



A STUDY OF THE RELATIONSHIP BETWEEN SMARTPHONE ADDICTION AND
LONELINESS AMONG MALE AND FEMALE UNDERGRADUATES IN UTAR

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Approval Form

This research paper attached here to, entitled: “A Study of The Relationship between Smartphone Addiction and Loneliness among Male and Female Undergraduates in UTAR.” was prepared and submitted by Wong Kok Chern, Tho Fang Lan, and Sin Hui Ning in partial fulfillment of the requirements for Bachelor of Social Science (HONS) Psychology is hereby accepted.

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Abstract

The aim of this study is to examine the relationship of smartphone addiction, loneliness and gender differences. To collect data; demographic questionnaire, Smartphone Addiction Scale–Short Version (SAS-SV) and UCLA-Loneliness (Version 3) were applied for among 297 undergraduate's students in Universiti Tunku Abdul Rahman, Kampar campus. To analyse these data; correlation and t test were used. Results revealed that smartphone addiction was significantly related with loneliness. Furthermore, there were no significant gender difference in smartphone addiction and loneliness. However smartphone addiction is positively related to loneliness. While the study shows that smartphone addiction are positively related to loneliness in females undergraduates, on the other hand it has no correlation in males undergraduates. The higher smartphone addiction levels will lead to higher loneliness level. The results of the study were discussed together with the results of different studies and the limitations and recommendations were made.

Keywords: smartphone addiction, loneliness, gender difference

Declaration

We declare that the data and material presented in this research study are the end result of our own work and that due to acknowledgement has been given in the bibliography and references to ALL sources, whether they are electronic, printed or personal.

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List of Abbreviations

SAS-SV Smartphone Addiction Scale – Short Version

SPSS Statistical Package for Social Science

UCLA-version 3 UCLA Loneliness Scale – Version 3

UTAR Universiti Tunku Abdul Rahman

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Chapter I

Introduction

Background of Study

Good effects of technology are providing such convenient daily life towards human beings. However, it also gives the people and society bad effects such as technology addiction. Smartphone addiction is one of the severe technology addictions which had become serious problems these days especially to teenage (Park, Hyun, Kim, & Lee, 2014). Smartphone addiction drives people to check their smartphone frequently and compulsively, no matter what situations for example meetings, walking or even during eating (Davis, 2012). Smartphone addiction can be defined as a state of being locked up to smartphone and its facility (Davis, 2012). Smartphone addiction is closely related to internet addiction (Kwon, Kim, Hyun, & Yang, 2013). Internet and mobile phone addicts both have an unhealthy lifestyle and similar personalities (Chiu, Hong, & Chiu, 2013). Wang, Lee, and Chang (2003)'s finding shows that the degree of internet addiction has significant relationship with loneliness. Besides, study of Engelberg and Sjöberg (2004) found that internet usage is significant related to loneliness.

There are some symptoms that will be showed by people who have smartphone addiction. Earlier studies of smartphone addiction shows three different characteristics of mobile phone addiction (Roos, 2001). The first one is people who are addicted to smartphone will make sure their smartphone always on. The second characteristic is tend to use smartphones even their home have house telephone while the last characteristic is faced with financial and social problems due to their over usage of smartphone (Roos, 2001).

Although the previous studies had paid a lot of attentions and awareness on smartphone addiction, there are some surveys had particular studies of effects on face-to-face communication caused by smartphone addiction (Casey, 2012). The most severe problem

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found is lacking of face-to-face communication between people when they tend to over use of smartphone or addicted to smart phone (Casey, 2012). Previous research had discovered people who have higher possible to be addicted to dissimilar materials are those people with loneliness and shyness (Casey, 2012). Therefore, there's a researcher studied whether smartphone addiction symptoms can be explained by loneliness and shyness (Casey, 2012).

Nevertheless, Casey (2012) stated that smartphone addiction may cause someone to feel lonely. This is because loneliness is an undesirable feeling that derives from inconsistency between wished and accomplished levels of social connection (Perlman & Peplau, 1981). Smartphone addiction might influences the way people communicate and causing social stress (Perlman & Peplau, 1981). People who tend to have higher level of nervous and afraid to see people face to face as well as present into social directly mostly cause with their high levels of social stress (Bolle, 2014). However, people in this modern century who addicted to smartphone because of other functions, applications and characteristics on the smartphone such as reading books online, surfing on Facebook, Twitter, Instagram and playing online games. They tend to overindulge and focus in their smartphones until ignore who they are with in person (Casey, 2012). Furthermore, through smartphone, people can easily communicate with others by individual to individual and concurrently sending short message service (SMS) or using smartphone communication tools rather than face-to-face communication (Casey, 2012). Hence, smartphone addiction may influence an individual apt to have loneliness.

There is a previous study among Korean college students on smartphone users with high and low addiction trends which showed the result of more females were having high level of smartphone addiction (Park & Lee, 2014). Females also showed have high preference of smartphone activities. Female students who showed higher level of smartphone addiction tend to have higher loneliness score (Park & Lee, 2014). The same researchers which are

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Park and Lee (2014) had also conducted another survey on gender differences in Social Networking on Smartphones (Park & Lee, 2014). The results revealed that females regularly use smartphone's camera than males, whereas males are more probable to use phone calling and smartphone applications compare to female (Park & Lee, 2014). While gender differences in loneliness was unpredictable because there are some researches showed no gender differences in loneliness because men and women use different criterions while valuing their loneliness (Stokes & Levin, 1986). While evaluating loneliness, male focus more group-oriented, while women emphasis more on the qualities of one-to-one relationships (Stokes & Levin, 1986). There are also another research showed that males scored higher level of loneliness than woman (Borys & Perlman, 1985) and some researches showed female scored higher in loneliness than males (Al Khatib, 2012).

Problem Statement

TNS Malaysia Connected Consumer Study (2014) found that smartphone is the most commonly used connected device in Malaysia (MCMC, 2014). In recent years, the number of people addicts to smartphone had increases in Malaysia. In 2014, survey of TNS/Google Global Connected Consumer which has involved 150000 participants across 56 countries shows that there is one own a smartphone in every two Malaysian adults (Lee et al., 2015). Besides, Malaysia is the top five countries in the statistic of mobile internet usage via smartphone in selected Asian countries 2012 which shows 75% of smartphone users in Malaysia accessed internet in the past 30 days (Statista, 2015). In the Hand Phone Users Survey (HPUS) 2014 provided by Malaysia Communication and Multimedia Commission (MCMC), among the 2401 hand phones users, 71.4 percent of them keep checking their phones even when it does not ring. Apart from that, 51.5 percent users think that hand phones is very important to them (MCMC, 2014).

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Addicts to smartphone can be problematic to smartphones users. People with smartphone addiction may experience maladaptive behavioral difficulties such as impulse control disorders in general or pathological gambling (Mok et al., 2014). It can also harm the physical health of users which included vision become blurring and pain at some body part such as wrist and neck (Mok et al., 2014). Findings of Van den Bulck (2003) had suggest that excessive use of mobile phones can cause disturbance in sleeping patterns of adolescent. Smartphone addiction also cause a reduce in physical activity such as walking (Kim, Kim, & Jee, 2015). It have adverse health consequences by increase fat mass of smartphone addicts people (Kim, Kim, & Jee, 2015).

Loneliness also found to be significant link with smartphone addiction (Bian & Leung, 2014). As ones scored higher in loneliness, ones have higher chance to be smartphone addicts (Bian & Leung, 2014). This relationship shows clear implication for treatment and intervention (Bian & Leung, 2014). The attitude and behavior of participants can be much different between individualistic and collectivistic cultures (Schultz, 2002). There are differences in the attitudes of participants even within countries (Schultz, 2002). According to Baron and Segerstad (2009), cultural differences between countries may form difference mobile phone activity. However, even when countries shared similar culture, it also report significant differences in mobile phone performance (Baron & Segerstad, 2010). As a result, it is important to examine the relationship of loneliness and smartphone addictions that are in Malaysia as Malaysia have different culture with other countries.

Apart from that, we found that in some research, men are scored higher than woman in loneliness (Borys & Perlman, 1985). However, in a research, female scored higher in loneliness (Al Khatib, 2012) whereas there is another research shows there is no gender differences in loneliness (Al-Kadoumi, Sawalha, & Momani, 2012; Gürsoy & Bıçakçı, 2006). The gender different of internet addiction in students show boys have a higher prevalence of

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internet addiction than girls (Khan, Salim, Bilal, Hussain, & Haseeb, 2014) whereas a research shows woman have higher internet addiction than men (Okтуѓ, 2012). In smartphone addiction, female spend more time on smartphone compare than male (Bolle, 2014). There is also researcher argued that gender differences is weak predictor of problematic mobile phone (Okтуѓ, 2012). However, the Asian countries show severe gender differentiation than western countries such as Japan (Okтуѓ, 2012). The inconsistent result of gender differences in smartphone addiction and loneliness proved the need of clarification. That is why this research focuses on gender differences.

Significance of Study

Firstly, the significance of our study in the field is help to provide the information on how severe smartphone addiction influences our day-to-day lifestyle and the effects of addicted to smartphone would also affect individual in a lot of things. According to the website “Malaysian Journal of Psychology”, there is less journals talk about the relationship between smartphone addiction and loneliness in Malaysia. Since there are few studies about the relationship of smart phone addiction and loneliness to be referenced by researchers who are going to have further study on relevant topic, therefore we decided to study on this topic. We are hoping our study can be referencing and beneficial to who are going to have future study on relevant topic.

Other than that, this study would be beneficial to society as this study provide us the information on the relationship between smartphone addiction and loneliness. Besides, we hope this study able to deliver knowledge to the public and society so that they have the opportunity to know the significance of smartphone addiction as well as loneliness. According to reported news in “Mail Online”, the key indicators of smartphone addiction consisted of moodiness, loneliness and jealousy (Osborne, 2015). The news also reported that

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addiction to smartphone might lead people to lose job and relationship (Osborne, 2015). Studies showed that the more high level of smartphone addiction, the more one scored in loneliness (Bian & Leung, 2014). Through this study, we expect can heighten the awareness of public and figure out the strategies and interventions to help those with smartphone addiction to reduce their sense of loneliness.

