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MOTIVATION OF INTERNET USE: RELATION WITH PATHOLOGICAL INTERNET USE, GENDER AND INTERNET ACTIVITIES

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Abstract

This study is aimed to examine the motivation of Internet use among university students in Malaysia. A total of 102 students from Universiti Teknologi Malaysia (UTM) answered the pencil-paper questionnaire. Result of descriptive analysis showed that 49.02% of students were identified as pathological Internet use (PIU). The predominant motivation of Internet use were information seeking and entertainment/escape. The inferential analysis using MANOVA indicated that students with PIU reported significantly higher scores of all motivation factors of Internet use than their non-PIU peers. Correlational test was used to examine the relationship between motivation of Internet use and Internet activities found that social recognition was significantly related to four Internet activities including social networking site (SNS), online game, shopping and browsing. Entertainment/escape was only related to SNS usage. The low coefficient of correlation between motivation and Internet activities implied the influence of potential variables.

Keywords: Motivation of Internet use, pathological Internet use (PIU), university students, gender, Internet activities

Abstrak

Kajian ini bertujuan untuk menyelidik motivasi penggunaan Internet dalam kalangan pelajar universiti di Malaysia. Sebanyak 102 orang pelajar dari Universiti Teknologi Malaysia (UTM) telah menjawab soal selidik pensel-kertas. Keputusan analisis deskriptif menunjukkan 49.02% pelajar dikenal pasti sebagai Patologi Penggunaan Internet (*Pathological Internet Use*, PIU). Motivasi penggunaan Internet yang paling dominan ialah pencarian maklumat dan hiburan/ melarikan diri. Analisis inferensi menggunakan MANOVA menunjukkan bahawa pelajar PIU didapati menunjukkan skor yang tinggi bagi semua faktor motivasi penggunaan Internet berbanding dengan rakan-rakan bukan PIU. Ujian korelasi yang digunakan untuk mengenal pasti hubungan antara motivasi penggunaan Internet dengan aktiviti Internet menunjukkan bahawa penerimaan sosial mempunyai hubungan signifikan dengan empat aktiviti Internet termasuk laman jaringan sosial (*social networking site (SNS)*, permainan atas talian (*online game*), membeli-belah dan melayari Internet. Hiburan/ melarikan diri hanya dihubungkan dengan penggunaan SNS. Koefisien hubungan yang rendah antara motivasi dengan aktiviti Internet memberikan implikasi bahawa mungkin terdapat pengaruh pemboleh ubah lain.

Kata kunci: Motivasi penggunaan Internet, Patologi Penggunaan Internet (*Pathological Internet Use*, PIU), Pelajar universiti, Jantina, aktiviti Internet

1.0 INTRODUCTION

There were approximately 2.27 billion Internet users all over the world in 2011. The growth rate is 528.1% from 2000 to 2011. Asia takes the biggest population, more than one billion, followed by Europe and North America [1]. Internet as the new technology affects various aspects of society and people, such as communication, study, work, business, shopping. It provides a global data communications system between computers, which bring many advantages such as faster communication, information resources, entertainment, social networking, and convenient life. By the development of technology, it contains more and more various applications and functions, not only provide the traditional functions as radio and TV, but

also develop new form of functions, such as social networking site (SNS) (e.g. Facebook), blog, chatting.

In Malaysia, 43% of college student were identified as pathological Internet use (PIU) who engaged in excessive use of Internet and [2] deserved negative influence on their normal life. They averagely spent 13.31 hours on Internet every week and started using computers at the age of 14 [2]. Several motivations were identified to be related to Internet use, such as information seeking, communication, entertainment [3]. Among the users in Malaysia, most of them use Internet for entertainment purpose on their leisure time (71%), followed by the information seeking (59%), a tool for self-express (56%) and release pressure (47%) [4].

