



## **The Relationship between Compulsive Internet Use and Psychosocial Well-Being among University Students: A Study Using PLS-SEM**

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### **Abstract**

Psychosocial well-being is synonym to life satisfaction which is complementary to happiness. Whereas compulsive internet use refers to something that the user cannot adapt adequately to the tool, the user can lose control, use for changing mood and production symptoms.. Many studies have depended on student samples; therefore, little is known about its prevalence in young adults. For this research, it focuses on university students to determine the relationship between independent variables( instant messaging, gaming and information search) and dependent variables( psychosocial well- being). 103 respondents participated in this study and were selected using a convenience sample. This study showed that most of the respondents agreed that instant messaging influences student well-being. Most of respondent has agreed that instant messaging can facilitate students to make communication with others.

**Keywords:** Compulsive Internet Use, Psychosocial well-being, University Students, PLS-SEM

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### **Introduction**

According to Andrews and McKennell (1980), psychological well-being is a knowledgeable component, life satisfaction is seen as complementary to happiness and a more affective measurement of positive functioning. Furthermore, Kraut, Robert ,Lundmark, Kiesler, Mukopadhyay, and Scherlis, William (1998) confirmed that adolescent would have problem such a decrease in well-being. According to Regina, Eijnden, Spijkerman, Vermulst, Rooil and Engels (2009) thought that adolescent's today

heavy usage of the Internet for online communication lead them to leave weak relations with their friends, family and with strangers. Although study means a poor relationship between online communication and psychological well-being, because of their cross-sectional design they give no guidance about the direction of the unity. Therefore, according to Kraut (1998) the question emphasized either, in agreement with the study, online communication influences a decline in psychological well-being or either low psychological well-being influences to an increase in online communication. This study focuses the relationship between online communication function and adolescent psychological well-being such as loneliness, low self-esteem and emotional stability.

The Internet has become a widely used communication medium. According to Valkenburg and Peter (2007) nearly most of Dutch adolescents use 84% for Internet for real time online communication, which is chat rooms and instant messaging. In addition, Caplan( 2003) argued that online communication plays a central role in the development of compulsive use of the Internet.. The interactive aspects of the Internet are thought to be something attractive, creating an atmosphere to develop a compulsive inclination to seek friendship and sexual excitement and to change the identities (Young, 1997). According to Turkle (1996) some scholar argue that the internet is causing people to become socially segregate and disconnected from genuine social relationships, because they hunker alone over their terminals or communicate with unknown strangers through a socially poor medium.

Compulsive Internet Use refers to something that the user can not adjust adequately with the tool, the user can lose control; use to change mood and symptoms of production Many studies depend on student samples, so little is known about their prevalence among adults. According to Kim and Davis (2009), the reasons behind this problem are the widespread use of computers where users communicate with other users in virtual space called cyberspace.

. This cyberspace has created as a new environment that is totally different from our real world, since is has relationship with peoples all over the world, we can obtain and spreading knowledge or information in order for further development from cyberspace.

According to Chou and Hsiao (2000), it has also been suggested that some adolescents can become part of certain Internet applications that make them unable to control their online activity, it has been shown that these young people have progress symptoms of compulsive Internet use.

Psychologists in the public media have shown that ongoing discussions about the effect of online communication on the psychosocial well-being of adolescents are taking place. According to Kraut, et al. (1998), internet communication can have a positive impact, such as increased social support and easy connection with friends. In order to differentiate between instant messaging, gaming and information seeking is form of online communication where users see immediately until the sender responds. Moreover, in contrast to chatting in gaming, instant messaging can create a reflection communication between people who already know their friends; the use of instant messaging should be both users actively program each other their account (Subrahmanyam, Greenfield & Tynes, 2004).

