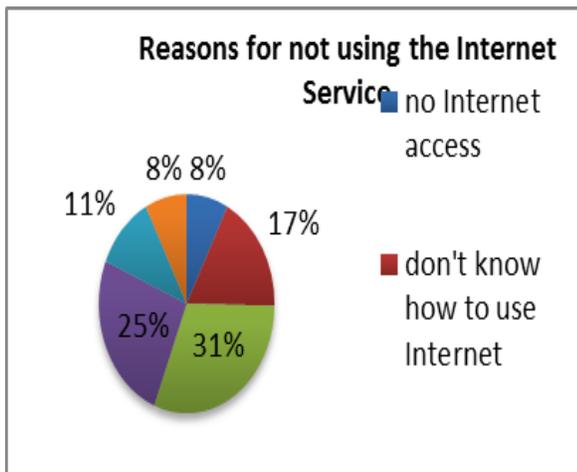


Fig. 2 Reasons for not using Internet

4.3.1 Profile of Internet Service Users:

As mentioned above, the study surveyed four hundred and sixty six (466) people, out of that 376 are already using Internet Services. Out of 376 Internet Users, one hundred and ninety (190) respondents are female and 186 males. It is important to note that age was found to have significant impact on Bhutanese people's Internet usage. Younger people tend to use Internet more than older people, 26% of the respondents aged between 16 and 25, 36% of the respondents aged between 26 and 35, and 18% of the respondents aged between 36 and 45 are using Internet more than people aged above 46. Most of the respondents are either corporate/public employees or civil servants. The income has no significant impact on the use of Internet service but education does have significant influence on the use of Internet in Bhutan. 36% of the respondents have university degree and another 33% got higher secondary school level education, is statement is further supported by the figure no. 2 showing that 17% of the respondents don't know how to use and 11% don't know English.

4.3.2 Places Where Internet is most Frequently Used

The Internet is most frequently used in the offices/schools representing 36.18% of the respondents and 27% use Internet from home and 25% form their mobile phones. Only 6% use

form Internet Cafes and 5% from friends place.

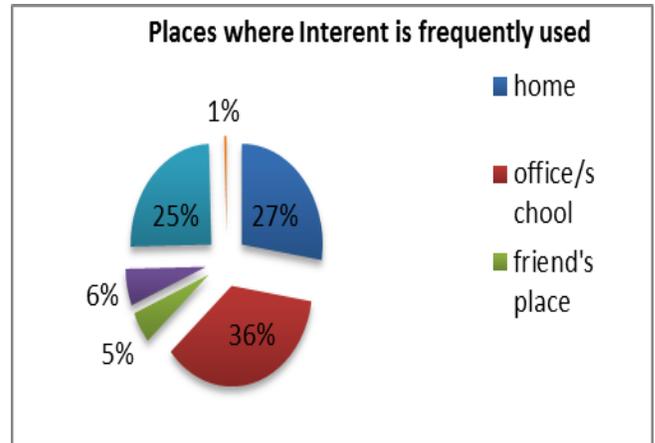


Fig. 3 Places where Internet is used

4.3.3 Frequency of Internet Usage (per month)

Majority of the respondents who are using Internet uses it every day, 46% of the respondents declared they use everyday and 24% said they use several times a day. However, 4% of the respondents are using only once a month or maybe less than once a month and 19% are using Internet several times a week. With the minor difference (female 50.13% and male 49.87%) we can say that females use Internet slightly more frequently than males in Bhutan.

