

Factors Influencing the Internet Using Behavior of Undergraduate Students in Bangkok and Suburban Areas

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ABSTRACT

The objectives of this research were to study the frequency, attitudes, purposes of using the Internet, and the factors influencing the Internet using behavior of undergraduate students in Bangkok and suburban areas. The research hypotheses stated that students with different branches of study, types of institution, regions, and year levels had different attitudes and Internet using behaviors. Moreover, the attitude towards Internet usage had an influence on the Internet using behavior. This research was based on a survey technique. The population of the research was undergraduate students in Bangkok and suburban areas from 3 groups of institutions consisting of public universities; private universities; and Rajamangala Universities of Technology (RMUT) and Rajabhat Universities (RU), formerly teaching colleges funded by the King. The data was gathered from 2 institutions from each group. The research used the multistage sampling technique. It consisted of cluster random sampling, stratified random sampling, and quota sampling.

The research findings were that the average age of students was about 21 years old. The average frequency of using the Internet was 3 or 4 days per week and almost 3 hours each day. The average experience of using the Internet was about 5 years. Most of the sample size used the Internet for entertainment (54.2%). Regarding education, students used the Internet for searching information. For entertainment, the Internet was used as a means for listening to music. For communication, the students used the Internet to send and receive messages via e-mail. There were few circumstances when the Internet was used for business. Most private university students used the Internet for education, entertainment, and communication purposes while RMUT and RU students mostly used the Internet for business. No differences were found in terms of study branches, year levels, and regions. The relationships among attitude, experience of using the Internet, and Internet using behavior concerning education, communication, entertainment, and business were found to be significantly negative at 0.05 level. The regression equation which predicted the frequencies of using the Internet per week is shown below:

$$\text{Freq} = 0.977 - 0.547(\text{Sex}) + 0.214(\text{Education}) + 0.288(\text{Communication}) + 0.154(\text{Business}) + 0.072(\text{Experience})$$

บทคัดย่อ

การวิจัยครั้งนี้มีวัตถุประสงค์เพื่อศึกษาปริมาณ เจตคติ และวัตถุประสงค์ของการใช้อินเทอร์เน็ต รวมถึงปัจจัยที่มีอิทธิพลต่อพฤติกรรมการใช้อินเทอร์เน็ตในด้านต่างๆ ของนักศึกษาระดับอุดมศึกษาในเขตกรุงเทพมหานครและปริมณฑล สมมติฐานของการวิจัย คือ นักศึกษาที่เรียนในกลุ่มสาขาวิชาประเภทของสถาบันการศึกษา ภูมิภาคและชั้นปีที่แตกต่างกันจะมีเจตคติและพฤติกรรมการใช้อินเทอร์เน็ตในด้านต่างๆ ที่แตกต่างกัน รวมทั้ง เจตคติต่อการใช้งานอินเทอร์เน็ตของนักศึกษามีอิทธิพลต่อพฤติกรรมการใช้อินเทอร์เน็ตในด้านต่างๆ

การวิจัยเป็นเชิงสำรวจประชากรที่ใช้ในการวิจัย คือนักศึกษาระดับอุดมศึกษาของสถาบันการศึกษาในเขตกรุงเทพมหานครและปริมณฑล แบ่งเป็น 3 กลุ่ม คือ สถาบันอุดมศึกษาของรัฐ สถาบันอุดมศึกษาของเอกชน สถาบันเทคโนโลยีราชมงคลและราชภัฏ ทำการเก็บข้อมูลกลุ่มละ 2 สถาบัน โดยใช้วิธีการสุ่มตัวอย่างแบบ Multistage ซึ่งแบ่งเป็นการสุ่มแบบเป็นกลุ่ม (Cluster Random Sampling) การสุ่มตัวอย่างแบบแบ่งชั้น (Stratified Random Sampling) และการสุ่มตัวอย่างโดยกำหนดสัดส่วน (Quota Sampling) โดยแจกแบบสอบถามสถาบันละ 100 ชุดจำนวน 6 สถาบัน รวมเป็น 600 ชุด และได้รับกลับคืนมาครบ คิดเป็นร้อยละ 100 ของแบบสอบถามที่แจกทั้งหมด และวิเคราะห์ข้อมูลโดยใช้โปรแกรมสำเร็จรูป SPSS For Windows เวอร์ชัน 13.0 เพื่อคำนวณค่าสถิติเชิงพรรณนา ค่าความถี่ของข้อมูลเบื้องต้น การวิเคราะห์ความแปรปรวนแบบจำแนกทางเดียว ค่าสัมประสิทธิ์สหสัมพันธ์ และวิเคราะห์สมการถดถอยเชิงพหุ