Past research indicated that some motivations were closely related to pathological Internet use (PIU), such as social / entertainment motivation [5], communication [6]. Individual with PIU felt more fun, entertaining, and interactive/social online than their non-PIU peers, and got more satisfaction with their Internet usage [5]. Furthermore, different Internet activities are associated with different motivation. A study found that perceived ease of use and perceived enjoyment were related to messaging, browsing and downloading activities, while perceived usefulness was associated with the all of the four activities (messaging, browsing, downloading and purchasing) [7]. Individual choose the Internet application to meet their needs, such as web searching for study, game for entertainment and fun, social networking site for social interaction and communication. They would feel satisfaction and gratification by using the Internet application they chose. With the increasing number of Internet application and its underlying motivation of Internet use, as well as the close relationship with PIU, it is important to examine the motivation of Internet use among Malaysia university students and the its relationship with PIU and various Internet activities.

A research examined the individual's perception on Internet, found that Internet addict group were more satisfied with their Internet usage as they felt that the Internet is more entertaining, fun, and interactive which could help them escape from their real-world responsibilities and identification. Both the addict and on-addict groups agreed on the positive impact of Internet on their relationships with friends/ schoolmates [8]. A study to identify the strongest predictors of Internet use, first explored the underlying motives of Internet use which were Social media and entertainment (SME) and Work and information (WI). The regression analysis showed that the most significant predictors of SME were younger age, the frequency of Internet use at public place, at friends and at home, lower education level, and the ethnic minority status, while, the WI was best predicted by the frequency of Internet use at work or school, higher education level, more active civic participation, and the ethnic majority status [9].

Entertainment was the major motivation factor for high school students to Internet use, followed by information searching [10]. Researcher further studied the correlation of motivation and Internet addiction, which found that Internet addiction was positively associated with surfing with social/entertainment motivation and gratification. But there was no difference in instrumental motivation and gratification between Internet addict and non-addict group [10]. Visiting entertainment sites were reported to be associated with the motivation of entertainment, social interaction, pass time and relaxation [11].

The social function was significantly correlated to all facets of Internet addictive behaviour (compulsive use, withdrawal, tolerance and the problems in the interpersonal relationship and health) [12]. While, the information function of Internet was only related to the problems in the interpersonal relationship and health. Social function of Internet played an important role in maintaining both the real and virtual social networks [13].

Similarly, another study found that students with entertainment and/or communication of Internet use experienced higher levels of Internet abuse than those with information of Internet use. The researcher further suggested that the main motivation of Internet addiction were entertainment and communication [6].

There was limited study on motivations of Internet use in Malaysia context. This study introduced Leung's concept on motivation of Internet use and intended to explore four of the most commonly studied motivations of Internet use (entertainment, relationship maintenance, recognition gaining and information seeking) in Malaysia [14-16].

2.0 OBJECTIVES

This study focused on the motivation of Internet use. The objective of the study were to identify: (a) cases of PIU and time spent on diverse Internet activities, (b) motivations of Internet use among university students across gender and PIU influence on the motivation of Internet use, and (c) the relationship between the motivation of Internet use and various Internet activities.

3.0 MATERIALS AND METHOD

Convenient sampling method was used to collect the sample of this study. There were 102 undergraduate students from Univerisiti Teknologi Malaysia (UTM) participated in this study. Among the respondents, 50 (49.0%) were males and 52 (51.0%) were females. The mean age was 21.83 (SD=2.17) years.

A questionnaire was distributed those students, which was comprised by two developed scales, Young's Internet addiction Diagnostic Questionnaire (YDQ) and Leung's motivation of Internet use scale. Young's Internet addiction Diagnostic Questionnaire (YDQ) is an eight-item scale based on the diagnostic criterion of Pathological Gambling [17]. Individuals who answer ''yes'' to five or more of the eight items

can be classified as addicted Internet users (Dependents), while others could be classified as normal Internet users (Non-Dependents) [17]. It was translated into various language such as Greek [18, 19], Norwegian [20], Chinese [21] and reported good reliability (>0.7), construct validity and diagnostic accuracy with sensitivity analysis [18-21].

The Motivation of Internet use scale (M-I) contains 17 items and is rated on a five point Likert scale that from 1 for not at all satisfied to 5 for very satisfied. The construct validity tested by factor analysis found a four-factor structure of this scale, which was named as entertainment, relationship maintenance, recognition gaining, and information seeking. The reliability tested using internal consistency was acceptable, which were 0.79 for entertainment, 0.70 for relationship maintenance, 0.71 for recognition gaining and 0.65 for information seeking [22].