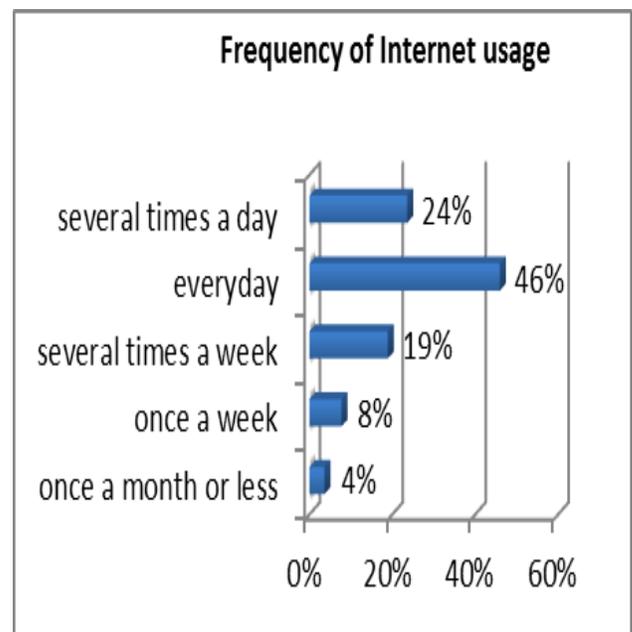


Fig. 4 Frequency of Internet usage

4.3.4 Internet Usage

The study asked 376 respondents who are using Internet service, what is their primary use of Internet or what are the primary uses of Internet. The results shown below presents that majority of the people use Internet to seek information (17.17%), use search engines (14.12%) and email services (15.67%). The second most used Internet services are chat sites and social medias (11.13% and 11.46%). However,

7.64% of the respondents declared they Internet for Pornography and other related movies for entertainment. The Internet services like online shopping and online games are less used services. But the surprising finding is that the result

shows 0.28% responded saying they use Internet to waste time.