ผลการวิจัยพบว่า อายุเฉลี่ยของนักศึกษาเท่ากับ 20.56 ปีมีการใช้อินเทอร์เน็ตโดยเฉลี่ย 3.75 วัน/สัปดาห์ และในแต่ละวันมีการใช้อินเทอร์เน็ตประมาณ 2.90 ชั่วโมง ประสิทธิภาพในการใช้อินเทอร์เน็ตของแต่ละคน 5.40 ปี โดยวัตถุประสงค์ในการใช้อินเทอร์เน็ต ส่วนใหญ่จะใช้เพื่อความบันเทิง ซึ่งคิดเป็นร้อยละ 54.2 ของกลุ่มตัวอย่างทั้งหมด เมื่อศึกษาแยกตามพฤติกรรมของการใช้งานในแต่ละด้านพบว่า ด้านการศึกษา มีการใช้อินเทอร์เน็ตสำหรับการค้นคว้าหาข้อมูล และรองลงมา คือ Download ข้อมูลเพื่อการเรียน ด้านบันเทิง มีการใช้อินเทอร์เน็ตเพื่อฟังเพลง และรองลงมา คือ เล่นเกมส์ ด้านการติดต่อสื่อสาร มีการใช้อินเทอร์เน็ตเพื่อส่งจดหมายอิเล็กทรอนิกส์ และรองลงมา คือ เล่น MSN ด้านธุรกิจส่วนตัว ไม่ค่อยมีการใช้อินเทอร์เน็ตมากนัก และกลุ่มที่ใช้ด้านนี้มักใช้เพื่อการเลือกชมหรือซื้อสินค้าที่สนใจ ความแตกต่างในการใช้งานอินเทอร์เน็ต พบว่า ด้านการศึกษา เมื่อจำแนกตามปัจจัยต่างๆ พบว่า สถาบันเอกชนมีการใช้งานมากที่สุดในแต่ละกลุ่มสาขาที่มีการใช้งานไม่แตกต่างกัน ในแต่ละชั้นปีนั้น ชั้นปีที่ 3 มีการใช้งานมากที่สุด และนักศึกษาที่มีภูมิลำเนาในภาคตะวันออกเฉียงเหนือมีการใช้งานมากที่สุด ด้านบันเทิง เมื่อจำแนกตามปัจจัยต่างๆ พบว่า สถาบันเอกชนมีการใช้งานมากที่สุด และในแต่ละกลุ่มสาขาวิชาที่มีการใช้งานไม่แตกต่างกัน ในแต่ละชั้นปีมีการใช้งานไม่แตกต่างกัน ในแต่ละภูมิลำเนาที่มีการใช้งานไม่แตกต่างกัน ด้านธุรกิจ เมื่อจำแนกตามปัจจัยต่างๆ พบว่า สถาบันเทคโนโลยีราชมงคลและราชภัฏมีการใช้งานมากที่สุด และกลุ่มสาขาวิชาสังคมศาสตร์และมนุษยศาสตร์มีการใช้งานด้านนี้มากที่สุด และในแต่ละชั้นปีมีการใช้งานไม่แตกต่างกัน เจตคติและประสิทธิภาพการใช้อินเทอร์เน็ตสัมพันธ์กับพฤติกรรมในการใช้อินเทอร์เน็ตทั้ง 4 ด้าน ได้แก่ ด้านการศึกษา ด้านการติดต่อ สื่อสาร ด้านบันเทิง และด้านธุรกิจ โดยที่มีความสัมพันธ์กับพฤติกรรมด้านการศึกษาในทิศทางตรงกันข้าม สมการที่ใช้ในการพยากรณ์จำนวนวันที่ใช้อินเทอร์เน็ตของนักศึกษา คือ จำนวนวัน =

