SMARTPHONE USAGE, SMARTPHONE ADDICTION, INTERNET ADDICTION AND NOMOPHOBIA IN UNIVERSITY MALAYSIA SABAH (UMS)

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Abstract: The aim of this study is to identify the relationships among the factors, which are smartphone usage, smartphone addiction, internet addiction and Nomophobia to the extend where how much and how each factor affects each other. The 98 respondents are from the whole UMS, Sabah campus, and are from various and different faculties and ethnic backgrounds. The smartphone usage was measured by the Smartphone Usage questionnaire which already exists and the smartphone addiction level was measured through a questionnaire from Smartphone Addiction Scale – Short Version (SAS – SV). The internet addiction level was measured through the Korean Short Version Internet Addiction Scale (KS – Scale), and lastly, the level of Nomophobia was measured through the Nomophobia Questionnaire (NMP-Q). The data were collected through Google Form and analyzed through SPSS Version 22 for Windows. The relationships among the factors, which are smartphone usage, internet addiction, smartphone addiction, and Nomophobia are found strong relationships. There is a supported relationship between smartphone usage, internet addiction, smartphone addiction, and Nomophobia.

INTRODUCTION

Smartphone, it became a must necessarily in our lives and without it, we will be having a lot of problem in present, because lots of important documents, necessities, information and so on are in that tiny and small device. Furthermore, the applications that we are using right now have

enabled us to have a much more convenient life than what our ancestors have gone through.

The internet also plays a huge role in the main function of the smartphone. And everything we do, we see, even for the things we eat can include the internet. That is how important the internet is. If there is no internet, there would be no future. There is a prediction about the internet, that is if the internet suddenly disappears, the world will fall into a big disruption.

Background Problem
Statistics showed that in 2016, 76.9% of Malaysians are using the internet and 89.4% of them access internet service via smartphone which 96.3% and 89.3% using it for communication and social networking respectively (Communications, 2017b). This indicates that there is a high dependency on the smartphone and internet service. Without the support of smartphone and internet service in people's daily life, negative emotions such as loneliness, anxiety or depression would appear due to troublesome in personal tasks.

The growth of smartphone and internet service was primarily contributed by extensive mobile broadband coverage and intense competition, which has significantly dropped the mobile broadband packages (Communications, 2017a). Hence, encourage using the smartphone.

Problem Statement
The rapid development of the smartphone industry has attracted the community especially young adults who are having urges to new smartphones and remote the smartphone. This is because they are only concern about the features of smartphone technology but not the price. The latest smartphone features become an attraction for young people. Statistics showed that about 71.4% of Malaysian will check the handphone or smartphone even when it does not ring, 51.5% and 44.8% of Malaysian indicated that handphone or smartphone is important and very important in daily life respectively (Komunikasi & Malaysia, 2014).

Besides, the internet has made a huge advance in internet culture after the smartphone was introduced people to the massive flow of the internet such as SNS (Social Network Service) and games. The ability of the internet in information gaining and the communication ability led people to use more internet. 68% of Malaysian use the internet ("The Daily Smartphone usage in Malaysia – Mataris," 2017).

Nomophobia is a term to describe the fear of staying without "Mobile". It could be related to the risen interest in 'Smartphone', but it could sound familiar for some of the employees who are working in a company that receives phone calls from their superior or somewhere. To be specific, it could be common in employees in Advertisement Company.

Research Objective
To investigate the relationship between smartphone usage, smartphone addiction and internet addiction with Nomophobia in UMS students.

Research Question
Is there a relationship between smartphone usage, smartphone addiction, internet addiction and Nomophobia in UMS students?

Research Hypothesis
There is no significant relationship between smartphone usage, smartphone addiction, internet addiction and Nomophobia in UMS students.

Significance of Study
The findings of this study hope to show the relationship between smartphone usage, smartphone addiction, internet addiction and nomophobia in our young adults.

Research Limitations
- The respondents of this research do not experience any psychological problem but at least have certain traits.

- The relationship between smartphone usage, smartphone addiction level and internet addiction level are not discussed in this study.