Table 1 Confirmatory Factor Analysis for motivation of Internet use

Items	Mean	SD	1	2	3	4
m1	3.216	1.059	0.740			
m2	3.696	0.888	0.810			
m3	3.951	0.837	0.800			
m4	3.422	0.959	0.720			
m5	3.186	1.022		0.740		
m6	3.578	1.057		0.680		
m7	3.265	1.043		0.880		
m8	3.108	1.116		0.830		
m9	2.873	1.096			0.860	
m10	2.686	1.099			0.830	
m11	2.500	1.141			0.880	
m12	2.412	1.047			0.770	
m13	3.706	0.874				0.880
m14	4.049	0.801				0.820
m15	4.088	0.810				0.840
Cronbach's Alpha			0.787	0.818	0.849	0.781
FACTOR CORRELATIONS						
	1	2	3	4		
1	1.00					
2	0.73**	1.00				
3	0.30**	0.51**	1.00			
4	0.71**	0.53**	0.04	1.00		

1=Entertainment/Escape, 2=Relationship Maintenance, 3=Social Recognition, 4=Information Seeking
*p<0.05, **p<0.01

This study delete two items of Leung's Motivations of Internet use scale and adapted the expression on the rating scale which are 1 for disagree strongly and 5 for agree strongly. The construct validity were verified by confirmatory factor analysis in this study which identified four-factor model with adequate goodness of fit (X2/df=1.910, CFI=0.96, NNFI=0.94, RMSEA=0.080).

As shown in Table 1, the item loadings of each factor were high, ranged from 0.680 to 0.880. The Cronbach's Alpha value of each factor subscale were satisfaction, 0.787 for entertainment & escape, 0.818 for relationship maintenance, 0.849 for social recognition, 0.781 for information seeking. There were significantly moderate to high correlation among four factors, except social recognition and information seeking.

4.0 RESULTS AND DISCUSSION

Fifty students (49.0%) were identified as pathological Internet use (PIU). And the other fifty-two students were deemed as non-pathological Internet use. This study examined the time spent on seven Internet activities for a typical day (SNS, e-mailing, online game, online shopping, browsing, online media viewing, and instant messaging), which showed that students with PIU spent more time than non-PIU students on six Internet activities, except e-mailing (Table 2). Among the seven Internet activities, both PIU and non-PIU students spent most of their time on SNS (e.g. Facebook.com), which the duration of SNS useage was almost two times or more than that of other Internet activities (e.g. e-mailing, online media viewing).

Table 2 Time spent on Internet activities

	non-PIU		PIU	
	Mean (h)	SD	Mean (h)	SD
SNS	2.962	2.392	4.160	3.401
e-mailing	1.077	1.026	0.800	0.728
online game	1.019	2.218	1.440	2.957
online shopping	0.404	0.846	0.900	1.669
browsing	0.904	1.432	2.400	3.017
online media viewing	1.346	1.667	2.420	2.963
instant messaging	0.558	1.335	1.300	2.306

Table 3 and Figure 1 showed the mean scores on four motivation of Internet use factors among gender and PIU vs non-PIU groups. The descriptive data using mean and standard deviation showed that both the male and female PIU students reported higher scores on four motivation of Internet use factors than non-PIU. In PIU group, the males reported higher scores than females on three motivation of Internet use factors in terms of relationship maintenance, social recognition, information seeking. Differently, in non-PIU group, the females reported higher scores than females on three motivation of Internet use factors (entertainment/escape, relationship maintenance, information seeking). Both the PIU and non-PIU students rated the lowest on social recognition (below 3.00), which meant that social recognition was not perceived as the predominant motivation of Internet use by this study sample. Furthermore, among the four motivation of Internet use factors, information seeking was rated highest, followed by entertainment/escape, relationship maintenance and social recognition.

A 2×2 multivariate analysis of variance (MANOVA) was conducted to further test the significant score difference between gender and PIU vs non-PIU group by using the four motivation of Internet use factors as dependent variables. The MANOVA result including

multivariate and univariate test is displayed in Table 4, which showed that there is no significant interaction effect. But PIU vs non-PIU group had a significant main effect in terms of all motivation scores (entertainment/ escape, relationship maintenance, social recognition, information seeking), while, gender had a significant main effect in terms of social recognition motivation of Internet use. It means that PIU students reported significantly higher scores than non-PIU on four motivation of Internet use factors, and male students reported significantly higher scores than females only on one motivation of Internet use factor, social recognition (Table 3 and Table 4).