$0.977 - 0.547(\text{เพศ}) + 0.214(\text{ด้านการศึกษา}) + 0.288(\text{ด้านการติดต่อสื่อสาร}) + 0.154(\text{ด้านธุรกิจ}) + 0.072(\text{ประสมการณ์การใช้})$

INTRODUCTION

Nowadays, Information Technology (IT) has a significant role in people's activities. People are both directly and indirectly concerned with IT. The IT rapidly grows at present including computer and Internet technology. The Internet has gained great popularity at homes and schools because many students use internet in order to find information for their homework. In general, the internet has been used in lifestyles such as communication via e-mail, electronic commerce (E-Commerce), and so on. Furthermore, the Internet is a type of multimedia containing a diversity of functions in itself. It can be a television, radio, game, fax, newspaper, journal, etc. However, there are two sides of Internet usage: advantage and disadvantage depending on user behaviors. According to the National Electrics and Computer Technology Center (NECTEC) research in 2005, the findings showed that most internet users in Thailand are 20-29 years old (51.2%) and 60% of internet users obtained a bachelor degree. Therefore, undergraduate students are in the age range of internet users and they are also the potential internet users with a bachelor degree.

Undergraduate students are an important group who can help develop the country after they graduate. Therefore, the researcher would like to study to see whether their Internet using behaviors are positive or negative. The research focused on studying frequency, attitudes, purposes, and factors influencing Internet using behavior of undergraduate students in Bangkok and suburban areas. Moreover, the findings show that the internet using behavior of students in 3 groups of universities in Thailand is different significantly.

Most of the previous researches that have been conducted on internet behaviors focus merely on the demographics and frequency of Internet usage. However, this study has added another three specific variables: a.) branch of study b.) institute type and c.) purpose of Internet usage. Hence, the factors influencing the Internet using behavior of undergraduate students in Bangkok and suburban areas has been designed in order to extend the study and add to the literature of Internet usage.

OBJECTIVES OF THE RESEARCH

1. To study the students' Internet using behavior classified by gender, year level, branch of study, region, institute type, and experience.

2. To study the students' attitude towards Internet usage that has an influence on the Internet using behavior.

3. To study factors influencing the students' Internet using behavior.

4. To find out problems and restrictions of using the Internet of undergraduate students in Bangkok and suburban areas.

FRAMEWORK

1. The researchers studied the frequency and purposes of Internet usage in terms of education, communication, entertainment, and business.

