THE EFFECT OF INTERNET ADDICTION ON STUDENTS' EMOTIONAL AND ACADEMIC PERFORMANCE

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Abstract

In this digital age, the internet revolution substantially affected people's life. Education, economics, politics, and social fields are greatly influenced by the internet. The internet dependency has a positive and negative impact on people. For students, the teaching and learning have become easier compared to the olden days as nowadays information is at their fingertips. Despite its benefits, internet addiction may negatively impact the students' life such as on their emotional instability, depression, poor time management, and poor academic performance. Therefore, the aim of the present study is to determine the effect of internet addiction to students' academic performance and emotional instability. The emotional effect on the academic performance was also analysed. This study was conducted among 280 diploma students in UiTM, Sabah. A Partial Least Squares Structural Equation Modeling (PLS-SEM) using SmartPLS 3.0 was used to analyse the data. The results revealed all hypotheses formulated were significantly related. The results revealed all hypotheses formulated were significantly related which the results indicated that internet addiction has a positive relationship with students' emotional instability. Then, the students' emotional instability translated to a poor academic performance and the internet addiction also has a negative relationship with the students' academic performance. The empirical findings of this study will be of great significance to the followings; the lecturers and university can utilise the findings as guidelines to formulate new policy regarding internet use on campus, the results of this study can serve as a reminder and create awareness to the parents, to better control their children's internet access such as cutting the budget for broadband allowance and continuous monitoring, and can serve as an eye opener to students on negative effects of internet excessive use, thus, the students need to wisely use the internet for educational purposes.

Keywords: *Internet addiction; academic performance; emotional instability; depression*

1.0 INTRODUCTION

The evolution of digital era affected almost every aspect of modern life. The internet becomes an essential tool for people and plays a significant role in our daily life; socially, politically, economically, and even emotionally. People use the internet at work, school, and home as well as in public places to communicate, business, shop, pay bills online, entertainment, and much more. The internet can be accessed using smartphones, laptop, tablet, computer, and smart television. In 2016, the total number of internet users in Malaysia is 21.09 million or approximately 68.6% from the total population (Malaysia Internet Users, 2016). This number is expected to increase due to the remarkable progress in telecommunication technology.

Although the internet has made a significant contribution to our daily life, using too much of it will lead to addiction, which will negatively affect our life. Internet addiction is defined as the inability to control one's urge to use the internet, which eventually causes psychological, social, school, and/or work difficulties in one's life (Chou and Hsiao, 2000; Spada, 2014). Internet addiction among Asian was detected to be between 2.4% to 37.9% (Alam et al., 2014). In Malaysia, a research conducted by a Child and Adolescent Psychiatrist, Dr Norharlina Bahar, revealed that males under the age of 24 have the highest internet addiction (The Star, 2016). Students, especially the undergraduates aged between 19 and 24 years old are deemed to be more susceptible to internet addiction (Lee, 2010; Thatcher & Goolam, 2005). People who are using the internet excessively are mostly playing online games and browsing social media. The side effects of the excessiveness led to anxiety, depression, health problems, school absenteeism, lying, fatigue, unemployment, decreased job productivity, and social isolation. The addiction to the internet also could translate to low self-esteem, depression, boredom, and attention-deficit hyperactive disorder (Norharlina, 2016).

Nowadays, university students are highly depend on the internet to search for information, social networking, entertainment, online shopping, and online gaming, among others. Universities around the world are using the internet to enhance teaching and learning inside or outside the classroom. Using the internet wisely for the right purpose is beneficial to the students; such as researching tool, seeking knowledge, enhancing their soft skills, exchanging experience and knowledge with international students and other parties. While the internet has many advantages and proves to increase efficiency, it could also be harmful to the students if they become addicted to it. It may cause emotional instability (Oskenbay et al., 2015) and low academic performance (Yeap et al., 2016). Therefore, the objectives of this study are threefold: to examine the effect of internet addiction on emotional stability, to investigate the effect of emotional instability to academic performance, and to examine the effect of internet addiction to academic performance.