Theories Used

Behavioral Theory
Behavioral theory is a theory of learning based on the idea that all behaviors are acquired through conditioning which occurs through interaction with the environment. Addiction behavior is one of the examples. There are two conditioning, classical conditioning, and operant conditioning. In this paper, operant conditioning is applied. Operant conditioning is a way of learning that occurs through the reinforcements and punishments by B. F. Skinner. People are addicted to smartphone technology and internet service because of the pleasure and satisfaction gain. The pleasure and satisfaction gain is the positive reinforcement for the individual to continue the behavior of using smartphone technology and internet service. The need for positive reinforcement will increase across time and eventually an addictive behavior appeared.

Rational Emotive Behavioral Theory
Rational emotive behavioral theory is an approach based on how we think, feel and act. All three aspects are interacting together. This theory states that our cognitive or thoughts are the determining factor for our affections and behaviors. People experience negative affection is because of the false belief that is contradicting with the reality, and then perform a certain maladaptive behavior. In terms of the addiction to smartphone technology and internet service, an individual might have a false cognitive of "I need to rely on the smartphone and internet to prove my existence, or else I'll feel lonely or stress".

Maslow's Hierarchy of Needs
Maslow's hierarchy of needs states that people are motivated to achieve certain needs and that some needs need to be satisfied first before achieving a higher level of needs. There are five hierarchy levels in Maslow's concepts: physiological needs; safety needs; belongingness and

love need; esteem needs and self-actualization. The addiction to smartphone technology and internet service is grouped under the psychological needs which are belongingness and love needs and esteem needs. When an individual does not have an intimate relationship and prestige from the smartphone technology and internet service, anxiety will be experienced. And an individual is motivated to fulfill the needs in any possible way. In this context, the addiction to technology, in anything can be described in a way that it is to achieve the belongingness and intimate relationship which is not achieved in real life.
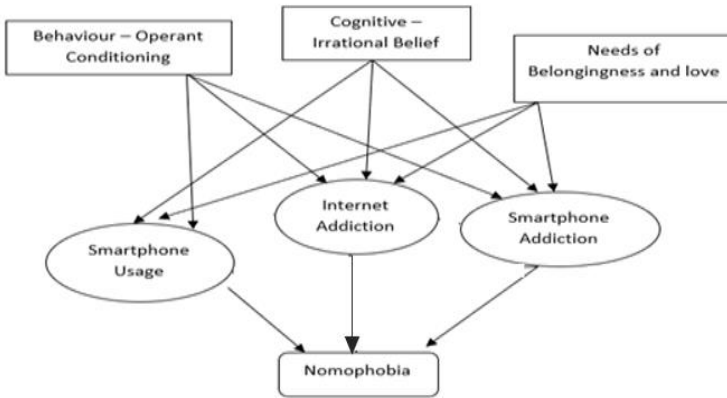
Theoretical Framework

Figure 1: Research Model on Smartphone Usage, Smartphone Addiction, Internet Addiction and Nomophobia Based on Theory of Behavioural, Cognitive and Maslow's Hierarchy of Needs

Figure 1 shows the model of the relationship between independent variables with the background of theory applied in the study and the dependent variables. The independent variables are individual's smartphone usage, smartphone addiction, and internet addiction; the dependent variable is an individual's Nomophobia. Each independent variable of this study is explained by three theories, Operant Conditioning, Irrational Belief and the Needs of Belongingness and Love, which contribute to an individual's emotion, Nomophobia.

METHODOLOGY

Research Study Design

This is the quantitative type of study which aim is to identify the relationship between smartphone addiction, internet addiction and nomophobia in young adults. The research population is University Malaysia Sabah (UMS) undergraduates. Simple random sampling is used for this study and from the whole sets of sampling, 98 students responded to the questionnaire that has been formulated. The questionnaire is distributed to research respondents via Google form. The data is collected in Google spreadsheets and is then exported to SPSS. Analysis techniques used in this research included correlation and multiple regression to answer this research paper objective.