According to news that reported in “the star online”, smartphone addiction was act as the core problem of marital issues (Lim, Wong, Zolkepli & Bedi, 2012). Therefore, one of the purposes of our study is to bring out the awareness of how serious is the smartphone addiction problems in our country. According to Dr Dale Archer, people with smartphone addiction will press their smartphone even though they are driving. Compare to people who drive in drunken condition, it is said that 6 times more dangerous (Archer, 2013). Besides that, people will have higher risk to get brain cancer, even they are using smartphone for merely half an hour per day throughout ten years (Williams, 2015). Throughout our study, we hope to be able to spread out the knowledge and information to the public and society so that they realize the consequences and the importance of reduce smartphone addiction as well as taking suitable action at the same time receive proper treatment from professional psychologist.

Besides that, our study also showed the important of reduce loneliness among society. Loneliness is also a kind of psychopathology which lead to a very wide-ranging of disorders such as depression and suicide, stress, antisocial behaviour as well as alcoholism and drug abuse (Cherry, 2015). Another research showed that loneliness have significant relations with depression (Yaacob, Juhari, Talib & Uba, 2009). Lonely people report higher levels of stress even when facing to the same stressors as non-lonely people (Marano, 2003). The feelings of isolation and deprived will tear away people emotional well-being as well (Marano, 2003). Therefore, if the loneliness in society does not been reduced, some people suffer from loneliness would tend to suicide but not looking for help or support (Douthat, 2013). Hence,

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we wish to raise awareness among undergraduate students and hope that appropriate actions could be taken by future psychologists to deal with such behavior.

Last but not least, according to previous studies, males tend to have higher level of loneliness than females (Borys & Perlman, 1985; Wiseman, Guttfreund, & Lurie, 1995). However, there are some other researches stated that females' loneliness level were higher than males' (Al Khatib, 2012). On the other hand, the website "Malaysian Journal of Psychology" shows less journals on gender difference in smartphone addiction that had been studied in Malaysia. Hence, through our study, we wish to help and benefit future researcher as reference on relevant topic and also bring out the awareness to the particular gender which score higher level of loneliness and smartphone addiction.

Objective of Study

This study consists of three main objectives. First of all, we want to determine the relationship between loneliness and smartphone addiction among undergraduate students in UTAR. Secondly, is to find out gender differences in loneliness among undergraduate students in UTAR. The third is to find out gender differences in smartphone addiction among undergraduate students in UTAR. At the end of the study, we able to examine the significant gender differences in relationship between loneliness and smartphone addiction among undergraduate students in UTAR.

Definition of Words

Loneliness. The term "Loneliness" can be defined as a social deficiency. Loneliness is an undesirable feeling that derives from inconsistency between wished and accomplished levels of social connection (Perlman & Peplau, 1981). Loneliness is the displeasure experience and feelings that take place when an individual's social relation networking is

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incomplete (Perlman & Peplau, 1981). In Loneliness there is three general points to be noticed. First, loneliness is stressful and unpleasant; second, the person's social relations network deficiency will cause loneliness; third, loneliness is an individual phenomenon which means it is different with objective isolation, so that people can be alone without being lonely (Perlman & Peplau, 1981).

Smartphone Addiction. The terms “Smartphone addiction” has been used to define a phenomenon, which is individual engrossed in their Smartphone use to the degree that they are neglecting the other life’s important areas (Al-Barashdi, Bouazza, & Jabur, 2014). It is a situation where a person would over rely on his or her smartphone for all the numerous day to day activities and not aware or concentrating on anyone else who near to him or her. The person who is involving in smartphone addiction can be predicted by the amount of phone bills and the unforeseen behavior in case when his or her phone is missing or losing (Bhardwaj & Ashok, 2015).

Theories of Study

Bronfenbrenner (1979) Ecological System Theory emphasis the environmental influences in human development. Five levels of context development that influences within and among system have organized by Bronfenbrenner. He proposed that microsystem refers to immediate context that individual developing through face to face situation such as family and school (Bronfenbrenner, 1994). In this study, microsystem is focused to analyze the relationship of loneliness with smartphone addiction in individual. Loneliness is complex emotion experience when one’s social relationships perceived are deficient (Peplau & Perlman, 1982) whereas emotion is one of the domain in Bronfenbrenner’s microsystem (Krishnan, 2010).

Johnson and Pupilampu (2008) proposed ecological techno-subsystem into microsystem. They highlight the important of techno-subsystem in influencing child

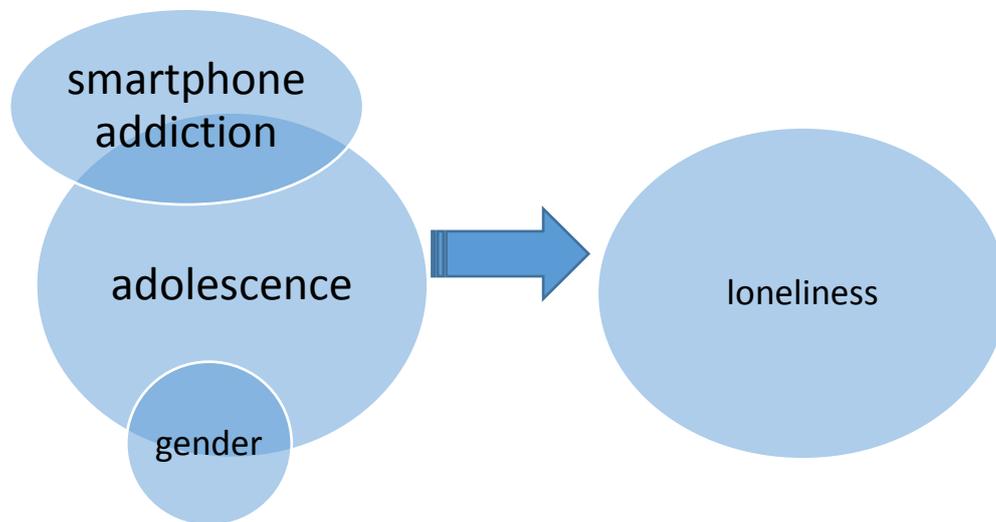
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development. They refine Ecological System Theory by include the child interaction with both living (human) and non-living things (technology product) in their immediate context. They argued that techno-subsystem have theoretically mediated the impact of non-living things on children development in microsystem (Johnson & Puplampu, 2008). The techno-subsystem included the use of computer, internet, telephone, television, cell phone, e-books and portable audio and video devices (Johnson & Puplampu, 2008). It provides a theoretical framework for examine the relationship of future technological advances with future generation (Johnson & Puplampu, 2008).

Smartphone is non-living immediate setting that influences the domain of individual in social, emotional, cognitive and physical through interaction between bio-ecology (child characteristics) and techno-subsystem (smartphone) in microsystem (home, school and community environment) (Cenameri, 2013). According to journal *Internet Use and Child Development: The Techno-Microsystem*, they test the theoretical utility of techno-subsystem by examine the children development through placing children in three difference environment and collect the description of the children Internet uses at each environment. The environment included home, school and community area. Results found that children with different internet use in different context have different children development which included social, emotional, cognitive and physical development. Results have supported the theoretical of techno-subsystem (Johnson, *Internet Use and Child Development: The Techno-Microsystem*, 2010). However, Johnson's study that request children to do self-report rating scale on internet uses in different contexts may have bias because mean age of children is only 10 years old. Furthermore, the evaluation of children development by parent and teacher might also bias because of their expectation on children. So, in this study, the utility of techno-subsystem will be examined by carry out research focus on the relationship of specific bio-ecological of undergraduates students (gender and loneliness) with non-living element

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(smartphone addiction) regardless of environment. It avoids the self-report bias of children, bias from teacher and parents and differentiation of environment.

**Research Question and Hypotheses**

1) Is there any significant gender differences in loneliness among undergraduates' students in UTAR?

H1: There are significant gender differences in loneliness among undergraduates' students in UTAR.

H0: There are not significant gender differences in loneliness among undergraduates' student in UTAR.

2) Is there any significant gender difference in smartphone addiction among undergraduates' students in UTAR?

H1: There are significant gender differences in smartphone addiction among undergraduates' students in UTAR.

H0: There are not significant gender differences in smartphone addiction among undergraduates' student in UTAR.

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3) Is there any significant relationship between loneliness and smartphone addiction among undergraduates' students in UTAR?

H1: There is significant relationship between loneliness and smartphone addiction among undergraduates students in UTAR.

H0: There is no significant relationship between loneliness and smartphone addiction among undergraduate's students in UTAR.

4) Is there any significant gender differences in the relationship between loneliness and smartphone addiction among undergraduate's students in UTAR?

H1: There are significant gender differences in loneliness among undergraduates students in UTAR.

H0: There are no significant gender differences in loneliness among undergraduates students in UTAR.

Chapter II

Literature Review

Smartphone Addiction and Loneliness

In India, Dr. Mrunal Bhardwaj and Miss. Sode Jaimala Ashok (2015) examined mobile phone addiction and loneliness among teenagers. Random sampling method was used by researchers to select the sample which were 100 teenagers from different colleges in Mumbai city, Maharashtra. Out of the sample, there were 50 male students and 50 female students. The age range was 13 to 17 years. Survey model has used to administer the subjects. The survey is designed to evaluate the mobile phone addiction scale (Mobile Phone Addiction Scale (2012)), loneliness score (Loneliness Inventory (2010)), and personal information form. Correlation and T-test were calculated to analyse the data. Results revealed that there was a significant correlation found between the mobile phone addiction and loneliness among college students. Mobile phone addiction was significantly related with loneliness. Besides, there was no any significant difference found in the study when loneliness and mobile phone addiction among college students were examined according to gender.