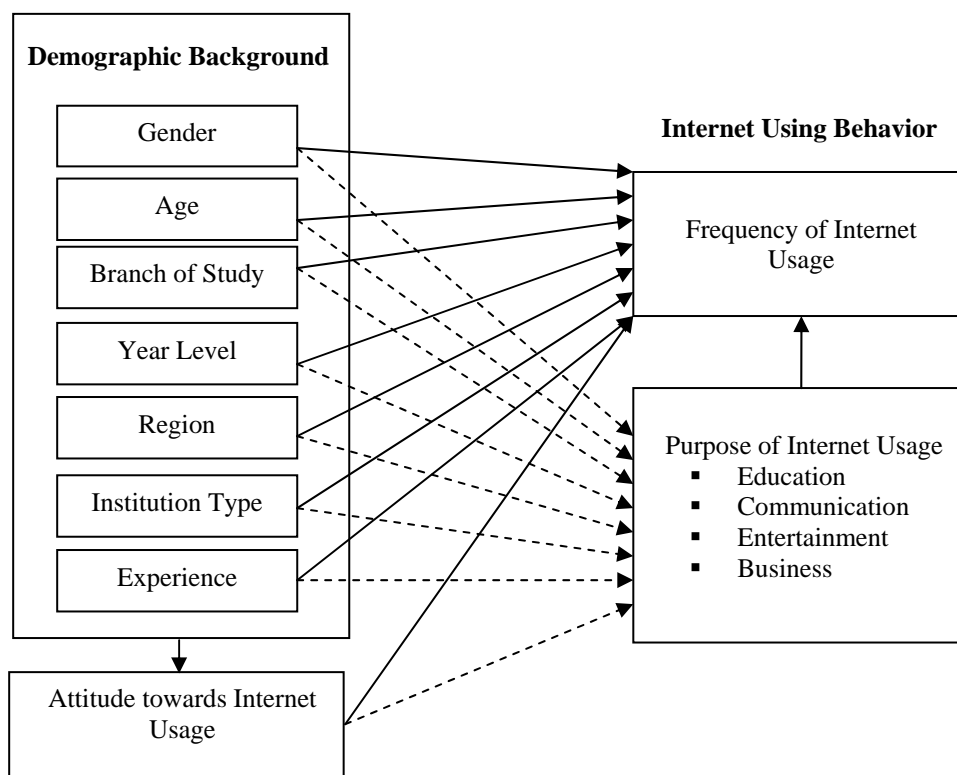
2. The population of the research was undergraduate students in Bangkok and suburban areas.

3. Variables in this research were as follows:

- Independent variables were demographic background (including gender, age, year, level, branch of study, region, institution type, and experience of using the Internet) and attitude towards internet usage.

- Dependent variables were Internet using behaviors which were frequency of internet usage and purpose of internet usage.

The framework of this research is shown below:



RESEARCH HYPOTHESES

1. Students with different branches of study, types of institution, regions, year levels, and experience have different Internet using behavior.

2. Student with different branches of study, types of institution, regions, year levels, and experience have different attitude towards Internet usage.

3. The demographic variables have an influence on Internet using behavior.

4. Attitude towards Internet usage has an influence on Internet using behavior.

LITERATURE REVIEW

Commission on Higher Education of Thailand (2005) classified types of institution into 3 groups that are public universities, private universities, and RMUT and RU. As well as, branches of study of each group can be divided into 3 areas -- physical science, biological science, and art and humanities. The first area, physical science, consists of school of science, school of engineer, school of accounting, school of architecture, and related fields. The second area, biological science, consists of school of medicine, school of

pharmacy, school of nursing, and related field. The last group composes of school of arts, school of humanities, school of business, school of economics, and related fields.

Most of the researches have been done on Internet usage of undergraduate students in Thailand. The results indicated that undergraduate students used Internet for education, entertainment, and communication. According to Chaiwang (2004) research on Internet using behavior of North Chiangmai College students, the results revealed that 98.1% of undergraduate students at North Chiangmai used the Internet for education, 97.6% for finding interesting data, 92.8% for communication, 83.3% for choosing a variety of products and 79.4 % for downloading software. Similarly, Chaiyasoonthorn (2004) from King Mongkut's Institute of Technology, Ladkrabang, found that students used the internet for education, entertainment, and their occupation at average level. On the other hand, their internet usage to gain the information they wanted was at high level. Additionally, Sugdinageatigul (2003) summarized that the most outstanding activity of using the Internet of undergraduate students was to find data which led to furthering their knowledge. This result was in accordance with the concept of Chairuck (2002), who stated that the Internet was useful for undergraduate students to acquire knowledge in addition to their classroom lessons in order to communicate with each other, to check their grades, and exchange news. Moreover, Suttiorn maneewat (2002) studied factors relating to Internet using behavior of students in Central Rajamangla University

of Technology. She found that the independent variables which influence behavior were experience, average time, purpose of using the Internet, and attitude towards using it.