2.0 LITERATURE REVIEW

2.1 The Effect of Internet Addiction on Emotional Instability

Over the years, there have been numerous terminologies by different researchers to define internet addiction. Young (1996) characterised internet addiction as a wide term identifying problems arises from impulse-control and behaviour that resulted from high psychological dependency towards the internet or inability to control one's urge to use the internet. Addiction towards the internet had shown a variety of negative impact that it has towards their mood modification, availability of time, the level of tolerance, patience and judgement (Hall & Parsons, 2001; Leung, 2004). More studies were conducted later and almost every researcher conceptualised internet addiction as a compelling behaviour and cognitions directed from the use of internet which leads to anxiety and agitation in daily life (Caplan, 2003; Shapira et al., 2000). Those studies indicated that people who spent most of their time on the internet are prone to emotional disturbances, and when they were feeling anxious and agitated, their emotions influenced their

behaviour, hence, affected their relationship with others. Similarly, the researcher has identified that an individual with emotional instability is prone to have a less interpersonal skill that leads to the inexistence of social activities in their daily life (Caplan, 2003).

Emotional instability or also known as neuroticism in the Big Five Personality trait refers to the negative emotion such as anxiety, easily upset, insecurity, moody, tense, nervous, and depression. Evidence was found that internet addiction causes not only physical and social problems but creates a psychological disturbance that affects the Big Five Personality in terms of emotional instability (Hur, 2012). Numerous studies revealed that internet addiction caused depression among teenagers and adolescents (Yen et al., 2007; Yen et al., 2008). Teenagers are among the respondents that show high scores in terms of neuroticism and psychoticism temperament in previous studies (Cao & Su, 2007). The majority of research agreed that the most obvious effect of internet addiction is depression (Ho et al., 2014; Young, 1998). Addiction towards the internet is caused by the lack of attention given to an individual that cause them to avoid it by seeking attention from the internet (Ozturk et al., 2013). An individual who spent more time on the internet lacks in an offline social interaction that leads to alienation and poor relationship with friends and family (Sanders et al., 2000). As a result, they tend to be more depressed (Liang et al., 2016). Previous studies also reported that the consequences of depression are extreme tiredness, loss of energy, and concentration difficulty that may lead to feelings of hopelessness, behavioral alterations, loss of control, school failure, social isolation, and an increase in family conflict (Tonioni et al., 2012; Holtz & Appel, 2011). Therefore, this study hypothesised:

H1: Internet Addiction has a positive relationship with emotional instability.

2.2 Emotional Instability and Academic Performance

As discussed earlier, internet addiction causes emotional instability among students. Emotional instability often associated with poor academic performance (Duchesne et al., 2008). The individual who experiences emotional instability is unable to handle stress well (John & Srivastava, 1999). Students who are unable to handle their stress effectively performed badly in their exam (Khan, Altaf & Kausar, 2013). The students often have difficulties in balancing classes, tests, assignments, extra-curricular activities, and social life. Inability to handle these challenges can affect the students' physical, mental, emotional, cognitive, and behavioural functions; thus, their academic performance is negatively affected. The students with emotional instability showed anxiety and stress; therefore, they lost their motivation to engage in their studies (Noftle & Robins, 2007). Consequently, their academic performance deteriorated (Moldasheva & Mahmood, 2014).

Anxiety is one of the emotional instability symptoms. The symptoms are excessive worrying, a sense of fear, restlessness, overly emotional responses, and negative thinking. It is one of the major predictors of academic performance. Students with an anxiety disorder are not committed to their learning, for instance, they showed a lack of interest in studies, poor grades in exams or tests and on assignments (Vitasari et al., 2010). A research conducted by Hamzah (2007) found that the higher the level of anxiety among college's students, the lower their marks in their end-of-semester examination. A similar study conducted among high school students in the United States found that anxiety appeared to be the major factor in their failure in the Basic Standards Tests (McCraty et al, 2000). Other researchers also found similar results (Luigi et al., 2007; Sena, Lowe & Lee, 2007). In order words, the level of anxiety has a negative association with academic performance.

Stress, pressure or tension, are another signs of emotional instability. One study found that stress negatively related to academic performance, i.e. the higher the level of stress, the lower the academic performance (Samaha & Hawi, 2016). When the students spent excessive time on the internet, they have

limited time to study, hence, the students' stress level increased. This finding is supported by Khan, Altaf & Kausar (2013) and also consistent with previous research by Safree, Yasin & Dzulkifli (2009) who suggested that depression, anxiety, and stress are negatively correlated with academic achievement. Thus, it is hypothesised:

H2: Emotional Instability negatively related to academic performance.