In Japan, Satoko Ezo¹ and Masahiro Toda (2013) had done a study on investigating the factors of contributing to Internet addiction. The sample were involving 105 Japanese medical students (40 males, 65 females) who are from Faculty of Medicine at Shimane University, Japan. Ages of 19.3 ± 2.0 were the mean (\pm SD) ages for the males while 18.7 ± 1.0 years for the females. Self-reporting questionnaire is used to administer the subjects. The questionnaire is designed to evaluate demographic factors, Internet addiction (Young's Internet Addiction Test), loneliness (UCLA-Loneliness Scale -Version 3), mobile phone dependence (Mobile Phone Dependence Questionnaire), depressive state (Beck Depression

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Inventory-II), health-related lifestyle factors (Health Practice Index), and patterns of behaviour (Tokai University Type-A Pattern Scale). The possible associations between Internet addiction and each factor such as demographic characteristics, loneliness, depressive state, health-related lifestyle, patterns of behaviour, and mobile phone dependence were identified by using Univariate and subsequent multivariate logistic regression analyses. According to the study, there was a significant positive correlation between Internet addiction and mobile phone dependence. Besides that, it was a significant positive correlation between loneliness and Internet addiction. As the result, the research showed that mobile phone dependence and loneliness were positively associated to level of addiction (Ezoel & Toda, 2013). The outcome of this study is showing that Internet addiction is associated with mobile phone dependence and loneliness among Japanese students. However, their multivariate logistic regression analysis results showed that depressive state was not significantly related to Internet addiction (Ezoel & Toda, 2013).

On the other hand, in Turkey, previous research named “Loneliness and Mobile Addiction”, authored by Cetin Tan, Mustafa Pamuk, and Aysenur Donder (2013), they aimed to examine level of loneliness according to gender, daily phone use time, and mobile phone addiction among university students. Data were gathered from 527 students who were from Firat University, Turkey. They are from different Departments of Faculty of Education. 372 (70.5%) of the students are female, 155 (29.5%) of them are male, average age of students is 20.8. All of participants had mobile phone (100%). Survey model is used in this research. The survey is designed to gather data, such as personal information form, UCLA-loneliness scale (UCLA-LS), and Problematic Mobile Phone Use Scale (PMPUS). Correlation, one way variance (ANOVA), and T-test were used to analyse the data, and Scheffe’s test was used to find out the differences among groups. Results revealed that when loneliness of university students was examined according to gender, loneliness scores of male students were found

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higher than the scores of female students. According to added finding of this study, there was a significant difference between university students' loneliness and mobile phone daily usage. Furthermore, university students' loneliness was significantly related with problematic mobile phone use. There was a significant difference between mobile phone addiction and university students' loneliness (Tan, Pamuk, & Donder, 2013). The students' loneliness scores were found to be higher than those students of non-addicts, compare to the students who have been addicted to mobile phone.

In China, Bian Mengwei Casey (2012) conducted a research titled "Linking Psychological Attributes to Smart Phone Addiction, Face-to Face Communication, Present Absence, and Social Capital". The purpose of the research is to classify symptoms of smart phone addiction that are uniquely related with smart phone usage. It was also examining the relationships among psychological attributes (such as shyness and loneliness), smart phone functions, Smart phone addiction symptoms, face-to-face communication, and present absence. The subjects are among university students in mainland China. Snow ball sampling was used to gather the data and through online questionnaire on sojump.com. The sample was including 565 university students who aged lower than 30 in mainland China. Among the 565 completed questionnaires, 478 of them are smart phone users. However, 64 of the respondents are excluded. It is because the respondents were repeating submission; or submitting the questionnaire within 2 minutes which is unable to provide clear and correct information, which is impossible to finish reading each question normally; or choosing different answers to two questions which are containing the similar meaning; or the respondents are over 30 years-old (Bian & Louis, 2014). Therefore, 414 university students were the total valid sample size. In the total valid sample, there was consisting of 159 males (38.4%) and 255 females (61.6%) (Bian & Louis, 2014). To measure smart phone addiction in this research, 27-item Mobile Phone Problem Use Scale, 20-item Internet Addiction Test,

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and 35-item Television Addiction Scale were applied in the questionnaire. A short-form of Revised UCLA-Loneliness Scale-Version 3 was used to assess loneliness. A linear regression analysis was used to assess how smart phone use influenced by demographics, psychological attributes (such as shyness and loneliness), and symptoms of smart phone addiction. Furthermore, the predictive power of the two psychological variables on the five dimensions of the symptoms of smartphone addiction was examined by Regression test. Finally, the relative influence of psychological attributes (such as shyness and loneliness), smart phone usage, symptoms of smart phone addiction, present absence, and face-to-face communication were compare by using a pair of hierarchical regression analyses on bonding and bridging social capital. Results revealed that those university students who scored high on loneliness and shyness will have the higher likelihood in addicted to smart phone.

Last but not least, in U.S. state of California, Nichol Elise Myers (2013) examined the connection between social isolation, GPA, and cell phone usage among college students. The study examined social isolation's levels in terms of level of loneliness, traits of shyness, and their correlations with academic performance. Convenience sampling was used to recruit 206 community colleges and universities students with 18+ years of age. The sample was taken from Allan Hancock College in Santa Maria, CA and California Polytechnic State University in San Luis Obispo. 38.5% of the sample were male while 61.5% were female. The researcher used Revised Cheek and Buss Shyness Scale (RCBS) to measure the trait of shyness, De Jong Gierveld Loneliness Scale (JGLS) to measure social and emotional loneliness, and self-reported way to report cell phone usage. To examine the relationships between variables, Correlational Analysis was conducted. The results showed that there was some evidence to support the negative relationship between the number of calls received by peers ($r = -.12$) and a positive relationship between levels of loneliness and communication with family members ($r = .13$). However, both correlational values were not significant. As

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the conclusion, result of the study revealed that there is no significant relationship between cell phone usage and loneliness (Myers, 2013).

Gender Differences in Loneliness

Previous study “Social-Emotional Loneliness and Life Satisfaction” had been conducted on a sample of 396 university students which 172 are male students and 224 are female students from Shiraz University by Salimi (2011). In this study, Salimi (2011) was using the Demographic Information Form; (SWLS) the Satisfaction with Life Scale and (SELSA-S) the short version of Social and Emotional Loneliness Scale for Adults to examine gender differences in loneliness and also how life satisfaction been affected by social and emotional loneliness. The data collected was analysed by using independent t-test and the result revealed there are gender differences in level of loneliness in students. The result showed that female students’ emotional loneliness level of were significantly lower than male students (Salimi, 2011). Salimi (2011) explained that female students will discuss the feelings and share with their friends more regularly compare to male students who keep their feelings under control. On the other hand, compare with female students, male students do not express their sadness such as crying and experience the higher level of loneliness. Female students is easier in self-disclosure and it is needed to develop close and intimate relationships (Salimi, 2011). Therefore, males have more emotional loneliness than females (Salimi, 2011).

From journal titled “Relationship between gender traits and loneliness: The role of self-esteem”, result of the research had shown that individuals’ loneliness may be contributed by gender and gender-linked traits The relationships between gender traits, gender and several kinds of loneliness, such as social loneliness, global loneliness and emotional loneliness had been studied in this research (Yang, 2009). Yang (2009) also studied whether self-esteem might influence this relationship. The measurement used was included the Bem

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Sex Role Inventory, Rosenberg's Self-Esteem Scale, the Revised University of California Los Angeles Loneliness Scale (UCLA Loneliness Scale), the Social and Emotional Loneliness Scale for Adults-short form (SELSA-S); and Demographic Questionnaire, (Yang, 2009). The sample involved 120 students, which 76 were females, 44 were males. The mean gender differences in loneliness were investigated in order to examine the hypotheses that females would involve less global, emotional and social loneliness than males. The result showed significant in global loneliness level in males were higher ($M = 39.48$) compare to females ($M = 36.36$) but showed no significant gender differences on social loneliness and emotional loneliness (Yang, 2009). Yet, on all of these various kinds of loneliness measures, females had slightly lower scores compare to males (Yang, 2009).

In 1985, Borys and Perlman had conducted a research on gender differences in loneliness appear to have the result of gender differences exist in adolescents' loneliness and boys' loneliness is more higher compare to females. Borys and Perlman (1985) had selected the sample of 117 students out of which, 48 were male students and 69 were female students who are from different psychology courses as their subjects. The brief characterization of a lonely person was presented together with the subjects. The researcher found that males manifest greater loneliness as measured by using UCLA loneliness scale (University of California Los Angeles Loneliness Scale) compare to females (Borys & Perlman, 1985). The males' and females' social forces show up differently where females provoke a more positive reaction for displaying their loneliness than males (Borys & Perlman, 1985). Therefore, males more unwilling to accept loneliness and they are not aware of the loneliness. Hence, the loneliness issues of males are more difficult to be identified and cured by the professional (Borys & Perlman, 1985).

In Turkey, the journal titled "Psychology of loneliness of high school students" study the relation between the students' loneliness level who appeared at 4 different high-schools

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and the different variables for example schools, genders, type of accommodation and achievement in academic (Gürses, Merhametli, Sahin, Günes, & Aqikyildiz, 2011). The researchers selected the sample of 136 male students and 131 female students from 4 different high-schools in Erzurum as their participants. Random sampling had been used to assign the sample of study. Researchers are using a short information form and the University of California Los Angeles Loneliness Scale (UCLA loneliness scale) as data collection instrument. The short information form is used to collect the school, gender, type of accommodation and academic achievement information from students. SPSS program such as T-test and ANOVA (Analysis of variance) were used to analyse the data received from UCLA loneliness scale. Results showed that there was significant relation found between the loneliness and gender of the 4 different high schools at 0.05 significant levels. Therefore, female students' loneliness level was higher than the male students since the mean loneliness level of female is $X_F=22.27$ while male is $X_M=20.88$ (Gürses et al., 2011).