Table 3 Motivation of Internet use

		non-PIU			PIU			Total		
		Mean	SD	N	Mean	SD	N	Mean	SD	N
entertainment / escape	male	3.119	0.655	21	3.905	0.708	29			
	female	3.315	0.629	31	3.941	0.596	21			
								3.571	0.732	102
relationship maintenance	male	3.000	0.840	21	3.647	0.784	29			
	female	3.113	0.854	31	3.321	0.833	21			
								3.284	0.853	102
social recognition	male	2.619	0.980	21	3.138	0.844	29			
	female	2.129	0.716	31	2.619	0.835	21			
								2.618	0.910	102
information seeking	male	3.682	0.680	21	4.150	0.743	29			
	female	3.871	0.698	31	4.048	0.531	21			
								3.948	0.689	102

Table 4 MANOVA tests for gender and PIU vs non-PIU difference on the motivation of Internet use

	Tests	
Group effect and dependent variable	**Pillai's trace (F)**	**Univariate (F)**
Gender	2.736*	
entertainment/ escape		0.774
relationship maintenance		0.406
social recognition		8.995*
information seeking		0.101
PIU vs non-PIU	8.698**	
entertainment/ escape		28.991**
relationship maintenance		6.596*
social recognition		8.995*
information seeking		5.598*
PIU vs non-PIU × Gender	0.567	
entertainment/ escape		0.373
relationship maintenance		1.731
social recognition		0.007
information seeking		1.131

*<0.05, **<0.01

Correlation was performed to test the significant relationship between the four motivation of Internet use factors and time spent on seven types of Internet activities. As shown in Table 5, among the seven types of Internet activities, four Internet activities were found to be significantly correlated to motivation of Internet use. SNS was significant positively related to two motivation of Internet use factors in terms of entertainment / escape and social recognition, while, the other three Internet activities including online game, shopping and browsing were significant positively correlated to social recognition motivation of Internet use. It means that students with higher social recognition motivation of Internet use tended to spent more time on SNS, online game, shopping, and browsing. The higher entertainment/escape motivation of Internet use also related to more SNS use.

Table 5 Correlation of Internet activities and motivation of Internet use

	Entertainment/ Escape	Relationship Maintenance	Social Recognition	Information Seeking
SNS	0.222*	0.132	0.267**	0.191
e-mailing	-0.103	-0.046	0.051	-0.170
online game	0.066	0.040	0.233*	-0.082
online shopping	0.138	0.150	0.228*	0.130
browsing	0.061	0.059	0.274**	0.061
online media viewing	0.188	0.103	0.133	0.118
instant messaging	0.129	0.133	0.190	0.074

*<0.05, **<0.01

5.0 DISCUSSION

5.1 PIU versus non-PIU

A study in Malaysia identified 72 (43%) cases of PIU among 162 college students by using the Internet addiction Diagnostic Questionnaire (YDQ) [2]. This study also used Yong's the Internet addiction Diagnostic Questionnaire (YDQ) to divide the students into PIU and non- PIU, which found a quite similar probability of PIU cases (49.0%) as study illustrated above. The consistent high rate of PIU found in both studies called for the awareness of relevant education sectors and educators on the excessive Internet use among students in college and universities.