2.3 Internet Addiction and Academic Performance

The internet has become an integral part of student's life. Many students used the internet mainly for educational activities, however, a number of students wasted their time by visiting inappropriate sites, unrelated to education. A study revealed that academic success was determined by how the students utilise the internet, whether it is for education purpose or non-educational activities (Li et al., 2014). The heavy usage of the internet has shown adolescents visiting chat rooms which resulted them to stay up late hence affected their focus and attention in class that leads to the deterioration of their academic performance (Leung & Lee, 2012). The studies on the effect of internet addiction on academic performance have been consistently reported on negative associations. In other words, if the students are addicted to the internet, their academic performance decreased; their study habit declined, increased in absenteeism, and skipped exams (Yeap et al., 2016).

One study conducted at a small private university in Pittsburgh, Pennsylvania found that the longer the time spend on the internet the lower the Grade Point Average (GPA) of the students (Mishra et al., 2014). Most of the time spent on the internet by students are social networking system (SNS) and online gaming activity and it shows the inability of the students to avoid misuse of the internet (Livingstone & Helsper, 2010). The internet addiction also led to academic failure and negative consequences to campus life (Chou, Condron & Belland, 2005; Douglas et al., 2008). The poor academic performance will force the students to drop out from universities or colleges (Li et al., 2003). The study among medical students at the Army Medical College, Rawalpindi, India, found that the longer the students spent time on the internet, the less their marks in the professional examination (Khan et al., 2016). A similar study among students in South Korea revealed that students who were using the internet for educational purposes obtained a better academic performance. In contrast, a lower academic achievement was associated with the misuse of the internet for a social and recreational purpose (Kim, 2011). Findings from a research done to see the correlation of internet addiction to academic performance have shown that adolescents often missed their classes and have low social skills due to the misuse of the internet (Leung & Lee, 2012).

In Malaysia, a study conducted among 175 undergraduates in a public university found that the addiction to the internet has a negative impact on the students' effort, dedication, and energy to study (Yeap et al., 2016). Another study conducted among 653 university students from different universities in Malaysia found that internet addiction badly affected the respondents' academic performances (Azizah, Marina & Marini, 2013). Thus, it is hypothesised:

H3: Internet Addiction negatively related to academic performance.

3.0 RESEARCH METHODOLOGY

3.1 Conceptual Framework and Measures

The conceptual framework of this study is shown in Figure 1. The internet addiction serves as the independent variable of the academic performance and emotional instability. The emotional instability acts as both independent and dependent variable and the academic performance is the dependent variable of this study. The questionnaire for the internet addiction is adapted and modified from the worldwide use of Internet Addiction Test (IAT) that contains 15 items as proposed by Dr Kimberly Young (a licensed psychologist and an internationally known expert on Internet addiction), also known as 'Young's Internet Addiction Test (Young, 1996). The questionnaire examines the level of internet addiction among students that ranges from personal daily life, social life, life performance, emotional feeling, and others. On the other hand, the questionnaire for emotional instability or neuroticism is adapted from the well-known Big Five Inventory (BFI) by Goldberg (1993) and John & Srivastava (1999). The are 7 items measuring the emotional instability that are related to anxiety, depression, stress, angry hostile, and other negative emotions. For the dependent variable, namely the academic performance measurement, it has 5 items adapted from Martha (2010). The five-point Likert scale was used to assess the level of internet addiction, emotional instability, and academic performance.
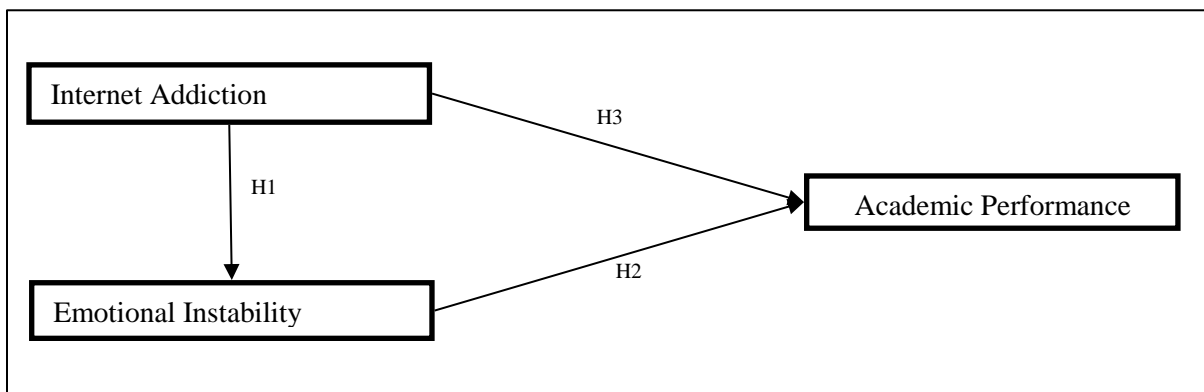