In a journal entitled "Exploring the relationship among loneliness, self-esteem, self-efficacy and gender in United Arab Emirates College students", the researcher Al Khatib (2012) had studied the relationship between loneliness, self-esteem, self-efficacy, and gender among the college students. Al Khatib (2012) had selected a sample of 495 college students, which consist of 292 female students and 203 male students from Al Ain University of Science and Technology. Gender stratified sampling was used to select the sample. The loneliness level was measured by using University of California Los Angeles Loneliness Scale (UCLA loneliness scale), while Rosenberg Self-esteem Scale (1965) was used to measure self-esteem. The General Self-efficacy Scale (1979) was used to measure self-efficacy (Al Khatib, 2012). In order to compare females' and males' scores on main variables, Al Khatib (2012) had used T-test to analyse the data. The relationships between loneliness, self-esteem and social self-efficacy were analysed by using Pearson correlation. Male

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students loneliness level ($M = 40.96$, $SD = 11.08$) was lower compare to female students ($M = 45.06$, $SD = 9.93$). In terms of loneliness level, the results showed there was a significant difference between females and males ($t = -4.36$, $p < .001$) (Al Khatib, 2012).

Gender Differences in Smart Phone Addiction

Most of the mobile phone are called as smartphone now (Osman, Talib, Sanusi, Shiang-Yen, & Alwi, 2012), as it provide more application such as allow users access to online activities at any time (Bolle, 2014). Previous study found that young age group reported greatest problematic use in mobile phone (Griffiths, 2013; Bianchi & Phillips, 2005). Young people increasing dependent or addicted to smartphone (Casey, 2012). They use smartphone for the initial function of mobile phone such as interpersonal communication and also use smartphone as a tool for other functions such as access internet (Casey, 2012). Some psychology factor can be predictor of smartphone addiction. For instance, loneliness and shyness are found have positive relationship with smartphone addiction (Casey, 2012)

In the article of Chiu, Hong, Chiu (2013), their research objective is to construct a correlative model between internet addiction and mobile phone addiction. 448 students in Taipei College of Maritime Technology and Aletheia University were involved with 61.2% of them were males and 38.8% of them were females. Mobile Phone Addiction Scale and Internet Addiction Scale were used to obtain the addictive level of participants. Structural equation model were adopted to process the collected data. T-test, bivariate correlations and invariance are used to analysis data in this research. The results found significant relationship between mobile phone addiction and internet addiction. Besides, female college student shows higher scored in mobile addiction than male (Chiu, Hong, & Chiu, 2013).

Smartphone addiction and internet addictions are closely related to each other because some of their features are resemble (Kwon, Kim, Hyun, & Yang, 2013). As mentioned before,

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both kinds of addicts believed to have an unhealthy lifestyle and similar personalities (Chiu, Hong, & Chiu, 2013). Gender differences in Internet and mobile phones addiction is a potential element that can influence the increase of Internet and mobile phone addiction (Chiu et al., 2013). According to journal “Gender Differences in Internet Addiction and Tendency to Express Emotions”, there are studies showing that over internet usage can give people way to isolation and loneliness and it can make person stay away from face to face communication. Hence, this study aims to find out not only the gender differences in internet addiction but also people tendency to express emotion. 373 students in Istanbul Kültür University and Istanbul Aydın University in Turkey have participated to answer questionnaires which involved Emotional Expression Scale and Internet Addiction Scale. Correlation, T-test and multiple regressions have used to analyse data. Results shows that woman have higher internet addiction than man whereas there is no gender differences in tendency to express emotion (Oktuğ, 2012).

However, according to Frangos, Fragkos and Kiohos study, men are more likely to involve in Internet addiction than woman. Study was aim to discover percentage of Internet addiction among Greek university students. Survey was carried out among 1876 Greek University students by using Young’s Diagnostic Test for Internet Addiction (YDTIA) and also inventory which included questions about demographic factors, computer, internet use and academic performance. The factors of internet addiction were analysed by using the multiple logistic regressions. Results proposed that significant predictors of internet addiction included male gender, poor grades, sex pages and blogs. Students with internet addiction were associated with poorer academic performance (Frangos, Fragkos, & Kiohos, 2010).

In study of Perry and Kevin (2007), symptoms of addiction in young short message service (SMS) users and gender different in addictive measures were examined. 214 participants at national university in the Republic of Mauritius were volunteering to complete

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survey during free time. Among the respondents, 46% of them are male and 54% are female.

The ages of participants are mostly between 19 to 25 years old. The survey involved asking daily SMS and calls behaviour, modified DSM-IV television addiction scale and asked respondents whether agree they are addicted or friends accused them are addicted.

Descriptive data, correlation and Stepwise multiple regressions were used to analyse data.

Result shows that the amount of SMS sent and the perceived skill at using SMS technology were significant predictors of the number of addiction criteria exhibited by respondents (Perry & Kevin, 2007). No gender different were found in addictive measure even males have higher number of SMS sent than females (Perry & Kevin, 2007).

According to research of Pawłowska and Potembska (2011), mobile phone addiction is heterogeneous phenomenon as it have been differentiate into sending and receiving text messages, voice call addiction, mobile phone feature addiction and mobile phone games. The purpose of their research is to examine the gender differences in severity of symptoms of mobile phone addiction and the different between women and men in the severity of symptoms of mobile phone addiction. This research involved 493 participants from 13 to 22 years old to complete the socio-demographic questionnaires and Mobile Phone Addiction Assessment Questionnaire (KBUTK). T-test was used to analyze data. Pawłowska and Potembska research found that women have higher severity of symptoms of addiction to voice calls and text messages. Besides, woman were significant frequently use mobile phone to satisfy the desire to be accepted and intimacy, establish and maintain social relationships and to express their emotions whereas men higher severity symptoms of addiction to listen to music, take pictures, play games, and connect to Internet (Pawłowska & Potembska, 2011).

Chapter III

Methodology

Participants

297 participants are recruited for this research. They are the students who are currently enrolled in Universiti Tunku Abdul Rahman (UTAR), Perak Campus. A total of 145 males (48.82%) and 152 females (51.18%) from UTAR students were selected as the respondents of the study. These were made the sample of the study whereas the population was UTAR students. However, 2 participants are excluded. It is because a female (0.33%) claimed that she has no smartphone and one male (0.33%) had graduated. Therefore, the total valid sample was 295, 144 males (48.81%) and 151 females (51.19%) (see Table 3.1). The number of male participants (48.81%) recruited in this research is slightly less than female participants (51.19%) The age range of these undergraduates participants are between 19 to 27.

Besides that, most of the participants are Year 2 students (43.39%), followed by Year 3 (34.24%), Year 1 (20.33%), and Year 4 (2.03%) (see Table 3.1). Other than that, most of the participants are single (71.53%); whereas 29.47% of them are in a relationship (see Table 3.2). Lastly, mode of the participants are from Chinese race (91.19%), followed by Indian race (8.47%), and lastly Malay race only one person (0.34%) (see Table 3.2).

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Table 3.1

Descriptive Statistics for Participants' Gender and Year of Study.

Gender	%	n	Year of Study	%	n
Male	48.81	144	1	20.33	60
Female	51.19	151	2	43.39	128
			3	34.24	101
			4	2.03	6

Table 3.2

Descriptive Statistics for Participants' Relationship Status and Race.

Relationship Status	%	n	Race	%	n
Single	71.53	211	Chinese	91.19	269
In a relationship	29.47	84	Malay	0.34	1
			Indian	8.47	25

Instruments

Instruments used in this research consist mainly of two questionnaires, namely the Smartphone Addiction Scale–Short Version (SAS-SV) and UCLA-Loneliness (Version 3). Additionally, the researchers also gathered participants' demographic data.

Demographics questionnaire. Respondents are required to answer several questions that aims to obtain their demographic information; such as age, gender, faculty, year of studying, race, relationship status, type of smartphone using (see Appendix B). Other than that, respondents are also required to self-claim the hours they spend on smartphone usage in a day such as social networking, communicating with others, selfie, playing games, playing video or movie, and playing music (see Appendix B).

Smartphone Addiction Scale–Short Version (SAS-SV). Smartphone addiction scale (SAS) is a self-analytic scale that to differentiate smartphone addicts based on a Korean self-analytic program which is Internet addiction (K-scale) and the smartphone's own functions (Kwon, Lee, Won, Park, Min, & Hahn, 2013). Revised version of Smartphone addiction scale (SAS-SV) is a scale to examine smartphone addiction (see appendix C). It is consisting 6 factors and the factors are accessed through 10 items with a six-point Likert scale (1: “strongly disagree”, 2: “disagree”, 3: “weakly disagree”, 4: “weakly agree”, 5: “agree”, and 6: “strongly agree”) based on self-reporting (Kwon et al., 2013) (see Appendix C). The six factors are daily-life disturbance, positive anticipation, withdrawal, cyberspace-oriented relationship, overuse, and tolerance (Kwon et al., 2013). Kwon also associated with other researchers to complete another study and concluded that the scores are to total up to be measured. The cut-off value for boys was 31 and 33 for girls (Kwon, Kim, Cho, & Yang, 2013). For those who scored higher than the cut-off values are considered as high-risk for smartphone addiction. As total mean was 25.26 the internal consistency reliability and

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concurrent validity of SAS-SV were certified with Cronbach's alpha correlation coefficient of 0.911 (Kwon, et al, 2013). The correlation coefficients of corrected item total ranged from 0.50 to 0.80 and are well within the satisfactory range as suggested by Nunnally & Bernstein (1994). In our study, the reliability of SAS-SV was identified with Cronbach's alpha correlation coefficient of 0.870 (see Appendix E).

UCLA-Loneliness Scale (Version 3). UCLA-Loneliness Scale was established by Russell, Peplau and Cutrona (1980). To assess loneliness in our study, a short-form of Revised UCLA-Loneliness Scale, version 3 (Russell, 1996) was adopted (see appendix D). This scale is to measure the feelings of loneliness in individuals through 4-point Likert-type scale, ranging from “1” = “never” to “4” = “always” (Casey, 2012) comprised of 20 items based on self-reporting. In the questionnaire, there are 10 of positive statements and the rest are negative statements (Tan, Pamuk, & Donder, 2013) (see appendix D). The Reliability of loneliness scale is stated as .96 while the internal consistency coefficient of the scale was computed as .85 (Tan, Pamuk, & Donder, 2013). For the scoring system, respondents would fall in three categories (Russell, 1996). For who score 15-20: People achieving this score-range are functioning comfortably and experiencing an average level of loneliness (Russell, 1996). For who score 21-30: People who involved in this range are struggling with a little of social interactions and experiencing frequent loneliness (Russell, 1996). For who scored 31-40: Scores falling inside this range would show a person he or she is experiencing severe loneliness (Russell, 1996). The score range from 20 to 80 is reported as higher level of feelings of loneliness (Tan, Pamuk, & Donder, 2013). In our study, the reliability of UCLA-Loneliness Scale was identified with Cronbach's alpha correlation coefficient of 0.903 (see Appendix F).