METHODOLOGY

Research Sample

The survey technique was used in this research. The research population was all undergraduate students in Bangkok and suburban areas in 2005 which can be classified into 3 groups of institutions including public universities, private universities, and RMUT and RU. The samples were selected by the use of Multistage Random Sample as follows:

Stage 1: The researcher used the Cluster Random Sampling technique to classify the population into 3 groups and chose 2 institutions for each group. Because the population is of large size, if Sample Random Sampling is used, the data might be much distributed.

Stage 2: The researcher used the Stratified Random Sampling technique to classify the students into 3 groups of study branches. Each branch consisted of 4 levels of year.

Stage 3: The researcher used the Quota Sampling technique. The sample size was calculated based on the sample size table of Krejcie, R V. and Morgan, D.W., 1970. If the population is 100,000, the sample size will be 384 people. In this research, the population is 156,346 students (Commission on Higher Education of Thailand, 2005). Therefore, the sample size is 690 students (see Table 1).

Table 1: The sample size of each university

Branch of Study	Year Level				Total
	1	2	3	4	
Physical Science	5	5	5	5	20
Biological Science	4	4	4	3	15
Art and Humanity	20	20	20	20	80
Total	29	29	29	28	115

Research Instruments

This research design was a kind of quantitative approach. In order to achieve the purpose of this study, the researcher utilized a survey questionnaire as a research tool. It was divided into four sections:

The first section inquired about the respondents' demographic background including gender, age, year levels, branches of study, types of institution, and regions.

The second section asked about the frequency; experience of using the Internet; Internet using behavior including education, communication, enter-

tainment, and business; and internet abuse behaviors.

The third section asked about the attitude towards using Internet.

The fourth section asked about the problems and limitations of Internet usage.

Prior to sending to the respondents, the questionnaire was pre-tested with a sample group of 50 students who were not selected to participate in the study in order to verify the meaning of the concept and content validity. Concerning the reliability of the questionnaire, Cronbach's alpha coefficient value was between 0.6-0.8 (see Table 2).

Table 2: Cronbach's alpha coefficient of each section

Section	Cronbach's Alpha
Friency of Using IT in each dimension	
- Education	0.789
- Communication	0.655
- Entertainment	0.683
- Business	0.846
Internet abuse behavior	0.780
Attitude towards Internet usage	0.774
Problems and limitations of Internet usage	0.766

Data Analysis

The researcher collected data from the survey questionnaire and used the SPSS for windows program version 13.0 to examine the descriptive statistics and inference statistics as follows:

Step 1 Descriptive statistics: analyze demographic background, experience and frequency of using the Internet to examine the minimum, maximum, mean, and standard deviation

Step 2 Frequency table and cross tab table: demonstrate the characteristics of the samples

Step 3 One-way Analysis of Variance (one-way ANOVA): confirm mean difference in behavior, attitude and problems of using the Internet between the clusters of study branches and types of institution at the significant level of .05.

Step 4 Correlation coefficient: compute all concerned variables in this study

Step 5 Multiple linear regression: determine the contribution of dependent variables to predict the frequency of using the Internet per week

The basic regression equation can be specified as follows:

$$\text{Freq} = \beta_0 + \beta_1 \text{Exp} + \beta_2 \text{Edu} + \beta_3 \text{Ent} + \beta_4 \text{Com} + \beta_5 \text{Bus} + \beta_6 \text{Att} + \beta_7 \text{Prob} + \beta_8 \text{Hour}$$

Freq	is frequency per week in using the Internet (The number of days per week)
Exp	is experience of using the Internet (The number of year experience)
Edu	is Internet using behavior in education (A five-point Likert scale)
Ent	is Internet using behavior in entertainment (A five-point Likert scale)
Com	is Internet using behavior in communication (A five-point Likert scale)
Bus	is Internet using behavior in business (A five-point Likert scale)
Att	is attitude towards Internet usage (A five-point Likert scale)
Prob	is problem and limitation of using the Internet (A five-point Likert scale)
Hour	is number of Internet using hour per day

The questionnaire was created using a five-point Likert scale ranging from the most to the least. According to Best (1978), the meaning of each range is as follows:

1.00-1.50	The least
1.51-2.50	Less
2.51-3.50	Average
3.51-4.50	More
4.51-5.00	The most

Results

The results of this research were as follows:

Descriptive statistics show mean, standard deviation (SD), minimum, and maximum of concerned variables (see Table 3).