Figure 1 Conceptual Framework

3.2 Data Collection and Sample

The diploma students of UiTM Sabah were employed as the respondents of this study. A total of 350 questionnaires were distributed for a face-to-face survey and an online questionnaire was posted using Google form through a website link: https://goo.gl/forms/zm44LPb1D5VnxV7y1. The sampling technique used in this study was a convenience sampling. Independent-sample *t*-test was performed to compare means of the two sets of data from the online survey and face-to-face survey. It is found that there were no significant differences between the two groups of data with respects to demographic data and key variables.

Only 238 questionnaires were completed and usable with valid responses. As shown in Table 1, the majority of respondents were female students (70% or 196) between the ages of 18 and 20 (78.2% or 219) with most of them is in their third year (48.2% or 135). The Majority of the respondents is students from the Diploma in Public Administration course (41.8% or 117).

Table 1 Respondents' Profile (N=280)

Items	Categories	Frequency	Percentage (%)
Gender	Male	84	30
	Female	196	70
Age	18-20	219	78.2
	21-23	55	19.6
	24-26	5	1.8
	26 and above	1	0.4
Ethnicity	Kadazan/Dusun/Murut	110	39.3
	Bajau	47	16.8
	Brunei	36	12.9
	Bugis	12	4.3
	Melayu	44	15.7
	Others	31	11.1
Year of study	1st Year	67	23.9
	2nd Year	78	27.9
	3rd Year	135	48.2
Program	Diploma in Business Studies	79	28.2
	Diploma in Accounting	40	14.3
	Diploma in Planting Industry Management	26	9.3
	Diploma in Science	11	3.9
	Diploma in Tourisms Management	6	2.1
	Diploma In Public Administration	117	41.8
	Diploma in Banking	1	.4

4.0 DATA ANALYSIS AND RESULT

The present study employed the Partial Least Squares (PLS) approach to Structural Equation Modelling (SEM) using SmartPLS version 3.0. The PLS-SEM as a variance based approach was selected as it is in line with the aim of this study to examine the relationship between the variables or predictive applications (Henseler, Ringle & Sinkovics, 2009). Using covariance-based approach (CB-SEM) is for theory testing and not suitable for this research. The PLS-SEM is a variance based approach and has its advantage over the covariance approach. A covariance based approach such as AMOS is a confirmatory approach that focuses on the model's theoretically established relationships and aims at minimizing the difference between the model implied covariance matrix and the sample covariance matrix. In contrast, PLS-SEM is a prediction-oriented variance-based approach that focuses on endogenous target constructs in the model (Hair et al., 2012). Other than that, among the advantages of the PLS approach is that the technique does not require normal data distribution (Chin & Newsted, 1999). Thus, it is appropriate to use of PLS-SEM in this study, since the data have a non-normal distribution.

4.1 Reliability and validity

As shown in Table 2, the composite reliability of the constructs is between 0.833 and 0.839, which exceeded the cut value of 0.7 (Straub, Boudreau & Gefen, 2004). Thus, the results indicated a good internal consistency and satisfactory level of reliability. For validity, the convergent validity was confirmed by examining the average variance extracted (AVE), standardised factor loadings and discriminant validity. All AVE values were more than 0.5, indicating a good convergent validity (Hair et al., 2005). On the other hand, a few items were excluded from further analysis due to weak factor loadings or poor conceptual fit (less than 0.5); two items were deleted from academic performance, four items were deleted from emotional instability, and nine items were deleted from internet addiction scale. Table 3 and Table 4 illustrate the discriminant validity using cross loading and the criterion by Fornell &

Larcker (1981). As shown in Table 3, the loadings of the indicators are higher on their respective construct compared to other constructs. Thus, the measurement model is considered to have fulfilled the discriminant validity. In Table 4, the values of the square root of AVE (diagonals) were higher than the other correlations values. Therefore, the ideal discriminant validity was confirmed.