Procedure

First of all, topic was decided as The Relationship between Loneliness and Smartphone Addiction among Male and Female Undergraduates in University Tunku Abdul Rahman (UTAR). After studied several previous researches, research questions were decided and tests used to measure loneliness level and smartphone addiction were chosen for each research questions. Such are UCLA-Loneliness Scale (Version 3) and Smartphone Addiction Scale–Short Version (SAS-SV).

Population for this study is UTAR students and sample was 297 UTAR students. Purposive and Quata sampling methods were used to recruit the approximate equal amount from both male and female, which is 145 male and 152 female. Purposive sampling method is a type of non-probability sampling technique and it relies on the judgment of the researchers to select the sample. The main goal of purposive sampling is to focus on particular characteristics of a population that researchers are interesting or researching, which will best enable the researchers to answer the research questions. In this study, the researchers used purposive sampling method to select and target the sample that who is having smartphone. The questionnaires were only distributed to who is having smartphone. Quata sampling method is a type of non-probability sampling technique and it is based on the judgment of the researchers to select the sample from different sub-group. It is focus on comparing the differences between different groups. The sample is selected from each segment based on a specified proportion such as male and female. In the beginning of this study, we planned to ensure that the sample we selected had a proportional number of male and female students, which the total number of male and female students included in our quota would only be equal if 150 students from the university were male and the other 150 students were female. However, during the data collection through online, we found difficult to achieve the proportional number of male and female. Besides, there were 2 participants are

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excluded. It is because a female (0.33%) claimed that she has no smartphone and one male (0.33%) had graduated. Finally, the total valid sample was 295, 144 males (48.81%) and 151 females (51.19%).

Next, in order to collect data from the sample, the researchers uploaded the survey questionnaires on Google Forms online along with a General Instructions (see appendix A). The purpose of general instructions is to explain the purpose of this study, to provide a general direction of the topic of the questionnaire, and to describe the issues regarding the privacy and confidentiality of the data that will be collected in this research. Therefore, the general instructions are including introduction of researchers, purpose of the questionnaire, confidentiality statement, and voluntary participation. 150 of physical copies are also printed out with general instructions in order to reach participants that could not participate in the online survey.

The survey questionnaires composed by four parts. The first part is the General Instructions (see Appendix A), followed by Part I: Demographics (see Appendix B), Part II: Smartphone Addiction Scale–Short Version (SAS-SV) (see Appendix C), and lastly, UCLA-Loneliness Scale (Version 3) (see Appendix D). The survey questionnaires were uploaded on Google Forms. The questionnaires were distributed to participants by using online survey method via the website link from Google Forms. The link was shared in Facebook groups which recently most UTAR students enrolling in, such as “UTAR Kampar”, “UTAR Kampar Free Market”, “Bachelor of Social Science (HONS) Psychology”, and “UTAR OCT’13 Intake (Perak Campus)”. Besides, the researchers created a few chat groups and private group such as “FYP Questionnaires” in Facebook and then added UTAR students into the groups. The website link from Google Forms was shared on those groups in order to reach the personal friends and acquaintances who are UTAR students. This is to allow the participants could complete the questionnaires in a comfortable situation such as their own homes and

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during their free time. Other than that, the participants could ask their friends or classmates to complete the survey questionnaires in a convenience way.

Furthermore, the physical copies of survey questionnaires were distributed via pen and paper form between 14th of March to 18th of March. The researchers had the permission and distributed the survey questionnaires in hardcopy form to the students who was attending tutorial class for the subject of ‘Psychological Testing and Measurement’. The researchers entered the classes 20 minutes before the class ended, and then the researchers briefly explained the purpose of this research as well as issues regarding the privacy and confidentiality of the data collected from the participants before the participants begin to answer the survey questionnaires. Participants were estimated to take around 20 minutes to complete the survey questionnaires. The researchers totally distributed the survey questionnaires to 5 classes. There were around 150 participants being recruited. All of the classes were located in Block P, which is the block for Faculty of Social Science in UTAR.

Due to the fact that both scales were constructed and tested mainly in the other countries, before we analysis the whole data, we gauged the reliability of the Smartphone Addiction Scale – Short Version (SAS-SV) and UCLA – Loneliness Scale (Version 3) scales among students here in Malaysia. After data collection, we calculated the reliability of both scales using Statistical Package of Social Science (SPSS). We involved every answer that participants provided in every item of both scales. The SAS-SV showed a Cronbach Alpha of .870; whereas the UCLA (Version 3) showed a Cronbach Alpha of .903. With such high reliability scores demonstrated by both scales, we proceeded with the actual data analysis.

Data Analysis

Data collected is further analysed using the Statistical Package of Social Science (SPSS). Participants’ item scores and total scores from SAS-IV and UCLA-3 will be shown

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in mean, standard deviation, and frequency for descriptive statistics. As for inferential statistics, Independence sample T-test and Pearson correlation were used to obtain statistical results and among different variables.

Independence sample T-test was used to analyse the gender difference in the use of smartphone, loneliness, and smartphone addiction.

Pearson correlation was used to analyse the correlation between loneliness and smartphone addiction, the correlation between loneliness and smartphone addiction in male, and the correlation between loneliness and smartphone addiction in female.

CHAPTER IV

FINDINGS AND ANALYSIS

Statistics were used to analyse the data collected in this research. Independence sample T-test and Pearson Correlation were used to analyse the differences and relationships between different variables.

Gender Differences in the Uses of Smartphone per Day

The results below show the gender differences in using the smartphone for different activities in a day among UTAR undergraduate's students. Independent sample t-tests are used to analyses the gender differences in using the smartphone for different activities among UTAR undergraduate's students. Firstly, the results shows that there is no significant gender differences in using smartphone for social networking, $t(293) = -1.22, p = .221$. On the other hand, there is significant gender differences in using the smartphone for communicating with others, $t(271.58) = -2.41, p = .016$, female ($M=3.06, SD=3.61$) spend more time in than male ($M=2.18, SD=2.57$) communicating with others (see Table 4.1). Besides, there is significant gender differences in using the smartphone for playing games among UTAR undergraduate's students, $t(231.58) = 4.16, p < .001$, male ($M=2.13, SD=2.63$) spend more time than female ($M=1.08, SD=1.58$) in using smartphone to play games (see Table 4.1). In addition, the result also shows that there is no significant gender differences in using smartphone for playing video or movie, $t(293) = -.246, p = .806$ (see Table 4.1). Other than that, there is no significant gender differences is using smartphone to play music, $t(293) = -.084, p = .933$ (see Table 4.1). Finally, there is no significant gender differences in using the smartphone for selfie, $t(293) = -.889, p = .374$ (see Table 4.1).

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Table 4.1

Means, Standard deviations, t value, and p-value for Uses of Smartphone per Day among Male and Female Undergraduates' Students in UTAR

Activities	Gender	Total Mean (Hours)	Mean (Hours)	Standard Deviation	t value	p-value
Social Networking	Male	4.43	4.16	3.56	-1.22	.222
	Female		4.68	3.74		
Communicate with Others	Male	2.63	2.18	2.57	-2.43	.016
	Female		3.06	3.61		
Play Games	Male	1.59	2.13	2.63	4.16	.000
	Female		1.08	1.58		
Play Video/Movie	Male	1.49	1.46	1.72	-.246	.806
	Female		1.52	2.48		
Play Music	Male	1.87	1.86	2.40	-.084	.933
	Female		1.88	2.67		
Selfie	Male	.261	.232	.581	-.889	.374
	Female		.289	.515		

Gender Differences in Smartphone Addiction

The results below show the gender differences in smartphone addiction among UTAR undergraduate's students. The first hypothesis predicted there would be a significant gender differences in smartphone addiction among UTAR undergraduate's students. Independent sample t-test was used to analyses the gender differences in smartphones addiction among UTAR undergraduate's students. The result (see Table 4.2) shows that there is no significant gender differences in smartphone addiction, $t(268.54) = 1.89, p = .060$. Male students ($M = 31.78, SD = 10.81$) and female students ($M = 29.66, SD = 8.32$) both have a similar level of smartphone addiction. Hence, the hypothesis is rejected.

Table 4.2

Means, Standard deviations and t value for Smartphone Addiction Scale - Short Version among Male and Female Undergraduates' Students in UTAR

Gender	n	M	SD	t value	p value
Male	144	31.78	10.81	1.90	.060
Female	151	29.66	8.32		

Note. n=number, M=mean, SD=standard deviation

Gender Differences in Loneliness

The result below shows the gender differences in loneliness among UTAR undergraduate's students. The second hypothesis predicted there would be a significant gender differences in loneliness among UTAR undergraduate's students. Independent sample t-test was used to analyses the gender differences in loneliness among UTAR undergraduate's students. The results (see Table 4.3) shows that there is no significant gender differences in loneliness, $t(293) = 1.58, p = .507$. Both male ($M = 45.46, SD = 9.58$) and female ($M = 43.66, SD = 9.85$) have a similar level of loneliness. Hence, the hypothesis is rejected.

Table 4.3

Means, Standard Deviations, and t value for UCLA Loneliness Scale among Male and Female Undergraduates' Students in UTAR

Gender	n	M	SD	t value	p value
Male	144	45.46	9.58	1.59	.507
Female	151	43.66	9.85		

Note. n=number, M=mean, SD=standard deviation

The Correlation between Smartphone Addiction and Loneliness

The result below shows the relationship between smartphone addiction and loneliness among UTAR undergraduate's students. The third hypothesis of our research study is there is a significant relationship between smartphone addiction and loneliness among undergraduate's students in UTAR. To analyses the significant relationship between smartphone addiction and loneliness among undergraduate's students in UTAR, *Pearson's Correlation* had been used. The results of *Pearson's Correlation* (see Table 4.4) showed that there is significant positive correlation between smartphone addictions and loneliness among undergraduate's students in UTAR, $r(293) = .147, p = .011$. The hypothesis is fail to reject as it is supported by our finding. Therefore, the higher the level of smartphone addiction, the higher the tendency to be loneliness among undergraduate's students in UTAR.

