



THE RELATIONSHIP BETWEEN LONELINESS, LIFE SATISFACTION AND
INTERNET ADDICTION AMONG YOUNG ADULTS

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ABSTRACT

A cross sectional was occupied in this study to examine the relationship between loneliness, life satisfaction and internet addiction among young adults. A total of 300 undergraduates from UTAR Perak campus were participated through convenience sampling. A self-administered questionnaire which consisted Internet Addiction Test, Satisfaction with Life Scale, and UCLA Loneliness Scale Version was employed. Travis Hirschi's Social Bond / Social Control Theory was adapted in this study to explain the relationship of loneliness and life satisfaction, and internet addiction. Pearson Correlation was employed and revealed significantly positive relationship between internet addiction and loneliness ($r = 0.675$); meanwhile the relationship between internet addiction and life satisfaction were also found to be significant but negatively associated ($r = -0.501$). Furthermore, multiple linear regression was run to figure out the predictor of internet addiction between loneliness and life satisfaction and findings showed two predictors statistically significantly predicted internet addiction, $F(2, 297) = 150.999$, $R^2 = .504$. Specifically, loneliness best predicted internet addiction. Lastly, male ($M = 49.56$, $SD = 12.49$) and female ($M = 46.28$, $SD = 12.78$) differ significantly in internet addiction, $t(298) = 2.232$. All the results were analyzed with SPSS 23.0 software.

Keywords: Internet Addiction, Loneliness, Life satisfaction, Young Adult, Travis Hirschi's Social Bond / Social Control Theory

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CHAPTER 1

INTRODUCTION

Background of study

The number of internet user has been dramatically increase over the years due to the growth of technology and the creation of the internet. Internet nowadays has become more and more important and much influencing in our daily life among people especially adolescents and young adults. It continually brings benefits for us such as performing duties, access to information, entertainment and social interaction to contact people in different places if it was utilized it properly. It seems that the internet has become the most important tools for human being in this world of information technology (Shahnaz & Karim, 2014). According to Internet World Stats (2015), the data showed that the internet users in Asia was 47.8% meanwhile 52.2% of the rest of the world. In 2015, South Korea has highest percentage of internet user among Asia which is approximately 92.3% followed by Japan which is 90.6% and the population of Hong Kong who is using the internet was 80.5%. In Malaysia, approximately 67.5% of Malaysians are using the internet and that is nearly 556% of 2000's figure.

However, internet not only assists people in daily life, it brings bad consequences at the same time when it is being misused and to the worst it brings people into internet addiction. Internet addiction (IA) is problematic internet usage, compulsive behavior which affects normal living (Shahnaz & Karim, 2014). To the worst it contributes to interpersonal, behavioral, psychical, psychological problem (Alam et al., 2014). An internet addicted person may suffer other psychological symptoms such as the symptoms of depression, loneliness, and some other problems at the same time (Karapetsas, Karapetsas, Zygoris & Fotis, 2015).

The term Internet Addiction was originally a joke in 1996 by Dr. Ivan Goldberg on an online research discussion saying that an Internet Addiction support group was needed. However, his “joke” attracted overwhelming responses from people who show serious concerns about his definition of Internet Addiction, as they took his joke as a serious explanation of the issues they were facing. He then realized that these people were actually needed help (DiNicola, 2004). At the same year, Internet Addiction was also presented by Dr. Kimberly Young as a new clinical disorder in the 104th annual meeting of the American Psychological Association in Toronto, Canada. Pathological Gambling was used as a model in her definition of Internet Addiction. At the same time, a brief eight-item diagnostic questionnaire was formed as a screening tool by modifying the criteria for pathological gambling (Young, 1996).

Evidences show that internet addiction is getting serious in the world. A study revealed that the prevalence of internet addiction across in 7 regions 31 nations averaged at 6% which is around 182 million people. In this report shown that 7.1% of internet addiction in Asia (Woollaston, 2015). Alexander (2014) stated that China and South Korea have some of the highest rates of internet addition with estimating 30% of the population in each country. In Malaysia, internet addiction is widespreading and putting the country amongst those with the highest addiction rates in the Asia-Pacific region (Lim, 2014). Psychiatric Consultant Dr. Muhammad Muhsin, who is also the deputy chief coordinator at University of Malaya Centre for Addiction Sciences said that Malaysia is in the high risks of emerging a segment of society that are internet addicts in the foreseeable future (Kamini, 2014).