## **Statement of Problem**

Today, internet use is increasing among adolescents. Almost all adolescents use the Internet for individual communications (Valkenburg & Peter, 2007). In addition, from

previous research, the researcher investigated the relationship between the exaggerated use of the internet by adolescents and the effect of their psychosocial well-being. Addiction of the internet can make adolescent loss of control, withdrawal symptoms, fun and personal conflict (Beard, 2005). Adolescent that had extreme usage of internet will face critical relationship with the family and friend for poor relations with strangers (Van den Eijnden, Meerkerk, Vermulst, Spijkerman, & Engels, 2008).

University students were considered one of the most exposed to the problem of excessive internet use (Van den Eijnden et al., 2008). Some of the students used the internet without knowing that the class or examination was missed without knowing that the course would fail. Besides that, the adolescent will be spent more of their time to the three items, which is instant messaging, gaming and information seeking (Van den Eijnden et al., 2008). Secondly, online gaming is more about social interaction, which people can reward or achieve in the game. People will spend more time in the online game compared to offline games. Finally, the information seeker uses adolescents more to find information, and it will also take more time. Adolescent faced the problem of loneliness, depression, and anxiety when they don't used the internet (Pantic, 2017). While using the internet adolescent can reduce the problem they are faced. Therefore, the study is conducted to identify to relationship between compulsive internet and psychosocial well-being among Malaysian students.

## Literature Review

### Psychosocial Well-being

According to current studies about well-being it is seen that there are several concepts along with the main concept of well-being such as subjective, psychological well-being and life satisfied. The meanings of these concepts are not the same, but they are related to the conditions under which a person functions positively and happily (Dost, 2005). Today, it is beginning to understand that the disorder deficit is a person who needs but not enough for well-being. Psychology begins to focus on well-being, which has been a desert topic for years, and the number of studies on this topic has increased (Dost, 2005). Together with the links between technology and productivity, the researchers have changed their focus by increasingly addressing this situation's impact on well-being. Some people can lose control over the Internet and this can have an impact on them in the short or long term of their lives.

The relationship between psychosocial well-being and Internet usage is detain question in computer mediated communication research. The original question, though that the Internet can affect psychological well-being in temporary by having evidences that the internet also have a positive impact to individual well-being. Moreover, these individuals bring a problem by adding to their lives because of loneliness. On the other hand, Gibson, (2000) loneliness is experiences from a person that are dissatisfied what they need. Young (1982) defined that loneliness is having relationship without satisfied. Gibson, (2000) said loneliness is quite different with aloneness but it showed feelings of not satisfied with current interpersonal relationships. Loneliness is always a concern for psychologists. There a lot perception said that more some individual create interaction, there will be less of loneliness. The other mean is about someone is decide by how much they wants to interact with others. Researchers began to realize that loneliness was decided by two factors where the social interaction a person both desires and acquires. When someone

cannot make interaction enough then someone will not meet their needs that could be loneliness.

In addition, other interpersonal pathways are used by individuals with low self-esteem who excessively seek value from people they know by increasing risk because these are rejected by the partners and their depression will increase (Donnellan, Trzesniewski, Robins, Moffitt & Caspi, 2005). A second interpersonal pathway is the individual with low self-esteem seek negative feedback from their partners to confirm their negative from interpersonal personalities, which can make their self-concept lowest (Orth, Robins & Roberts, 2008; Giesler, Josephs, & Swann, 1996; Swann, Wenzlaff, & Tatarodi, 1992). The third interpersonal pathway is that individuals with low self-esteem involved in antisocial behaviors, such as aggression that can contribute to their feeling can be accepted from the others (Donnellan, et al., 2005). Many statements of depression stated that low self-esteem is a defining feature of depression (Giesler, Josephs, & Swann, 1996; Swann, Wenzlaff, & Tatarodi, 1992). The mixed findings between social Internet use and negative mental health outcomes such as depression suggest that compulsive Internet use needs to be measured wisely. Different adolescents reporting depressive symptoms from symptomatic peers and with heavy usage towards the Internet often experienced of depression. Depression is a mood state in which you feel sad it's an illness that affects person thoughts feelings, behaviors, and mood. Depression is predicted to be the leading cause of disease burden by 2030 (Albert, 2015) The effect will be showed those who use the Internet to make communication with person they know will show well-being benefits, with stable with work showing that communication will have better life, including lower stress and have great positive influences (Judge & Bono, 2001).