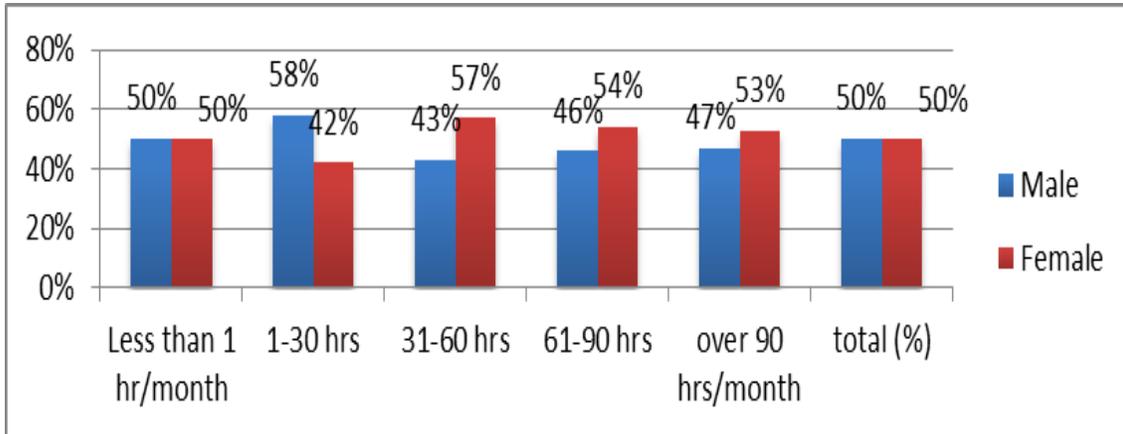


Fig. 5 Gender representation in frequency of Internet use

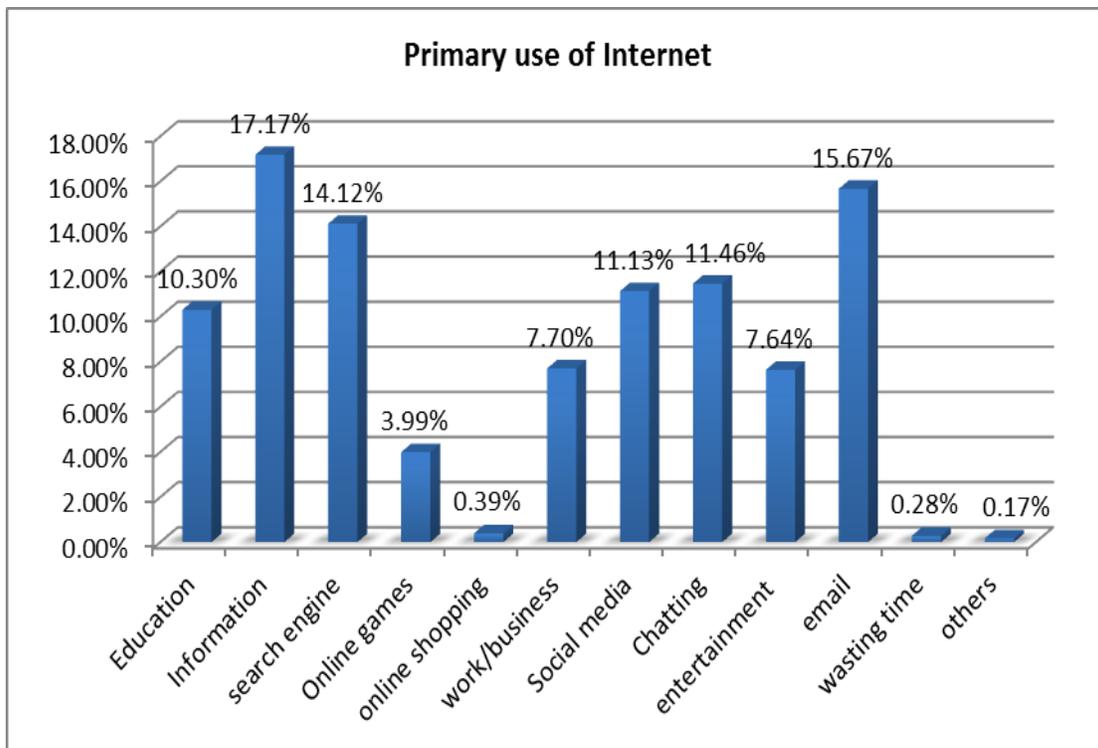


Fig. 6 Primary use of Internet

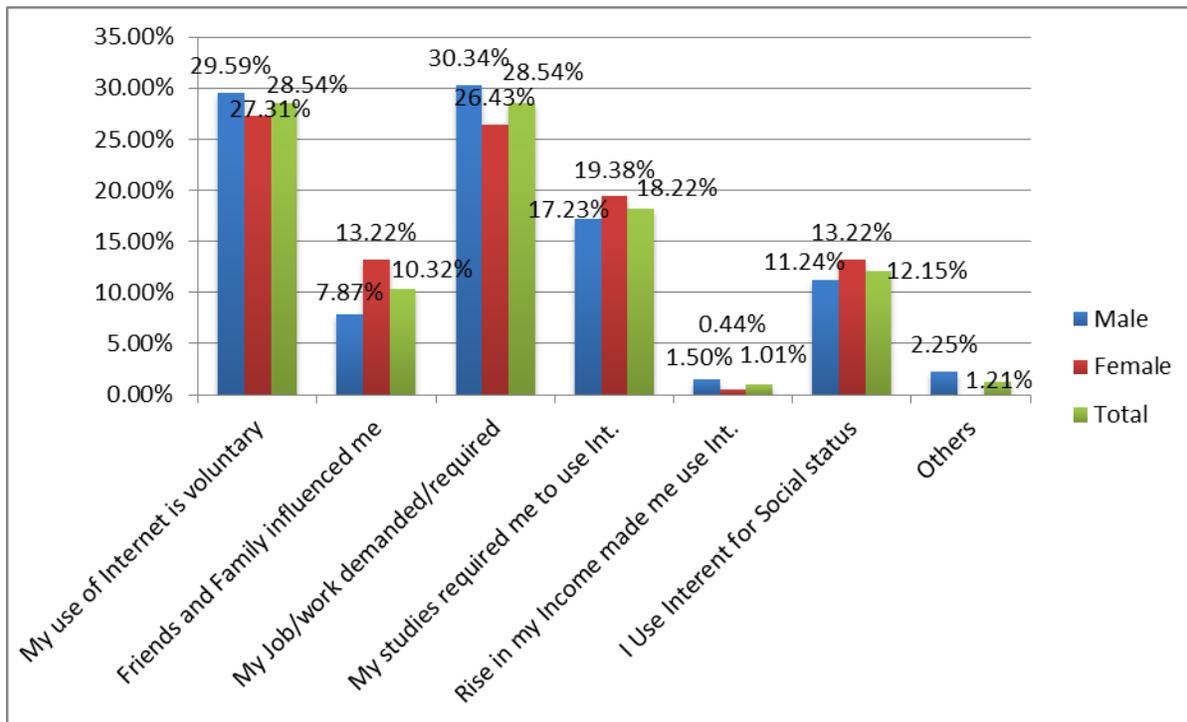


Fig. 7 Factors that influenced the use of Internet

4.3.5 Factors that Influenced the Use of Internet Services

Majority of the respondents’ use of Internet was either voluntary or their job/work required Internet. Out of 376 respondents, 28.54% said they their use of Internet was voluntary and another 28.54% said the Internet was required in their work. 18.22% of the respondents said they use Internet for their studies (education), 12.15% said that they use Internet for social status and 10.32% of the respondents’ use of Internet was influenced by their friends and families. Only 1% of the respondent declared that the rise in their income level made them use the Internet service.

However, there is slight difference between male and female and the factors that influenced them to use the Internet Service. The figure no.7 shows that male’s use of Internet is more voluntary and . Performance Expectancy work/job related and female’s use of Internet is more influenced by friends and family and for social status.

4.3.6 Descriptive Analysis of UTAUT based questionnaires:

A descriptive statistical analysis of the UTAUT based questionnaires are analyzed and described in this section. The table III summarizes the frequencies & corresponding percentage and mean & standard deviation for the 90 respondents who do not use Internet. This analysis is to find the Bhutanese people’s behavior intention to use the Internet service in future. It can be seen that over 48% of the respondents plan to use the Internet service within 12 months from the date of survey.

However, figure no.5 shows that male and females tend to spend equal number of hours on Internet, but once logged into Internet, women spends more time using Internet than men. Therefore, when it comes to spending more than 90 hours per month, 61 to 90 hours per month and 31-60 hours per month on using Internet, the female appears to be more dominant. Whereas, when it comes to lesser number of hours spent on using Internet per month, the male respondents appear to more dominate