Smartphone Usage

This questionnaire is comprised of questions regard to smartphone usage. It has 17 questions altogether, 8 of them are in Likert Scale. The Likert Scale is 1 to 7, which indicates "Strongly Disagree" and "Strongly Agree".

Smartphone Addiction Scale-Short Version (SAS - SV)

The question is aimed at testing out the level of addiction or attached level towards Smartphone. This questionnaire contains altogether 10. And the internal consistency and concurrent validity of SAS were verified with a Cronbach's Alpha Level of .911, which indicates that it has "Very Good Reliability". Likert Scale for SAS – SV varies from 1 to 6, which are 1, strongly disagree and 6 strongly agree.

Korean Self-Reporting Internet Addiction Scale Short-Form Scale (KS-scale)

The questions are aiming at identifying the severity of addiction on the internet. There are 20 questions for this questionnaire and the questionnaire was adapted from the original research article of "KS – Scale". Additionally, the Cronbach's Alpha level is shown as .909., which indicates the reliability is "Very Good". Likert Scale for this questionnaire varies from 1 to 4, which are Strongly Disagree and Strongly Agree accordingly.

Nomophobia Questionnaire (NMP-Q)

This questionnaire is used to show whether the person is "Nomophobic" or not. Nomophobia is a term to describe the horror when without mobile. This questionnaire comprises 20 questions altogether and the questionnaire was taken from the original research article on "Nomophobia". This questionnaire showed the Cronbach's Alpha Reliability Coefficient for Internal Consistency of the questionnaire is .945, which is considered as "Excellent" for reliability coefficient according to George and Mallery (2016). Likert Scale for this questionnaire varies from 1 to 7, which are Strongly Disagree and Strongly Agree accordingly.

Data Analysis

For quantitative data, it is analyzed to obtain information from the respondents after answering a questionnaire. Before data analysis, a set of questionnaires collected and reviewed to ensure that respondents are required to comply with the instructions. For analysis, SPSS Version 22 for Windows will be used. They will be summarized using appropriate inferential statistics based on the objective stated above.

Inferential Statistics

The inferential analysis will be conduct by correlation to answer the research objective. Multiple linear regression techniques are applied for the prediction of Nomophobia based on smartphone usage, smartphone addiction and internet addiction.

RESULT

Relationship between Smartphone Usage, Smartphone Addiction, Internet Addiction and Nomophobia

Table 1: Pearson Correlation and Significance of The Relationship Between Smartphone Usage, Smartphone Addiction, Internet Addiction and Nomophobia level

There is no relationship with Nomophobia	Pearson Correlation	Significance	Result
Smartphone usage	0.708	0.00	Reject
Smartphone addiction	0.728	0.00	Reject
Internet addiction	0.737	0.00	Reject

Significance Level = 0.05

From the table 1, there is a strong significant relationship between smartphone usage and nomophobia level, which the Pearson correlation recorded .708 with $p < .05$. There is a strong significant relationship between smartphone addiction level and nomophobia level, which the Pearson correlation recorded .728 with $p < .05$. There is a strong significant relationship between internet addiction level and nomophobia level, which Pearson correlation recorded .737 with $p < .05$.

Table 2: Model Summary

Model	R Square	Adjusted R Square	Std. Error of the Estimate	R Square Change	F Change
1	0.543	0.538	1.01214	0.543	114.107
2	0.627	0.619	0.91904	0.084	21.437
3	0.649	0.638	0.89597	0.022	5.954

Table 3: Coefficients[a] of Smartphone Usage, Smartphone Addiction, Internet Addiction and Nomophobia

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	0.450	0.364		1.235	0.22
	Internet Addiction	1.713	0.160	0.74	10.682	0.00
2	(Constant)	0.023	0.344		0.068	0.95
	Internet Addiction	1.030	0.207	0.44	4.971	0.00
	Smartphone Addiction	0.587	0.127	0.41	4.630	0.00
3	(Constant)	-0.343	0.367		-0.935	0.35
	Internet Addiction	0.930	0.206	0.40	4.512	0.00
	Smartphone Addiction	0.447	0.136	0.31	3.276	0.00