### **Adolescents**

The Internet has the most important things for adolescents in their daily lives. The studies report data show less than 1% among under graduates and 2% among 12 until 18 years old representative sample of Finn and Norwegian youth (Kaltiala-Heino, Lintonen & Rimpela 2004). It was also recommended that some adolescents no longer be able to control their online activity with the application, implying that these young people have developed signs of compulsive Internet use and also referred to in the literature as Internet addiction problem Internet use and Internet dependence (Kaltiala- Heino, et al., 2004).

### **Compulsive Internet Use**

Compulsive Internet use refers to something that the user cannot adapt adequately to the tool, the user can lose control; use to change mood and production symptoms. According to ITU (2016) there are 3.5 billion users worldwide who are using the Internet for business purposes, communicating and connecting people, facilitate business delivery and economic growth. In Malaysia, the number of internet users in 2016 was approximately 24.5 million or 76.9 percent of all Malaysian residents (MCMC, 2017). In the twenty-first century, the Internet becomes the most human support for all areas. The internet used for entertainment and people wants to create relationship through social networking. In this study, the Internet has become a 'universal enabler' of everyday life. The Internet been characterized by its able to provide a lot of information to user. Scholars first created the excessive use of the Internet and the loss of control over its use as an Internet addiction, which could lead to abuse problems (Young and Rogers, 1998). More Internet use, especially in adolescent samples, can lead to fatigue syndrome and emotional stress (Young and Rogers, 1998) In

the Netherlands, adolescents aged 11 to 15 use the internet for leisure activities about 11 hours a week on average, ranging from 9 hours a week among 11-year-olds to 15 hours a week among 15-year-olds (Van Den, Spijkerman, Vermulst, Rooij, & Engels( 2010).

### **Instant Messaging in Compulsive Internet Use**

Instant messaging (IM) has become the most important things for students and is widespread on college campuses. Previous research suggests that instant messaging users often have multiple tasks while talking online. According to Neo and Skoric (2008), university students are very prominent or heavy IM users. This is evident both in Western and developed Asian societies. Instant messaging can also be a particularly safe way to communicate with teenagers with insufficient social skills or social anxiety (Ybarra et al., 2005). Research conducted by Kraut et al., (2002) revealed that instant messaging is related to the psychological well-being of introverts. Online chatting or IM can be associated with the symptoms of compulsive Internet behavior if the individual prefers to use IM as a means of communication compared to face-to-face communication (Shaw & Black, 2008; Young, 1998). Individuals who spend a lot of time chatting online may begin to miss their online interactions when they are not online, which can lead to even more excessive chatting and symptoms such as discomfort and anxiety Van Zalk (2016).

### *Gaming in Compulsive Internet*

The Internet has upgraded communication to allow new entertainment as search information. Video games transport users to an intimate interaction with the virtual world (Lemos, Abreu & Sougey 2014). Where the function they play games consolidates with the Internet to play, which has been used to collect players from each server, they will play together with friends and unknown players. Furthermore, an important factor in online gaming is that it adds social context and social interaction to this combination, because players can show their game rewards in a virtual environment. In addition, users often require more online games than offline games. In particular, players will focus their characters in the virtual environment over time. This means that from online gaming, the individual can know each other how they chat through a room server known as a social context. Gaming also offers rewards after playing games, where they can upgrade their game characters. The aim is to make a difference between other players, which means showing who have great trophies and who are strongest in the game. Next, gaming also turns into a sport called e-sport. Generation Y has an influence to participate for every event gaming. According to Cristiano Nabuco de Abreu in Lemos (2004), video game addiction randomly selected from 1,178 young people aged 8 to 18 showed that about 8 percent of video game players showed pathological play patterns in the United States of America.