Table 2 Internal consistency, indicator reliability, and convergent validity

Construct / Items	Loading	Composite reliability (CR)	Average variance extracted (AVE)
Academic Performance (AP)		0.839	0.636
AP3	**0.713**		
AP4	**0.847**		
AP5	**0.825**		
Emotional Instability (EI)		0.833	0.625
EI2	**0.876**		
EI4	**0.744**		
EI6	**0.746**		
Internet Addiction (IA)		0.838	0.506
IA1	**0.638**		
IA4	**0.658**		
IA6	**0.813**		
IA8	**0.742**		
IA12	**0.721**		
IA13	**0.681**		

Table 3 Discriminant validity: Cross loadings

Construct	AP	EI	IA
Academic Performance (AP)			
AP3	**0.713**	-0.144	-0.167
AP4	**0.847**	-0.268	-0.261
AP5	**0.825**	-0.322	-0.116
Emotional Instability (EI)			
EI2	-0.331	**0.876**	0.146
EI4	-0.167	**0.744**	0.106
EI6	-0.223	**0.746**	0.116
Internet Addiction (IA)			
IA1	-0.116	0.141	**0.638**
IA4	-0.141	0.092	**0.721**
IA6	-0.115	0.106	**0.681**
IA8	-0.148	0.056	**0.658**
IA12	-0.177	0.064	**0.813**
IA13	-0.235	0.173	**0.742**

Table 4 Discriminant validity: Fornell-Larcker criterion

	1.AP	2.ES	3.IA
1.AP	**0.797**		
2. ES	-0.321	**0.791**	
3.IA	-0.230	0.158	**0.711**

Note: Diagonals (in bold) represent the square root of AVE while the other entries represent the correlations

4.2 Hypotheses testing

As shown in Table 5, the hypotheses testing results revealed that all hypotheses were significant and supported. Hypothesis 2 (H2) has the most significant impact on academic performance. In other words, the emotional instability has a negative effect on academic performance (β = -0.291, p < 0.01), followed by H3, in which the internet addiction negatively related to academic performance (β = -0.184, p < 0.05) and H1, the internet addiction positively related to emotional instability (β = 0.158, p < 0.01).

Table 5 Hypotheses and results

Hypot hesis	Relationship	Path Coefficient	*t* Value	P Values	Supported
H1	**Internet Addiction → Emotional Instability**	0.158	2.364	0.009	Yes
H2	**Emotional Instability → Academic Performance**	-0.291	5.261	0.000	Yes
H3	**Internet Addiction → Academic Performance**	-0.184	3.096	0.001	Yes

Note: p < .10; ** p < .05; *** p < .01

5.0 IMPLICATION

The results of this study suggested several implications for the students, parents, lecturers, and the university. First, the university may propose new rules and guidelines regarding the internet use on campus, especially on Wi-Fi. Furthermore, the university may design activities that will limit the time students spend on the internet. The university may provide a support system and counselling session, particularly for this issue. The parents also need to control their children access to the internet such as reduce the budget for broadband expenses and continuous monitoring. The lecturers need to exercise preventive action by using the latest technology in teaching and learning such as educational websites or applications, and relevant software so as to ensure the students are using the internet for educational purposes only. The lecturers should also pay more attention to students with poor performance by investigating the causes. Lastly, students need to be fully aware of the internet addiction negative effects on their emotion and academic performance.

6.0 CONCLUSION

The study's findings strongly support the generated hypotheses aim to determine the impact of internet addiction on academic performance. High level of addiction towards the internet indicates high scores in terms of neuroticism and psychoticism (Cao & Su, 2007). Emotional instability, as a result from dwelling with negative feelings such as stress, pressure, and tension (Samaha & Hawi, 2016) followed by excessive usage of the internet that led to addiction (Young, 1996), evidently have a significant impact on the students' academic performance. This study found that emotional instability has the strongest effect on academic performance (β = -0.291, p < 0.01). Furthermore, this study also revealed that internet addiction causes emotional instability that could lead to depression (Liang et al., 2016). The psychological distress felt by adolescents is correlated to the relationship that they have with their environment such as their family and friends (Hur, 2012). Therefore, parents, lecturers, and students must be attentive to the emotional conditions of their children, students, and friends, respectively. All parties must be alert to the harmful effects of internet addiction and the emotional instability issue.

Although our study shows a strong significant result, there are improvements that could be applied by future researchers. We noted that out respondents are students within the institution, hence, future research can expand this study by obtaining access to other institution so as to gain a wider perspective. In conclusion, this study helps to improve our understanding reasons to the deterioration of students' academic performance. This study provides the foundation for future research that would help educators to understand the relationship of internet addiction and emotional instability to academic performance. It provides a guideline to developed potential strategies that would enhance the students' performance by understanding their emotional state and the effect of internet addiction.

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