Table IV summarizes the Internet usage behavior of Bhutan Internet users with regard to performance expectancy. The result shows that majority of the respondents declared that the Internet is either useful in their work/life or they use it because it makes them better informed person (50.37% and 45.09% respectively). However, only 5 % of the respondents said that Internet have increased their work productivity.

TABLE III
BEHAVIOR INTENTION

Questionnaire Item	1 Strongly disagree	2 Disagree	3 Neutral	4 Agree	5 Strongly Agree	Mean
I plan to use Internet next year	8 (9.09%)	6 (6.82%)	12 (13.64%)	19 (21.59%)	43 (48.86%)	3.94
I predict I would use Internet next year	8 (9.09%)	10 (11.36%)	20 (22.73%)	25 (28.41%)	25 (28.41%)	3.56
I intend to use Internet next year	62 (70.45%)	15 (17.05%)	6 (6.82%)	0 (0%)	5 (5.68%)	1.53

TABLE IV
PERFORMANCE EXPECTANCY

Questionnaire Item	1 Strongly disagree	2 Disagree	3 Neutral	4 Agree	5 Strongly Agree	Mean
I would find Internet useful in my life and work	12 (2.96%)	6 (1.48%)	37 (9.14%)	146 (36.05%)	204 (50.37%)	4.29
Using Internet enables me to be better informed citizen	9 (2.27%)	5 (1.26%)	50 (12.59%)	154 (38.79%)	179 (45.09%)	4.23
Using Internet increases my work productivity	121 (30.17%)	111 (27.68%)	105 (26.18%)	43 (10.72%)	21 (5.24%)	2.33

Table V shows the Internet usage behavior of Bhutanese people with respect to effort expectancy. As shown, the majority of the Bhutanese Internet users believes that using Internet service is easy or would be easy. Very few respondents think that it would be difficult for them to use the Internet service.

TABLE V
EFFORT EXPECTANCY

Questionnaire Item	1 Strongly disagree	2 Disagree	3 Neutral	4 Agree	5 Strongly Agree	Mean
Learning to use Internet is easy for me	13 (3.30%)	18 (4.57%)	40 (10.15%)	210 (53.30%)	113 (28.68%)	3.99
I would find Internet easy to use	12 (2.67%)	22 (4.90%)	174 (38.75%)	170 (37.86%)	71 (15.81%)	3.59
Using Internet would be very difficult for me	167 (37.03%)	188 (41.69%)	54 (11.97%)	25 (5.54%)	17 (3.77%)	1.97

Social Influence

The descriptive analysis in Table VI shows that the use of Internet in Bhutan is rather job or work driven/oriented and less influenced by other people.