A manuscript revealed that of a total of 816 individuals, the prevalence of video game addiction was increased to 0.6 percent, with video game problems indicating that 4.1 percent in Norway. Gender, male and young, were strong predictors of the problem of video games. Other research has shown that a range of 3 percent of video game users are addicted, most of them in male subjects (Lemos, Abreu & Sougey 2014).

In general, gaming can also negatively affect the individual how they use gaming in their daily lives. Gaming can also become a crime, involving or breaking the rules and laws established by a gaming organization. In addition to the article, video games can also be turned into games, such as games that contain rewards that users need to spend using

money and predicting in visual (Lemos, Abreu & Sougey 2014). This shows how games can influence the person in the wrong way, so that they only spend their money on games and can be a dangerous situation in which they are willing to steal money from their parents or someone else.

### ***Information Seeking Behavior***

Human behavior in the search, use and communication of information is complex. The growth of information in our society and the increasing complexity of new technologies such as interactive and web-based systems to improve knowledge and factor affect as many functions and complicated so-called information findings. Next, the information seeking behavior must pay close attention to user perception and feeling in the process of information search and use. According to Heinström (2005), some level of neuroticism, openness to experience and agreed upon significantly affect certain aspects of information behaviour. The features seem to improve the formulation, search and search that relate to the information they need.

Ingwersen and Jarvelin (2005) described this information behavior as a generation takeover of information communication and information seeking. The information sought is based on human behaviour, a strong approach to use in libraries and science files (Spink and Cole, 2005). This research focuses on the demographic factor of the information seeking activity, the process, the sources used, the relevance of the information found and the results.

In addition, information providers are individuals, groups and organizations that produce, communicate or facilitate or control access to information. In accordance with A. Robson 's and L. Robinson( 2015), there are different types of information providers, which are:

- Originators or authors of information
- Reviewers
- Publishers
- Colleagues, experts and opinion leaders
- Libraries and information centers
- Producers and suppliers of databases, websites and other computerized

According to A. Robson and L. Robinson (2015), the information products are including:

- Literature
- Databases
- Websites
- Blogs
- Presentations
- Educational materials
- Television and radio programs

For information users and providers, they operate within their own context that affect their needs, desires, goals and perception of information behaviour. The importance of information and sources is credibility. Credibility refers to perceived authority, reliability and lack of prejudice (Robson's and Robinson, 2015), a utility that is easy to use and time-saving. Utility and credibility are not an absolute nature of information or resources that vary according to the perception and environment of different users and providers. For

example, one user may find certain information that is useful and relevant, while different users consider it of little value. According to Rogers (2003), users can judge that information is more credible if they believe as their own perception rather than other facts. Based on the above literature, the following hypotheses are developed:

- H1 There is relationship between instant messaging and psychosocial well-being.
- H2 There is relationship between gaming and psychosocial well-being.
- H3 There is relationship between information seeking and psychosocial well-being.

## **Research Methodology**

Research designs are used to guide the choice of methods and procedures for data collection and interpretation. The researcher used quantitative research as a method for describing the relationship between variables. Correlation research describes the linear relationship of two or more variables without any hint of attributing the effect of one variable to another. Data were collected from multiple variables using correlation statistical techniques. In this study, correlation analysis was used to determine the relationship between compulsive internet well-being among studies. This study examines the relationship between compulsive Internet use among students and well-being in Malaysia.

According to MCMC (2017) the mode of age falls to the 20 until 24 which already covered of quarter 24.2% of the user base in the quarter. The distribution of user by broad generational band in the Malaysian Communications and Multimedia Commission Internet User Survey in 2017 statistic show a Percentage of 15.5% for pre-teens and teens up to 19 years old and 77.2% user are among adults age from 20-49 years old. Besides, convenience sampling is used in this study because the respondents are easy to sample. Convenience sampling is a non-probability sampling and it is the best option for the current study.

The sample size is determined by the population size. The sample size should be able to represent or generalize in this study. According to Tabachnick and Fidell (2003), they already create the calculation of the sample size  $n > 50 + 8(3)$ , where  $n$  is the number of independent variable for the sample and  $m$ . Since the independent variable in this study is three, the number of sample size is  $n > 50 + 8(3) = 74$ , and the total sample size that predictor variable is min. 74. However, 103 respondents participated in the study. These data have been coded and analyzed using SmartPLS version 2.0.