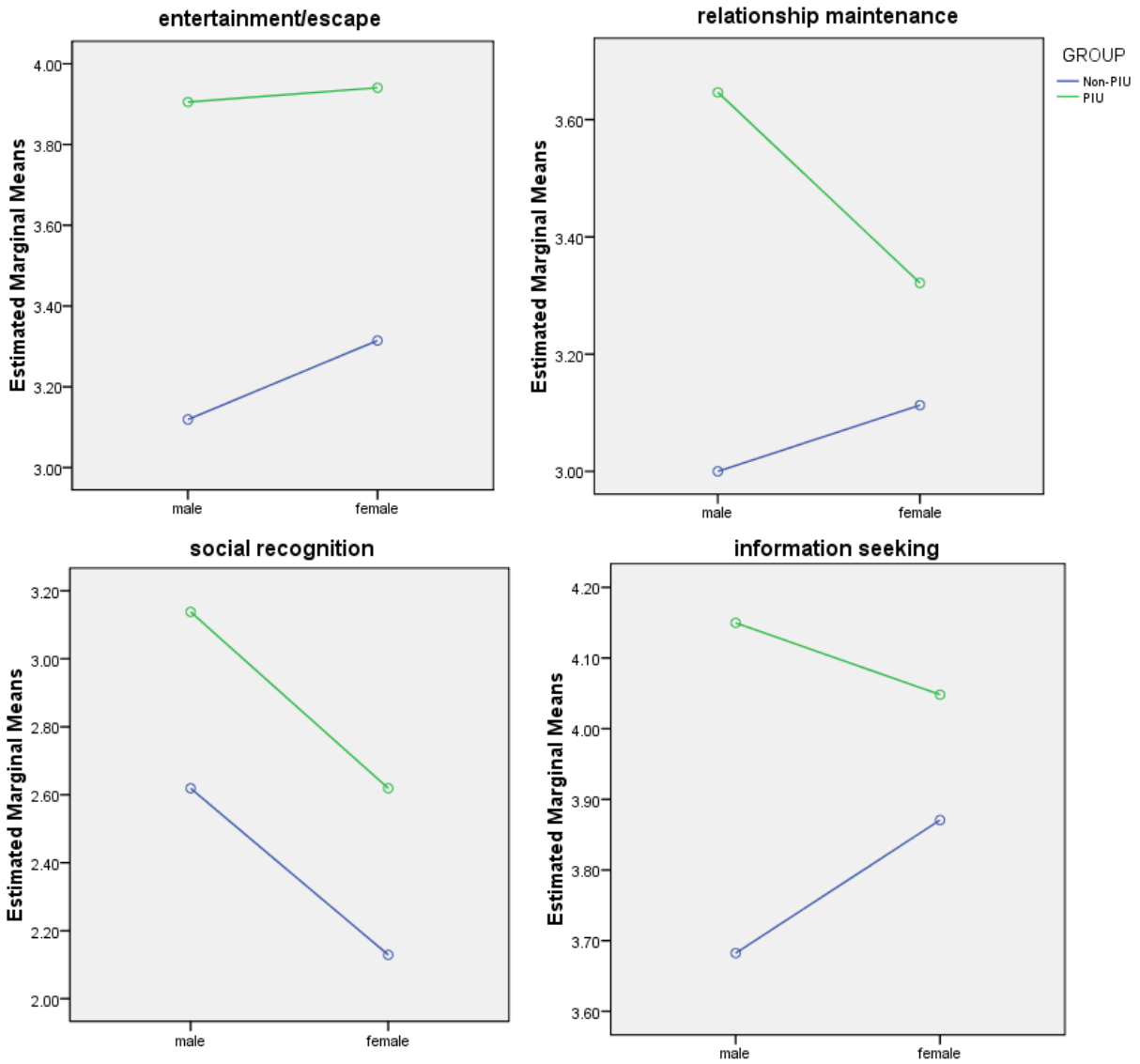

Figure 1 Estimated marginal means of motivation of Internet use for groups (male vs female, PIU vs non-PIU)

Time spent on Internet was always a sign of difference between PIU and non-PIU. Majority of previous studies indicated that individual with PIU spent extremely more time on Internet than non-PIU peers [5, 8, 23, 24], maximum nine hours nonstop online [25]. Consistently, this study reported the time spent on seven most popular Internet activities instead of the total number of hours spent on Internet, which also showed that the PIU group spent more time on six Internet activities, except e-mailing. A study found that individual with PIU reported higher rate of Internet use on some specific internet application including online games, online shopping, or online community activities, while the non-PIU group reported higher rate of using e-mail or chatting, and doing information searches [26]. This kind of distinction between PIU and non-PIU was only found in e-mailing, not in information searches which is equivalent to browsing in this study. Differently, some studies reported that the high risk of PIU group spent more time on e-mailing [8, 25].