Table 4.4

Pearson's Bivariate Correlation for Smartphone Addiction Scale Short Version and UCLA Loneliness Scale among Undergraduate's Students in UTAR.

		UCLA Loneliness
SAS-IV	Pearson Correlation	.147
	<i>p value</i>	.011
	n	295

Note. n=number, UCLA Loneliness = UCLA Loneliness Scale (Version 3), SAS-IV = Smartphone Addiction Scale Short Version

Gender Differences in the Correlation between Smartphone Addiction and Loneliness

The results below show the relationship between smartphone addiction and loneliness among male and female undergraduate's students. The forth hypothesis of our research study

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is there is a significant relationship between smartphone addiction and loneliness among male and female undergraduate's students in UTAR. *Pearson's Correlation* are used to analyses the significant relationship between smartphone addiction and loneliness among male and female undergraduate's students in UTAR. The results of *Pearson's Correlation* (Table 4.5) showed that there is no correlation between smartphone addiction and loneliness among male undergraduate's students, $r(142) = 0.029, p = 0.732$. Therefore, the hypothesis is rejected. However, the results of *Pearson's Correlation* (Table 4.5) showed that there is significant positive correlation between smartphone addiction and loneliness among female undergraduate's students, $r(149) = 0.273, p = 0.001$. The hypothesis is fail to reject. Hence, the higher the level of smartphone addiction, the higher the tendency to loneliness only among female undergraduate's students in UTAR.

Table 4.5

Pearson's Bivariate Correlation for Smartphone Addiction Scale Short Version (SAS-IV) and UCLA Loneliness Scale among Male and Female Undergraduate's Students in UTAR.

			UCLA Loneliness Scale
Male	SAS-IV	Pearson Correlation	.029
		<i>p</i> - value	.732
		n	144
Female	SAS-IV	Pearson Correlation	.027
		<i>p</i> - value	.001
		n	151

Note. n=number, UCLA Loneliness = UCLA Loneliness Scale (Version 3), SAS-IV =

Smartphone Addiction Scale Short Version

CHAPTER V

DISCUSSION

Gender Differences in Smartphone Addiction

Our finding for hypothesis one showed that there are no gender differences in smartphone addiction. This finding is similar with the results of Perry and Kevin (2007) which have no gender differences in mobile phone addiction. Besides that, Bhardwaj and Ashok (2015) yield similar results with our current finding. In the validation of SAS, SAS score also showed no gender differences (Kwon et al., 2013). In *Internet Addiction: Neuroscientific Approaches and Therapeutical Interventions*, researchers found no gender differences in the use of internet in smartphone (Dau, Hoffmann, & Banger, 2015). However, the results of gender differences in smartphone addiction were inconsistent among studies found. There are studies found gender differences in smartphone addiction and mostly stated that female have higher level of smartphone addiction than male (Chiu, Hong, & Chiu, 2013; Choi, et al., 2015; Park & Lee, 2014).

Malaysia is formed by multi-ethnic which is quite different with other country as some countries have only one ethnic. Our belief and cultural value might largely different with others countries. In the journal titled *The influence of national culture on the attitude towards mobile recommender systems* (2013), the researchers found that cultural values have significance relationship with user attitude. The cultural characteristics of individual such as collectivism and social factors can impact individual attitude towards mobile recommender systems (Choi, Lee, Sajjad, & Lee, 2014). In others words, unique culture might influence our finding on gender differences of smartphone addiction in Malaysia.

UTAR Kampar is a small town with high amount of students. As students stay in a same context and also very easy to contact with each other, it is possible that they have been

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influence each other behavior towards smartphone. According to the thesis: *The Social Influence of Smartphone Usage* (2012), the researcher stated that the smartphone usage have form new social norm. People use smartphone as a way to communicate with others and it caused mobile symbiosis which refers to the intensive use of smartphone to feel social cohesion. They also purposed that the use of mobile phones influence by the context and the people around them. If the co-present others use their phones, individual will also tend to use their phones, vice versa. Furthermore, the researcher mentioned that he found no significant distinctive patterns on smartphone usage base on gender (Tran, 2012). Hence, no gender differences in smartphone addiction found in our study may cause by the social norms on smartphones usage that is in Kampar.

Other than that, according to Park and Lee (2014), male and female are using smartphone for different purpose. In our finding, it found that female tend to use smartphone for social networking and communication whereas male use smartphone for gaming and watching video. As a result, we discussed that both male and female have difference purpose of using smartphone but their addictive level on smartphone can be similar to each other.

Gender Differences in Loneliness

There are no gender differences in loneliness according to our findings. There were studies also found no gender differences in loneliness (Bhardwaj & Ashok, 2015; Gürsoy & Bıçakçı, 2006; Neto, 1992; Ozdemir & Tuncay, 2008). In the other hand, some studies found gender differences in loneliness. From that studies, some found female have higher loneliness compare to male (BAŞ, 2010; Bugay, 2007; Al Khatib, 2012) whereas some studies found male have a higher loneliness compare to female (Salimi, 2011; Wiseman, Gutfreund, & Lurie, 1995; Yang, 2009). It shows that the finding of gender differences in loneliness have

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been inconsistent. However, there is researcher stated that majority of the research's finding were found no gender differences in loneliness (Vanhalst, 2012).

In the journal *Sex Difference in Loneliness: The Role of Masculinity and Femininity*, Cramer and Neyedley (1998) stated that the inconsistent of finding in gender differences is due to sex roles. Male more likely to deny that there are lonely compare to female. After they removed the masculinity, male are significant more lonely than female. It is possible that UTAR Kampar male students were denying themselves as a loner. As a result, those males have similar level of loneliness with female. Other research found no gender differences in their finding, but it showed that loneliness correlated with romantic relationship (Ozdemir & Tuncay, 2008). Ozdemir and Tuncay (2008) indicated that level of loneliness in single students were significant higher than students in a relationship. In our study, there is 71 per cent of single which might cause a similar level of loneliness among UTAR students.

Next, it is reported that most freshman tend to be lonely as they have dramatic change in situation such as leaving home by their own and need to form new social ties with others (Shaver, Furman, & Buhrmester, 1985). However, in the end of first year, the loneliness level reported fallen, they will no more suffer in loneliness and they had become used to the transition (Shaver et al., 1985). Our study have only consists of 20 per cent of first year students, the others is senior. Thus, the similar level of loneliness between male and female found in our study might because of their current situation that all these senior were no more suffering from the transition that make them feel lonely.

The Correlation between Smartphone Addiction and Loneliness

Based on the findings of the research, it is showed that a positive correlation exists between smartphone addiction and loneliness among undergraduate's students in UTAR. With this, it can be posited that the higher the level of smartphone addiction, the higher the tendency to be loneliness; or the lower or fewer the level of smartphone addiction, the lower the tendency to be loneliness.

The findings were consistent with the previous study which Casey (2012) stated that smartphone addiction may cause someone to feel lonely. This is because loneliness is an undesirable feeling that derives from inconsistency between wished and accomplished levels of social connection (Perlman & Peplau, 1981). Smartphone addiction might influences the way people communicate and causing social stress (Perlman & Peplau, 1981). Furthermore, through smartphone, people can easily communicate with others by individual to individual and concurrently sending short message service (SMS) or using smartphone communication tools rather than face-to-face communication (Casey, 2012). Hence, smartphone addiction may influence an individual apt to have loneliness.

Our results are also supported by a study by Ezoel and Toda (2013) in which the study shows that Internet addiction is associated with mobile phone dependence and loneliness among Japanese students. They stated that phone dependence was shown to cause loneliness by isolating individuals from the real world and deprive them of a sense of connecting with real world contacts (Ezoel & Toda, 2013).

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Besides, our findings are similar to a study by Tan, Pamuk, and Dönder in year of 2013. Their result show there was a significant difference between loneliness of university students and mobile phone addiction. Loneliness scores of students who have been addicted to mobile phone were found to be higher than those of non-addicts (Tan, Pamuk, & Dönder, 2013). Tan and his colleagues were considering the features of smartphone which is able to communicate with others and internet surfing. Individuals are having great opportunity to interact with another through mobile phones in everywhere (Tan et al., 2013). Individuals who engaged in smartphones constantly may be having lesser time to allocate to other social interactions, especially face-to-face interaction (Tan et al, 2013). This situation may make the person to feel lonely.

On the other hand, in line with the hypotheses, smartphone addiction was directly linked to loneliness. According to the finding by Bian and Leung in 2014, their result shows that ones scored higher in loneliness, ones have higher chance to be smartphone addicts (Bian & Leung, 2014). This shows that when someone feeling lonely, he or she tends to look for psychologically satisfaction from somewhere such as social networking or playing video games. Although loneliness played large roles in smartphone addiction, smartphone usage habits were also a powerful predictor that leads someone to feel lonely. When a people overuse the smartphone, he or she tends to ignore everyone who besides and may distract people. Hence, he or she would feel loneliness while he or she has no one to turn on (Bian & Leung, 2014).

Gender Differences in the Correlation between Smartphone Addiction and Loneliness

The purpose of this research study is to determine whether there are any significant correlation takes place between smartphone addiction and loneliness among male and female undergraduate's students in UTAR. According to the research findings for hypothesis two showed that there is significant positive correlation between smartphone addiction and loneliness among female undergraduate's students; however show no significant correlation among male undergraduate's students. Therefore, this indicates that the higher the female level of smartphone addiction, the greater the loneliness level.

According to another finding of the study, there was a significant difference between loneliness of university students and daily use of mobile phone. In 2012, Jin and Park discover that more smartphone calling was connected with the greater level of loneliness. Females are more likely to use smartphone or phone messaging and online social sites more than males (Tan, Pamuk, & DÖnder, 2013). As the level of female smartphone calling or messaging was higher, the more they feel lonely. Interestingly, our findings are alike to the results of this study.