## **Results and Analysis**

Partial least square (PLS) technique, also known as Structural Equation Modeling (SEM), is used to analyze the data in this study. PLS-SEM can evaluate the psychometric properties using the measurement model and estimate the parameters via the structural model (Chin, 1998). Up to now, the objective of using PLS-SEM is to maximize the explained variance of the endogenous variables (i.e. Quality pledges). With reference to Anderson and Gerbing (1988), the measurement model was first determined to measure the convergent and discriminating validity, followed by an assessment of the structural model. On the other hand, the bootstrapping method (500 re-samples) was used to determine the meaning

### **Measurement model**

The measurement model consists of the relationships between the latent variables and their elements / indicators. It is necessary to establish the construct validity for the measurement model before evaluating the structural model for hypothesis testing. Items in the measurement model must demonstrate sufficient convergent and discriminatory validity as a condition for establishing a structural model (Hair et al., 2006).

### Convergent Validity

Table 1.0 presents the items loadings, average variance extracted (AVE) and composite reliability (CR) of this study.

Table 1.0 Items loadings, AVE and CR

Construct	Items	Loadings	AVE	CR			
Psychosocial well-being	PWB1	0.857	0.717	0.953			
	PWB2	0.819					
	PWB3	0.887					
	PWB4	0.846					
	PWB6	0.826					
	PWB7	0.863					
	PWB8	0.798					
	PWB9	0.874					
	Instant Messaging	IM3			0.775	0.668	0.889
IM4		0.760					
IM5		0.855					
IM6		0.874					
Gaming		GM1	0.860	0.744	0.946		
		GM2	0.861				
	GM3	0.867					
	GM4	0.886					
	GM5	0.842					
	GM6	0.859					
Information Seeking	IS3	0.849	0.737	0.918			
	IS4	0.838					
	IS5	0.891					
	IS6	0.856					

Based on the above results, the item loads of all indicators in this study ranged from 0.760 to 0.891 exceeded the required cut-off level of 0.60 (Bagozzi & Yi, 1988). In addition, the composite reliability values for all constructs ranging from 0.889 to 0.953 exceeded the threshold value of 0.70 (Hair et al., 2006), while the AVE values for each construct ranged from 0.668 to 0.744 exceeded the suggested value of 0.50 by Fornell and Larcker (1981). The convergent validity of this study has therefore been established.

### Discriminant Validity

Table 2.0 shows the latent variable correlations with square root of average variance extracted in this study.

Table 2.0 Latent variable correlations with bolded square root of the AVEs

Construct	BC	EC	PC	QP
Psychosocial well-being	<b>0.862</b>			
Instant Messaging	0.748	<b>0.818</b>		
Gaming	0.749	0.709	<b>0.859</b>	
Information Seeking	0.769	0.646	0.692	<b>0.847</b>

Note: Diagonals represent the square root of the AVEs while the off-diagonal entries represent the correlations between constructs

After convergent validity has been satisfied, discriminant validity can be tested to identify the degree to which the measurements of different constructs are distinct from each other and to evaluate the comparison of correlations between constructs with the square root of the AVE for each construct (Fornell, & Larcker, 1981). According to Table 2.0, in all cases, the elements in the matrix diagonals representing the square root of the AVEs are greater than the off-diagonal elements in their corresponding row and column, thus demonstrating that the discriminant validity is satisfactory.