A recent study investigated the SNS usage in Malaysia found that most (31.5%) of respondents updated their SNS profiles every day. Checking messages was rated as the first purpose to visit SNS, followed that were checking comments/testimonies and playing games [27]. This study provided the evidence of popular use on SNS, which reported that both PIU and non-PIU students spent more time on SNS (e.g. Facebook.com) than other Internet activities. A study in Korean also found that SNS was rated as the first favorite Internet application among 11 Internet activities including social networking sites (SNS), downloading or streaming music, downloading or streaming videos, instant messaging, online gaming (e.g., EverQuest, World of Warcraft), online gambling, online shopping, online pornography, chatrooms, auctions (e.g., eBay), and e-mail [28]. Consistently, the SNS was one of the highest-ranked online activities in Europe that included watching videos and chat rooms [23].

5.2 Motivation of Internet use

Previous researches stressed the social function of Internet use [9, 12, 13], but this study did not find the important role of social function in Internet use. The motivation of social recognition in Internet use was perceived as the weakness for the university students in this study. They agreed that the information seeking and entertainment/escape were the predominant motivations of their Internet use. Although the finding of this study supported the past researches that entertainment/escape was the important motivation of Internet use [5, 6], this study implied that the information seeking was the first dominant motivation factor of Internet use, not entertainment/escape. The different findings may be influenced by different samples. Previous studies found entertainment was the major motivation in a sample of high school students and teenagers [5-6]. This study was conducted on a sample of university students who are older and encouraged to study more independently, get knowledge in multiple method, beyond the confine of text books. Currently, Internet plays as an important study tool in Malaysian higher education, so it could be expected that information seeking was perceived as the major motivation of Internet use for the university students in UTM.

Males had stronger social media and entertainment related Internet use than females, while females had stronger work and information related Internet use [9]. A study on Malaysian adolescence also found that girls used Internet more for information seeking [29]. Adversely, males reported higher information seeking than females [30]. However, this study did not find the gender difference on entertainment/escape and information seeking. The significant gender difference was only found on social recognition motivation of Internet use, which meant that male students tended to have stronger social recognition motivation of Internet use than females; they used Internet more for social recognition.

Another important finding in this study indicated that PIU students reported much higher score on all motivation factors of Internet use, especially on entertainment/escape. It meant that the students with PIU have stronger motivation of Internet use compared to the non-PIU peers. It was expected that strong motivation could facilitate the behavior and also consistent with the previous research findings that entertainment motivation of Internet use was related to Internet addiction [5, 6, 11]. But a study on a sample of Chinese college students stressed that the Internet addiction behavior was related to social and information function of Internet use, not related to entertainment for leisure function [12].

5.3 Relation of Internet activities and motivation of Internet use

A study examined the relationship of motivation (perceived ease of use, perceived enjoyment, perceived usefulness) and Internet activities (defined in terms of messaging, browsing, downloading and purchasing) found that perceived ease of use and perceived enjoyment were related to messaging, browsing and downloading activities, while perceived usefulness was associated with all of the four activities (messaging, browsing, downloading and purchasing) [7]. Individual may be driven by different motivations to choose their needed Internet activities. This study listed seven types of Internet activities found that SNS usage was driven by entertainment / escape and social recognition, while online game, shopping and browsing were driven by social recognition motivation of Internet use. The other four Internet activities were not found to be related to any motivation factor of Internet use. Although this study did not find the social recognition as the predominant motivation of Internet use, the

significant correlation of social recognition and the four Internet activities implied that social recognition was the major motivation factor for the students to keep on spending time on some specific Internet activities. Furthermore, the low coefficient of correlation between the motivation and Internet activities implied that their relationship may be influenced by some potential variables.

6.0 CONCLUSION

This study identified the information seeking and entertainment/escape as the predominant motivation of Internet use. Students with PIU spent much longer time on Internet, reported significantly higher scores on all motivation factors of Internet use compared to non-PIU. Social recognitions was found as the major motivations to keep on using some Internet activities. Motivation was deemed as an important factor of PIU development.

This study only focused on PIU and non-PIU, gender difference on the motivation of Internet use. Some other potential variables, such as personality and field of study, that may influence the motivation of Internet use and the selection of Internet activities, which may further contribute interact effect to produce PIU.

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