From our research, gender differences in the use of smartphone per day shows that female spend more time in communicating with others than male. There is one study in 2001 by Boneva, Kraut, & Frohlich showed that women will specially spend extra time to keep in touch and contact with their friends and family as well as communicate with new people more often than men (Boneva, Kraut, & Frohlich, 2001). While in 2010, Burk and his colleagues proved that in order to strengthening social bond, women tend to engage

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themselves in Social networking sites (SNS) activities compare to men (Burke, Marlow & Lento, 2010). Females are more likely to take in additional social support which causing from Internet usage compare to males (Kraut et al., 2002). Hence, it can be said that, females engage themselves more with smartphone, they tend to be lonelier and thus get the social support from the phone communication or social networking sites by using their phone.

Internet and mobile phone addicts both have an unhealthy lifestyle and similar personalities (Chiu, Hong, & Chiu, 2013). From our research study, the mean hours per day of females (4.679 hours) spend on social networking such as Facebook, Twitter and Instagrams are higher than males (4.159 hours). Females tend to have higher internet addiction by using their smartphone compare to males. Internet addiction is proven closely related to smartphone addiction (Kwon, Kim, Cho, & Yang, 2013). While in 2003, Whang, Lee, and Chang's finding shows that the degree of internet addiction has significant relationship with loneliness. Other than that, there is also one study found that internet usage is significant related to loneliness (Engelberg & Sjöberg, 2004). This results finding had support our results which showed that females who have higher internet addiction are closely related to smartphone addiction hence have significance relationship with the loneliness level. Therefore, as the level of smartphone addiction in females getting higher, the level of loneliness are higher as well.

Besides that, males less using their smartphone for social pleasures or satisfactions than females because males experience fewer social stress compare to females (Bolle, 2014). Moreover, women are having stronger relationship with their smartphones (Bolle, 2014). Men have less conversations and gossips on smartphone than women do (Jenaro, Flores,

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Gomez-Vela, Gonzalez-Gil, & Caballo, 2007). When females spend their time more with the smartphone, they tend to ignore people from surrounding. Therefore, this phenomenon causes females to feel loneliness when they have no one to turn to. This supports our research finding which the relationship of smartphone addiction and loneliness are significant correlates only among female undergraduate's students. While in 2014, a study done by Lee, Chang, Lin, and Cheng stated that women are more socially oriented, while men are more task-oriented. Therefore, women spend more time with their smartphones to keep up their social relationships compared to men.

Limitations

This research has answered all the research questions that were prepared in the earlier time. However, researchers found that there are some limitations that arise throughout the process of conducting this study. One of the shortcomings of this study is the sample we collected is under consideration. In this study, there are large amount of Chinese participants compared to other races. Therefore, the results cannot be generalized and could also potentially to be biased because it lacked of respondents from other races. This is due to the fact that most of the students in UTAR, Perak campus are of the Chinese ethnic.

Moreover, most of them are in the same faculty which is Faculty of Arts and Social Science. The responses got from one faculty cannot be generalized to the population of UTAR, Perak campus because it lacked of respondents from other faculties. The results could be potentially biased.

Besides, the respondents for this research were recruited through non-probability sampling method, which is purposive and quota sampling method. These methods is to help focus on particular characteristics of a population that researchers are interesting or researching, which will best enable the researchers to answer the research questions. The researchers used purposive sampling method to select and target the sample that who is having smartphone. So, the questionnaires were only distributed to who is having smartphone. Not only that, the sample is selected by researchers from two gender (male and female) through using quota sampling method, to fulfil the proportion number of both gender. Hence,

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the results collected in this study, could be potentially biased as the respondents were selected based on the judgement of researchers.

In addition, the study conducted was using 297 respondents as sample size, which is only involving a small scale of UTAR students, when total number of students in UTAR Perak campus is approximately 15,000.

Recommendations

Regarding to the limitation in this study, the suggestion for further study is to increase the number of participants which is by increasing the sample size to a greater number in order to enhance the external validity and reliability of the study. Besides, the similar study can also be expanded on the population to a larger geographical area instead of only in UTAR, Perak campus.

Not only that, researchers can design diverse sampling to include appropriate amount of respondents from different races such as Indian and Malay in order to obtain a fair and unbiased data. Moreover, researchers are suggested to avoid collecting high amount of participants who are from Faculty of Arts and Social Science but also approach to others faculties' students as well.

In addition, study in future should use probability sampling method such as random sampling technique to recruit the respondents for the survey questionnaires, rather than only using non-probability method to recruit the respondents. So the result only can be generalized to the population in more accurately.

Last but not least, study on smartphone addiction and loneliness should not only use quantitative method to conduct the study. In fact, researchers can use mixed method which is including qualitative method such as interviewing, case study or observational method to carry out the study in order to gain a deeper understanding from the respondents. Some of the students will easily get affected by the questions asked and they might get confused by the questions posted as the original questions are created by western researchers. Therefore, those

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questionnaires must be modified into a more comprehensive version so that it could function better in other cultural contexts such as Malaysia.

Chapter VI

Conclusion

In conclusion, the previous studies provide supports and evidence to the aspect of smartphone addiction which aid the researchers in predicting and correlating loneliness level of students who from UTAR, Perak campus. The ability to recognize the consequence of addicted to smartphone would increase the loneliness level.

Besides, this study was aim to find out the gender differences in the relationship of smartphone addiction and loneliness. Our study has found that there is no gender differences in both smartphones addiction and loneliness among UTAR undergraduate's students. However, we found that there is a correlation in the relationship between smartphone addiction and loneliness. In our third finding, it had supported that there is a gender differences in the relationship of smartphone addiction and loneliness. Female have significant contributed to the relationship of smartphone addiction and loneliness. It means that correlation between addicting to smartphone and loneliness level are much more effect on female, compare to male. Further research is needed to be carrying out for further explore on this topic. For example, future researcher might investigate the causes of gender differences in the relationship of smartphone addiction and loneliness. So that it can give a more comprehensive understanding about this topic. Hence, decrease the likelihood of smartphone addiction and feel of loneliness occur in UTAR students especially female undergraduates.

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Appendix A

General Instruction from Questionnaires

SURVEY FOR THE STUDY OF THE RELATIONSHIP BETWEEN LONELINESS AND SMARTPHONE ADDICTION AMONG MALE AND FEMALE UNDERGRADUATES IN UTAR

Welcome!

This survey is carry out by University Tunku Abdul Rahman Psychology Year 3 Sem 2 Final Year Project students.

The main purpose of this survey is to determine gender differences in loneliness among undergraduate students in UTAR. Secondly is to determine gender differences in smartphone addiction among undergraduate students in UTAR. Lastly, to determine the relationship between loneliness and smartphone addiction among undergraduate students in UTAR.

This survey consists of four part. The first part is the General Instructions, followed by Part I: Demographics, Part II: Smartphone Addiction Scale–Short Version (SAS-SV), and lastly, UCLA-Loneliness Scale (Version 3). Participants are estimated to finish this survey within 20 MINUTES .

Please be inform that all participants have the right not to participate in this survey. Furthermore, participants are free to quit this survey at anytime.

The information given by participants will be keep in private and confidential. All information will solely use for academic purpose.

Any question regarding this survey can contact us through

Wong Kok Chem 018-3273713

Tho Fang Lan 017-4485001

Sin Hui Ning 016-7011070.

ONLY UTAR UNDERGRADUATES STUDENTS are allowed to take part in this survey. Thank you.

* Required

I am UTAR undergraduate students. I agree to participate in this study and I understand that I am free to withdraw this survey at anytime. *

NEXT

25% complete

Appendix B

Part I of Questionnaire: Demographics

Part I: Demographics

Age *

Your answer

Gender *

Male

Female

Faculty *

FAS

FBP

FCI

FGI

FSc

ICS

Level of Study *

Year 1

Year 2

Year 3

Other:

SMARTPHONE ADDICTION AND LONELINESS

Relationship Status

- Single
- In a relationship

Do you have a smartphone? *

- Yes
- No

If yes, what type of smartphone are you using now? *

- I phone
- Oppo
- Huawei
- Xiao Mi
- Nokia
- Samsung
- Sony
- Other :

SMARTPHONE ADDICTION AND LONELINESS

In average, how many hours do you spend on smartphones daily for SOCIAL NETWORKING? eg: Facebook, Instagram *

Your answer

How many hours do you spend on smartphones daily for COMMUNICATE FOR OTHERS ? eg: make a call, sms *

Your answer

How many hours do you spend for PLAYING GAMES on your smartphones daily ? *

Your answer

How many hours do you spend for PLAYING VIDEO/MOVIE on your smartphones per day ? *

Your answer

How many hours do you spend for SELFIE on your smartphones per day? *

Your answer

How many hours do you spend for PLAYING MUSIC on your smartphones daily? *

Your answer

Appendix D

Part III of Questionnaire: UCLA-Loneliness Scale (Version 3)

Part III : UCLA-Loneliness Scale (Version 3)

This scale is used to measure one's subjective feelings of loneliness as well as feelings of social isolation by using 4-point Likert-type scale. It consists of 20 items. Ranging from 1 : "Never" , 2: "Rarely" ,3: "Sometimes" ,4: "Often"

Indicate how often the statement below describe yourself.