### Structural Model

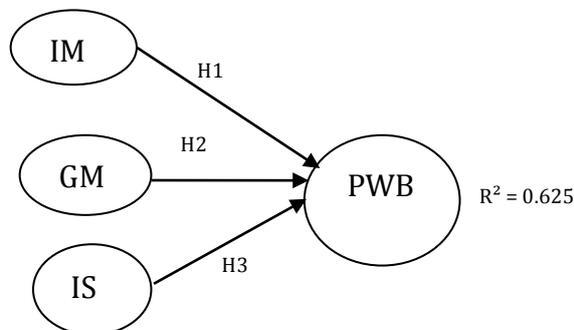


Figure 1.0 Results of the Structural Model

After the measurement model was satisfied, the structural model was analyzed. In this study, the structural model presents the hypothesized relationship between exogenous variables (i.e. instant messaging, gaming & information searching) and endogenous variable (psychosocial well-being). Figure 1.0 shows the R2 results for the structural model in this study. The explanatory power of the estimated model can be evaluated by observing the R2 of the endogenous structure. Therefore, the R2 value for this model was 0.625,

representing that 62.5 percent of the variance in psychosocial well-being can be explained by all the exogenous variables in the model.

Furthermore, based on Table 3.0, Instant Messaging ( $b=0.531$ ,  $p<0.01$ ) and Information Seeking ( $b=0.236$ ,  $p<0.10$ ) were found to have a significant effect on Psychosocial well-being. However, Gaming ( $b=0.082$ ,  $p>0.05$ ) was found to be insignificant to Psychosocial well-being.

**Table 3.0 Results of Hypothesis Testing**

Hypothesis	Relationship	Std. Beta	Std. Error	t-value	Decision
H1	IM -> PWB	0.5312	0.1001	5.3067**	Supported
H2	GM -> PWB	0.0815	0.0862	0.9447	Not Supported
H3	IS -> PWB	0.2362	0.2362	2.1346**	Supported

Therefore, based on the above results, H1 and H3 were supported, and H2 was not supported.

## Discussion and Conclusions

Based on the findings, it can be concluded that the main factor in compulsive internet use that influences student well-being among students is instant messaging, followed by information searching. This study showed that most respondents agreed that instant messaging influences student well-being. Most respondents agreed that instant messaging can enable students to communicate with others.

Based on the finding, the result can be concluded that there are significant relationships between gaming and psychosocial well-being which is ( $r=.579^{**}$ ,  $p<0.01$ ), the degree of correlation between gaming and psychosocial well-being is strong because videogame play can lead to improved mood, reduced emotional disturbance, improve emotion regulation, relaxation and stress reduction (Johnson, 2013). For insignificant relationship between instant messaging and psychosocial well-being are weak ( $r=.126$ ,  $p>0.01$ ). Lastly, the results revealed and moderate significant relationship between information seeking and psychosocial well-being ( $r=.441^{**}$ ,  $p<0.01$ ). These show students are used internet to find any information regarding their assignment and works.

## Recommendations

After conducting the research analysis, the researcher manages to make few recommendations. Based on the findings, the lowest mean for questions about the course structure is 2.70. The question was, "I always think about computer video games." Video games were not fully exposed to students how important it is to have a positive effect on students; they could also be busy with their job and have no time to play.

This is because community awareness is that video games have a negative impact on the academic level of students. Thus, the university should organize an event to raise awareness among students with a tournament and e- sport center specifically to help train the brain and release stress.

The next lowest mean is the question, "I enjoyed using instant messaging because it reduces my money spending." This showed that many students used instant messaging without productive use.

The university should play a major role by providing full support to raise awareness to avoid waste among students, which turns their waste into income generation through instant messaging. The university can develop a program that can cultivate students to become entrepreneurs at a young age, thereby reducing debt expenses during studies. Finally, the dimension for compulsive internet of information seeking has the lowest mean for question “I enjoy reading the vast information that I receive from smartphone”. This showed that students are not using enough of their smartphones to gain useful information. This situation a student and university can play a major role in encouraging the use of smartphones in the classroom specialized for university students, from which students frequently use smartphones to find access information and complete their assignment. Students should use smartphones wisely when accessing information and performing properly, students can access the Internet immediately with up- to- date information and save time. For future researchers, it is vital for them to study in different contexts, such as in western countries, to gain a better understanding of the topic of research. The result will be more interesting because of different learning and when researchers can also compare a different result to each other.

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