Smartphone Usage	0.538	0.220	0.20	2.440	0.02

Table 4: ANOVA Results on Multiple Linear Regression Model

Model		Df	F	Sig.
1	Regression	1	114.107	0.00
	Residual	96		
	Total	97		
2	Regression	1	79.918	0.00
	Residual	95		
	Total	97		
3	Regression	1	58.041	0.00
	Residual	94		
	Total	97		

The model of Nomophobia level based on internet addiction, smartphone usage and smartphone addiction (Model 3) shows that $\beta = 0.40; 0.31; 0.20$, $(94) = -0.935$, $p < .05$. A significant regression equation was found F $(1,94)$ = 58.041, $p < .05$, with R^2 of .649. Model 3 regression equation is shown below:

Nomophobia Level = (0.930*Internet Addiction Level) + (0.538*Smartphone Usage) + (0.447*Smartphone Addiction Level) – 0.343

DISCUSSION

Relationship Between Smartphone Usage, Smartphone Addiction, Internet Addiction, Nomophobia in UMS Students
From the results, we know that there is a strong significant relationship between smartphone usage and nomophobia. The positive value of the Pearson correlation indicates that the higher the smartphone usage, the higher the nomophobia, significantly. The findings of this study are the same as the study carried out by Ali, Anuar & Muda, Mariah & Ridzuan, Abdul Rauf & Nuji, Mohd Nur Najmi & Hamzani Mohamed Izzamuddin, Mohamed & Imma, Dzama (2017), on the relationship between phone usage factors and nomophobia indicated that all mobile phone usage

factors (fear of inability to communicate, fear of loss connectedness, fear of being alone and fear of loss convenience) have significant relationship with nomophobia. The relationship between smartphone usage and the Nomophobia level is supported.

The relationship between smartphone addiction and the Nomophobia is significantly strong. The positive value of the Pearson correlation indicates that the higher the smartphone addiction level, the higher the Nomophobia. Besides, the relationship between smartphone addiction and the Nomophobia is supported. The findings of the relationship between internet addiction and the Nomophobia showed a strong significant relationship. The positive value of the Pearson correlation indicates that the higher the internet addiction, the higher the Nomophobia Additionally, the relationship between internet addiction and the Nomophobia is supported. In short, internet addiction showed the strongest positive relationship with an individual's Nomophobia. This means that internet service influences individuals the most on social anxiety called Nomophobia. However, the smartphone plays a role as it is the delivery device of internet service. Indirectly, smartphone technology can lead an individual to anxiety.

Model 3 of multiple linear regression equation has 64.9% of the variance in Nomophobia can be explained by the smartphone usage, smartphone addiction and internet addiction. This model is the best predictor on the Nomophobia because it has the highest percentage.

Based on rational emotive behavior theory, the irrational belief system of an individual may be 'I need to use a smartphone or else I'll experience anxiety and stresses'. The anxiety experienced by an individual is social anxiety called Nomophobia. Nomophobia can impact several aspects of an individual such as health, work, and study (Dasgupta et al., 2017). Hence, a suggestion for a Nomophobic individual is to seek professional counselors, clinical psychologist or psychiatrists for intervention. A Nomophobic patient was treated with medication and cognitive-behavior psychotherapy showed a significant medical improvement in his panic disorder and phobia, but there has been no change in his Nomophobia

(Anna Lucia S. King, Valença, & Nardi, 2010). Therefore, further study on the Nomophobia intervention and psychotherapy should be conducted.

CONCLUSION

The inferential analysis shows that all of the factors, which are smartphone usage, smartphone addiction, and internet addiction have a strong relationship with the Nomophobia. Additionally, no further analysis of data was brought forward for the reason that there are not plenty number of students in the various background and for this reason, the comparative analysis could not be further processed. However, for the future research that will be conducted, it is suggested that the researchers research the study in the relationship among smartphone usage with smartphone addiction and internet addiction should be carried out in the context of Malaysia. The further study is significant because we can identify the root cause of the Nomophobia in society.

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