1. How often do you feel that you are "in tune" with the people around you? *

1	2	3	4
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

2. How often do you feel that you lack companionship? *

1	2	3	4
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

3. How often do you feel that there is no one you can turn to? *

1	2	3	4
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

4 How often do you feel alone? *

1	2	3	4
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

5. How often do you feel part of a group of friends? *

1	2	3	4
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

SMARTPHONE ADDICTION AND LONELINESS

6. How often do you feel that you have a lot in common with the people around you? *

1

2

3

4

7. How often do you feel that you are no longer close to anyone? *

1

2

3

4

8. How often do you feel that your interests and ideas are not shared by those around you? *

1

2

3

4

9. How often do you feel outgoing and friendly? *

1

2

3

4

10. How often do you feel close to people? *

1

2

3

4

11. How often do you feel left out? *

1 2 3 4

12. How often do you feel that your relationships with others are not meaningful? *

1 2 3 4

13. How often do you feel that no one really knows you well? *

1 2 3 4

14. How often do you feel isolated from others? *

1 2 3 4

15. How often do you feel you can find companionship when you want it? *

1 2 3 4

SMARTPHONE ADDICTION AND LONELINESS

16. How often do you feel that there are people who really understand you? *

1 2 3 4

17. How often do you feel shy? *

1 2 3 4

18. How often do you feel that people are around you but not with you? *

1 2 3 4

19. How often do you feel that there are people you can talk to? *

1 2 3 4

20. How often do you feel that there are people you can turn to? *

1 2 3 4

Appendix E

SPSS Output: Cronbach's Alpha for Smartphone Addiction Scale–Short Version (SAS-SV)

Scale: Smartphone Addiction Cronbach's Alpha

Case Processing Summary

		N	%
Cases	Valid	295	100.0
	Excluded ^a	0	.0
	Total	295	100.0

a. Listwise deletion based on all variables in the procedure.

Reliability Statistics

Cronbach's Alpha	N of Items
.870	10

Item Statistics

	Mean	Std. Deviation	N
Missing planned work due to smartphone use	3.05	1.379	295
Having a hard time concentrating in class, while doing	3.56	1.441	295
Feeling pain in the wrists or at the back of the neck while	2.66	1.340	295
Won't be able to stand not having a smartphone	3.28	1.497	295
Feeling impatient and fretful when I am not holding my	2.86	1.459	295
Having my smartphone in my mind even when I am not using it	2.46	1.298	295
I will never give up using my smartphone even when my	3.29	1.488	295
Constantly checking my smartphone so as not to miss	3.54	1.522	295
Using my smartphone longer than I had intended	3.62	1.352	295
The people around me tell me that I use my smartphone	2.36	1.417	295

SMARTPHONE ADDICTION AND LONELINESS

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
Missing planned work due to smartphone use	27.64	78.347	.532	.862
Having a hard time concentrating in class, while doing	27.13	76.312	.590	.858
Feeling pain in the wrists or at the back of the neck while	28.03	81.992	.389	.873
Won't be able to stand not having a smartphone	27.42	76.155	.568	.860
Feeling impatient and fretful when I am not holding my	27.84	73.014	.726	.847
Having my smartphone in my mind even when I am not using it	28.23	78.384	.573	.859
I will never give up using my smartphone even when my	27.40	73.779	.675	.851
Constantly checking my smartphone so as not to miss	27.15	73.851	.653	.853
Using my smartphone longer than I had intended	27.07	77.883	.567	.860
The people around me tell me that I use my smartphone	28.33	76.399	.599	.857

Scale Statistics

Mean	Variance	Std. Deviation	N of Items
30.69	93.240	9.656	10

Appendix F

SPSS Output: Cronbach's Alpha for UCLA-Loneliness Scale (Version 3)

Reliability

[DataSet0] C:\Users\Student.ADMINISTRATOR\

Scale: ALL VARIABLES

Case Processing Summary

		N	%
Cases	Valid	295	100.0
	Excluded ^a	0	.0
	Total	295	100.0

a. Listwise deletion based on all variables in the procedure.

Reliability Statistics

Cronbach's Alpha	N of Items
.903	20

Item Statistics

	Mean	Std. Deviation	N
"in tune" with the people around	2.10	.726	295
lack companionship	2.23	.813	295
there is no one you can turn to	2.25	.818	295
feel alone	2.25	.857	295
part of a group of friend	2.01	.816	295
have a lot in common with the people around	2.20	.720	295
no longer close to anyone	2.29	.847	295
interests and ideas are not shared by those around	2.40	.871	295
outgoing and friendly	2.00	.810	295
close to people	2.01	.705	295
left out	2.27	.829	295
relationships with others are not meaningful	2.06	.869	295
no one really knows you well	2.53	.906	295
isolated from others	2.12	.817	295
can find companionship when want it	2.25	.833	295
there are people who really understand you	2.28	.845	295
feel shy	2.57	.908	295
people are around you but not with you	2.38	.799	295
there are people can talk to	2.11	.766	295
there are people can turn to	2.22	.821	295

Appendix G:

SPSS Output: Independent Sample T-test for Gender Difference in Uses of Smartphone

→ T-Test

[DataSet1] C:\Users\Student.FASEL16\Desktop\Wong.sav

Group Statistics

	Gender	N	Mean	Std. Deviation	Std. Error Mean
Social Networking	Male	144	4.1587	3.55508	.29626
	Female	151	4.6788	3.73468	.30392
Communicate	Male	144	2.1795	2.57248	.21437
	Female	151	3.0613	3.60809	.29362
Play Games	Male	144	2.1312	2.63293	.21941
	Female	151	1.0748	1.57537	.12820
Play Video	Male	144	1.4618	1.71565	.14297
	Female	151	1.5232	2.48317	.20208
Selfie	Male	144	.2319	.58140	.04845
	Female	151	.2887	.51456	.04187
Play Music	Male	144	1.8559	2.40203	.20017
	Female	151	1.8808	2.67423	.21763

SMARTPHONE ADDICTION AND LONELINESS

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
Social Networking	Equal variances assumed	.083	.773	-1.224	293	.222	-.52013	.42492	-1.35642	.31616
	Equal variances not assumed			-1.225	292.999	.221	-.52013	.42443	-1.35544	.31518
Communicate	Equal variances assumed	6.797	.010	-2.407	293	.017	-.88174	.36638	-1.60282	-.16067
	Equal variances not assumed			-2.425	271.588	.016	-.88174	.36355	-1.59748	-.16601
Play Games	Equal variances assumed	19.618	.000	4.204	293	.000	1.05642	.25127	.56188	1.55095
	Equal variances not assumed			4.157	231.578	.000	1.05642	.25412	.55573	1.55710
Play Video	Equal variances assumed	1.629	.203	-.246	293	.806	-.06137	.24963	-.55268	.42993
	Equal variances not assumed			-.248	267.458	.804	-.06137	.24754	-.54875	.42600
Selfie	Equal variances assumed	.177	.674	-.889	293	.374	-.05680	.06385	-.18247	.06887
	Equal variances not assumed			-.887	284.885	.376	-.05680	.06404	-.18285	.06925
Play Music	Equal variances assumed	.583	.446	-.084	293	.933	-.02489	.29644	-.60831	.55852
	Equal variances not assumed			-.084	291.965	.933	-.02489	.29568	-.60683	.55705

Appendix H

SPSS Output: Independent Sample T-test for Gender Difference in Smartphone Addiction
and Loneliness

T-Test

[DataSet1] C:\Users\TEMP.KHPQ14.000\Desktop\Wong.sav

Group Statistics

	Gender	N	Mean	Std. Deviation	Std. Error Mean
Smartphone Addiction (SAS-IV)	Male	144	31.78	10.806	.901
	Female	151	29.66	8.319	.677
Loneliness (UCLA-Version 3)	Male	144	45.46	9.576	.798
	Female	151	43.66	9.854	.802

SMARTPHONE ADDICTION AND LONELINESS

Independent Samples Test										
		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
Smartphone Addiction (SAS-IV)	Equal variances assumed	10.520	.001	1.901	293	.058	2.129	1.120	-0.075	4.333
	Equal variances not assumed			1.890	268.538	.060	2.129	1.127	-0.089	4.347
Loneliness (UCLA-Version 3)	Equal variances assumed	.441	.507	1.587	293	.114	1.796	1.132	-0.432	4.024
	Equal variances not assumed			1.588	292.894	.113	1.796	1.131	-0.430	4.022

Appendix I

SPSS Output: Correlation between Smartphone Addiction and Loneliness

Correlations

[DataSet1] C:\Users\TEMP.KHPQ14.000\Desktop\Wong.sav

Descriptive Statistics

	Mean	Std. Deviation	N
Smartphone Addiction (SAS-IV)	30.69	9.656	295
Loneliness (UCLA-Version 3)	44.54	9.744	295

Correlations

		Smartphone Addiction (SAS-IV)	Loneliness (UCLA-Version 3)
Smartphone Addiction (SAS-IV)	Pearson Correlation	1.000	.147*
	Sig. (2-tailed)		.011
	N	295.000	295
Loneliness (UCLA-Version 3)	Pearson Correlation	.147*	1.000
	Sig. (2-tailed)	.011	
	N	295	295.000

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

Appendix J

SPSS Output: The Correlation between Smartphone Addiction and Loneliness in Male

→ Correlations

[DataSet1] C:\Users\TEMP.KHPQ14.000\Desktop\123.sav

Descriptive Statistics

	Mean	Std. Deviation	N
Smartphone Addiction (SAS-IV)	31.78	10.806	144
Loneliness (UCLA-Version 3)	45.46	9.576	144

Correlations

		Smartphone Addiction (SAS-IV)	Loneliness (UCLA-Version 3)
Smartphone Addiction (SAS-IV)	Pearson Correlation	1.000	.029
	Sig. (2-tailed)		.732
	N	144.000	144
Loneliness (UCLA-Version 3)	Pearson Correlation	.029	1.000
	Sig. (2-tailed)	.732	
	N	144	144.000

Appendix K

SPSS Output: Correlation between Smartphone Addiction and Loneliness in Female

Correlations

[DataSet1] C:\Users\TEMP.KHPQ14.000\Desktop\Wong.sav

Descriptive Statistics

	Mean	Std. Deviation	N
Smartphone Addiction (SAS-IV)	29.66	8.319	151
Loneliness (UCLA-Version 3)	43.66	9.854	151

Correlations

		Smartphone Addiction (SAS-IV)	Loneliness (UCLA-Version 3)
Smartphone Addiction (SAS-IV)	Pearson Correlation	1.000	.273**
	Sig. (2-tailed)		.001
	N	151.000	151
Loneliness (UCLA-Version 3)	Pearson Correlation	.273**	1.000
	Sig. (2-tailed)	.001	
	N	151	151.000

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

Appendix L:

Turnitin Originality Report

FYP2_Smartphone Addiction & Loneliness			
ORIGINALITY REPORT			
11%	6%	5%	8%
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