TABLE VI
SOCIAL INFLUENCE

Questionnaire Item	1 Strongly disagree	2 Disagree	3 Neutral	4 Agree	5 Strongly Agree	Mean
People who influence my behavior think I should use Internet	47 (10.47%)	68 (15.14%)	232 (51.67%)	78 (17.37%)	24 (5.35%)	2.92
Friends and Family think I should use Internet	24 (5.32%)	32 (7.10%)	251 (55.65%)	100 (22.17%)	44 (9.76%)	3.24
My Organization demands me to use Internet	24 (5.37%)	48 (10.74%)	169 (37.81%)	127 (28.41%)	79 (17.67%)	3.42

Facilitating Conditions Table VII provides great information on how facilitating conditions affect the Internet usage. As can be seen, the facilitating conditions like

computer, Internet access, knowledge and help from friends and families have positive affect on use of Internet service in Bhutan.

TABLE VII
FACILITATING CONDITIONS

Questionnaire Item	1 Strongly disagree	2 Disagree	3 Neutral	4 Agree	5 Strongly Agree	Mean
I have computer and Internet access to use Internet services	50 (11.21%)	39 (8.74%)	53 (11.88%)	168 (37.67%)	136 (30.49%)	3.67
I have the knowledge to use Internet	28 (6.33%)	17 (3.85%)	54 (12.22%)	213 (48.19%)	130 (29.41%)	3.90
I have friends, families, and colleagues available to assist me	14 (3.13%)	38 (8.50%)	75 (16.78%)	192 (42.95%)	128 (28.64%)	3.85

Voluntariness of Use

Table VIII provides interesting information on voluntariness of use of Internet. It is clear that Majority of the Bhutanese people use Internet based on other people's expectation rather than their own interest.

TABLE VIII
VOLUNTARINESS OF USE

Questionnaire Item	1 Strongly disagree	2 Disagree	3 Neutral	4 Agree	5 Strongly Agree	Mean
My superiors expect me to use Internet	31 (6.98%)	52 (11.71%)	135 (30.41%)	161 (36.26%)	65 (14.64%)	3.40
My parents/ children expects me to use Internet	24 (5.37%)	30 (6.71%)	235 (52.57%)	105 (23.49%)	53 (11.86%)	3.30
I was/am self interested in using Internet	167 (37.36%)	66 (14.77%)	191 (42.73%)	14 (3.13%)	9 (2.01%)	2.18

4.3.6 Internet Access

The study on media in Bhutan by Department of Information and Technology of Bhutan found that in terms of physical Internet connection, Bhutan has nation wide Internet connection. However, this study found that there is Internet access gap even in terms of physical connection. This statement is supported by figure no.2 showing 8% of the respondents having no Internet access. Even the survey was done based on location in four districts in Bhutan each representing east, west, center, and south, the survey questionnaires were not coded properly and during the data entry all the papers got mixed up, therefore, this study is unable to say which location has no Internet access in Bhutan.

There is Internet usage gap between people of different age group and people with different education level. Younger people tend to use Internet more than older people, 26% of the respondents aged between 16 and 25, 36% of the respondents

aged between 56 and 35, and 18% of the respondents aged between 36 and 45 are using Internet more than people The study shows no Internet access or usage gap between Bhutanese Internet users of different income level or income has no significant impact on the use of Internet service but education does have significant influence on the use of Internet in Bhutan. People with higher education level tend to use Internet more, 36% of the respondents have university degree and another 33% got higher secondary school level education.

V. ESTIMATED TEST RESULTS

The Stata outputs analysis of variance (anova) results along with the regression results is presented below. The dependent variable is the Internet usage (hrs/month), and the usage of hours is grouped into five categories each with 30 hrs. Therefore, the table IX shows that for each Ngultrum increase in the income the Internet usage increases by 4 hours (.121 x 30 hrs.) and it is statistically significant. You can see that even the standard error is small showing less variation.