Table 3: Descriptive statistics

Variable	Mean	SD	Min	Max
Age (years)	20.46	1.73	18	32
GPA	2.88	0.46	1.78	4.00
Experience (years)	5.40	2.43	0	20
Using the Internet per week (days)	3.75	1.72	0	7
Using the Internet per day (hours)	2.90	1.98	0	24

Frequency table shows sample size classified by types of institution:

Table 4: Period of using the Internet

	08-12.00	12.01-16.00	16.01-20.00	20.01-24.00	24.01-04.00	Total
Public universities	1.6%	3.2%	7.7%	25.1%	1.3%	39.0%
Private universities	0.6%	2.3%	16.4%	14.9%	0.3%	34.5%
RMUT & RU	2.2%	5.7%	7.6%	9.2%	1.9%	26.6%
Total	4.4%	11.2%	31.7%	49.2%	3.5%	100%

Table 5: Location for using the Internet

	Home/Dormitory	University	Internet Cafe	Total
Public universities	27.3%	9.6%	2.0%	38.9%
Private universities	6.9%	8.3%	19.4%	34.5%
RMUT & RU	9.3%	12.4%	4.8%	26.5%
Total	43.4%	30.3%	26.2%	100%

Table 6: Internet using behavior

	Education	Entertainment	Communication	Business	Others	Total
Public universities	13.6%	15.5%	8.8%	0.3%	0.7%	38.9%
Private universities	5.7%	24.2%	4.1%	0.1%	0.3%	34.4%
RMUT & RU	10.0%	14.6%	1.8%	0.0%	0.3%	26.6%
Total	29.3%	54.3%	14.6%	0.4%	1.3%	100%

The hypothesis was tested by comparing means using one-way analysis with the LSD Post Hoc test for multiple comparisons.

Internet using behavior in education classified by institution type $F = 36.929$ ($p < 0.05$) $df = 2$ for between group

classified by branch of study $F = 2.963$ ($p > 0.05$) $df = 2$ for between group

Internet using behavior in entertainment classified by institution type $F = 20.605$ ($p < 0.05$) $df = 2$ for between group

classified by branch of study $F = 3.004$ ($p > 0.05$) $df = 2$ for between group

Internet using behavior in communication classified by institution type $F = 32.074$ ($p < 0.05$) $df = 2$ for between group (The institutions that used

the Internet the most for communication were private universities.)

classified by branch of study $F = 5.301$ ($p < 0.05$) $df = 2$ for between group (The study branch that was related the most to Internet usage in communication was Science and Technology.)

Internet using behavior in business classified by institution type $F = 26.578$ ($p < 0.05$) $df = 2$ for between group (The institutions that used the Internet the most for communication were colleges.)

classified by branch of study $F = 3.474$ ($p < 0.05$) $df = 2$ for between group (The study branches that were related the most to Internet usage in communication was Social Science and Humanities.)