In terms of P value, it is significant at 95% level if the P value is less than 0.05 and if it is less than 0.01 it is significant at 99% level. Therefore, the results show that income, age, profession, and voluntariness of use statistically significant because its p value is smaller than 0.05. But education, performance expectancy, effort expectancy, social influence and facilitating conditions are not significant.

TABLE IX
COEFFICIENT, STANDARD ERROR, AND P VALUE

Internet Usage Behavior	Coefficient	Std. Err.	t	P value	[95% conf.	Interval]
Income	.1214522	(.0507989)	2.39	0.017	.0215513	.221353
Age	.2167781	(.0579434)	3.74	0.000	.102827	.3307292
Education	-.0074028	(.072099)	-0.10	0.918	-.1491922	.1343866
Profession	.0880243	(.0462199)	1.90	0.058	-.0028715	.1789202
Gender	.17016	(.1352435)	1.26	0.209	-.0958091	.4361291
PE	.0443973	(.0944931)	0.47	0.639	-.1414324	.2302269
EE	.0472177	(.1261052)	0.37	0.708	-.20078	.2952155
SI	-.1083261	(.0954564)	-1.13	0.257	-.2960501	.0793979
FC	.1487356	(.0889098)	1.67	0.095	-.0261139	.3235851
VU	.2870866	(.1114743)	2.58	0.010	.067862	.5063112
_Cons	.6645122	(.5669852)	1.17	0.242	-.4505174	1.779542

Table X provides a summary of a correlation analysis to test the relationship among the constructs of UTAUT model. A significant relationship is found between all the constructs at (.05) level of significance. The results show that there is a significant relationship between Internet usage and profession, between income and effort expectancy, and between income and social influence.

TABLE X
CORRELATION ANALYSIS

	Int. use	INC	AGE	EDU	PROF	GEN	PE	EE	SI	FC	VU
Int. use	1.0000										
Income	0.1567	1.0000									
Age	0.2368	0.1718	1.0000								
Education	-0.0338	0.1647	-0.0996	1.0000							
Prof.	0.0397	0.2413	-0.1429	-0.2794	1.0000						
Gender	0.0905	-0.0038	0.0023	-0.1827	0.1757	1.0000					
PE	0.0811	-0.0109	-0.0535	0.1225	-0.0919	0.0448	1.0000				
EE	0.0870	0.0151	-0.0353	0.1613	-0.0876	-0.0132	0.4913	1.0000			
SI	0.0822	0.0213	0.0003	0.0376	0.0049	0.0618	0.3738	0.3828	1.0000		
FC	0.2218	0.1260	0.1042	0.0262	0.0034	0.0714	0.4547	0.4008	0.3997	1.0000	
VU	0.2270	0.0768	0.1642	0.0216	-0.0831	0.0207	0.2329	0.3081	0.5108	0.4945	1.0000

VI. CONCLUSION

This paper studied the Internet usage behavior in the Kingdom of Bhutan in four districts representing the entire country. The study conducted one to one survey among four hundred and sixty six males and females in Bhutan and used non-parametric methods to analysis the data. According to the analysis, Female use Internet slightly more than male, but once logged on to Internet both male and female spend equal time using the Internet.

Younger people in Bhutan use Internet services more than older people. Income has no significant impact on the use of Internet, but education and profession does have significant impact on the use of Internet service in Bhutan. Civil servants, Corporate and Public employees are using more Internet then

business owner, students and people with other professions. Education have positive impact on the use of Internet, People with university degree and higher secondary schooling are tend to be using Internet more than people who are lease educated.

There is no difference in the actual of Internet between male and female in Bhutan, but there is difference in the way the Internet is used. Descriptive result showed that Information seeking, using search engines like Google, and email services

are the most used Internet services in Bhutan. Chat sites and social networks are also used very frequently and most interestingly there are people who said they use Internet for pornography (around 8% of the respondents declared that they use Internet for pornography).

This study found that there is Internet access gap even in terms of physical connection. This statement is supported by figure no.2 showing 8% of the respondents having no Internet access. Even the survey was done based on location in four districts in Bhutan each representing east, west, center, and south, the survey questionnaires were not coded properly and during the data entry all the papers got mixed up, therefore, this study is unable to say which location has no Internet access in Bhutan.

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