Table 7: Correlation Coefficient

	Age	GPA	Exp	Day	Hour	Education	Communication	Entertainment	Business	Negative	Attitude	Problem
Age	-											
GPA	.056	-										
Exp	.106**	.236**	-									
Day	-.050	.020	.233*	-								
Hour	-.032	-.098*	.119**	.379**	-							
Education	.050	-.045	.139**	-.024	.125**	-						
Communication	-.093*	.008	.295**	.250**	.244**	.305**	-					
Entertainment	-.009	-.170**	.127**	.082*	.205**	.311**	.518**	-				
Business	.150**	-.190**	-.086*	.046	.097*	-.030	.518**	.249**	-			
Negative	-.075	-.128**	.061	.131**	.226**	.124**	.306**	.262**	.243**	-		
Attitude	.009	-.012	.155**	.144**	.071	.244**	.163**	.096*	-.111**	.082*	-	
Problem	.091*	-.105*	-.225**	-.078	-.044	-.128**	-.095*	-.001	.289**	.148**	.016	-

** Correlation is significant at the 0.01 level (2-tailed).
 * Correlation is significant at the 0.05 level (1-tailed).

Regarding the relationships between concerned variables, it was found that the attitude had a relationship with the Internet using behavior in terms of education, communication, entertainment, and business ($r = .244^{**}, .163^{*}, .096^{*}$ and $-.111^{**}$). Also, Internet misuse behavior had a relationship with the purpose of Internet usage. While problems in using the Internet had a negative relationship with

GPA, Internet using experience and Internet using behavior in terms of education, entertainment, and communication ($r = -.105^{*}, -.225^{*}, -.128^{*}, -.095^{*}$ and $.289^{**}$).

From the conceptual framework, the researcher determined the contributions of dependent variables to predict the frequency of using the Internet per week (see Table 7).

Table 7: Regression Analysis

Variable	Unstandardized Coefficients	Standardized Coefficients	T	Sig.
Const.	0.977		2.595	.010
Sex	-0.547	-0.153	-3.401	.001
Edu	0.214	0.108	2.370	.018
Com	0.288	0.164	3.387	.001
Bus	0.154	0.111	2.403	.017
Exp	0.072	0.100	2.170	.031
$R^2 = 0.126, F = 12.942, \text{Sig of } F = .000$				

$$\text{Freq} = 0.977 - 0.547 (\text{Sex}) + 0.214 (\text{Education}) + 0.288 (\text{Communication}) + 0.154 (\text{Business}) + 0.072 (\text{Experience})$$

From this equation, we classified by sex into 2 equations as follows:

Male regression equation:

$$\text{Freq} = 0.977 + 0.214 (\text{Education}) + 0.288 (\text{Communication}) + 0.154 (\text{Business}) + 0.0732 (\text{Experience})$$

Female regression equation:

$$\text{Freq} = 0.763 + 0.214 (\text{Education}) + 0.288 (\text{Communication}) + 0.154 (\text{Business}) + 0.0732 (\text{Experience})$$

CONCLUSION

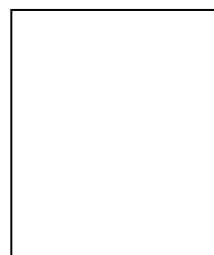
This research examined factors influencing the Internet using behavior of undergraduate students in Bangkok and suburban areas. The results showed that the average GPA was 2.88. The experience of using the Internet was about 5 years and most students used the Internet for entertainment. Private universities have a different pattern of Internet usage from other universities. Attitude had a positive relationship with the Internet using behavior in terms of education, communication, entertainment, and business. Problems in using the Internet had a negative relationship with GPA, Internet using experience, and Internet using behavior in terms of education, entertainment and communication. The coefficient deter-

minations (R square) are low because some of the variables have a low usage rate such as business. Moreover, there are other variables that are not included in this study such as the users' opinions for different purposes of Internet usage. For further research, the comparative study with different regions such as Lao, Vietnam, and Malaysia could be conducted in order to extend the results of the study. In addition, the factor analysis will be implemented to increase the validity of the study and simultaneously improve R square.

The study revealed that most of the sampling used internet more for entertainment than for education due to the lack of the official internet usage rule. There are many advantages and disadvantages of Internet usage; therefore, students should take this into their consideration before making a decision what to choose. If Internet abuse behavior occurs, it may interrupt or affect other people. For an efficient internet usage, each internet service provider should detect the accessed unsuitable websites and develop its high speed Internet in order that their users do not waste time.

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