Loneliness and life satisfaction are one of the concern in this study. People with loneliness are basically in the situation which live alone or without social interaction with other people (Karapetsas et al., 2015). To be more specific, loneliness consists of emotional loneliness and social loneliness. Emotional loneliness refers to a person who does not have

an important figure, whereas social loneliness is the absence of a social friend (Bernard, 2013). It is clear to see that a person who is experiencing loneliness is unable to relate to social needs and failed to satisfy personal needs as well when the number of social awards decreased (Oguz & Cakir, 2014). On the other hand, as mentioned by Veenhoven (1996), life satisfaction indicates how well people succeed in life regardless of mental or physical health. It is an important index of 'apparent' quality of life. To put it in a simple way, it is how much an individual love the life he or she is heading to.

Problem Statement

The technology of the internet is developing rapidly over the year, and it is getting more and more meaningful to the human society. Internet holds several functions in human's life including entertainment, updating information, communications and other purposes. Yet when it is being abused, it turns out to be internet addiction. It becomes a problem to be reckoned and affects users' lives intensely in various aspects around the worlds in recent years (Shahnaz & Karim, 2014). It gets people into physical health problems such as unhealthy eating habits, sleeping problem, reduced physical activities with the results of affecting their concentration span in school as well and even socially isolated due to their lack of interaction with the real world (Ling, 2014).

For instance, South Korea is a technologically advanced country, where 98 percent of households have broadband and about two-thirds of population own at least a smartphone. The National Information Society Agency (NIA) reported that 160,000 children in South Korea from the age range of five to nine are found addicted to the internet via smartphones, tablets or PCs. Problems were being reported which ranged from neglecting to take lunch at school to not participating in gym class just because they are obsessed to their mobile devices. The article even mentions that addiction may begin as ahead of schedule as age of

three (Kaiser, 2012). In 2005, BBC reported that a South Korean man died after playing an online video game for 50 hours without a break. The police said that the man had not sleep for the whole 50 hours and had eaten very little properly (Moodley, 2015).

In 2013, government of Japan has conducted a survey among 2600 teenagers and the results shown that 60% of high school students in Japan have strong sign of digital addiction. It is believed that the percentage of internet additions has been even increased in 2015. One of the interviewees said that she uses internet as long as she has leisure time, since morning when she is awake until she sleeps, whereas another interviewee is found addicted to internet by way of chatting with friends on a mobile application called LINE. When she fails to do so, she feels lonely and disconnected with the context (Ozawa, 2015). A professor named Tao Ren, who established the first internet addiction clinic in the world, stated that most of the patients with internet addictions are withdrawing from family life, some stop bathing, and some even wear diapers to avoid bathroom trips due to unwillingness to take breaks from playing video games with their online partners. It has clearly shown that family disruption and separation are common issues with internet addiction (Fisher & Geldin, 2015).

Meanwhile, Southeast Asia has the most active internet users among the world, users in Indonesia, Thailand, Philippines, Vietnam and Malaysia averagely use internet more than 5 hours a day. This is the reason people who are using smartphones are easily spotted everywhere every day. Facebook is currently one of the most popular online social networking site among Malaysians. It is shocking to see that there are 10.4 million Facebook users in Malaysia of which 3.5 million are youth aged between 18 and 24 (Kemp, 2015). In the past, children were recognized as active and energetic before the growth of technology, yet children nowadays look at device screen all the time. According to a study by Universiti Kebangsaan Malaysia and Nestle on 100 respondents of children, only 27 percent are engaged in physical activities during their free time (Ling, 2014).

The same goes to loneliness. Back to the past, loneliness only happened in elderly yet now the trend changed. It shows the tendency is moving towards young generation. Griffin (2010) reported that 36% of samples in his study who range from the ages of 18 to 34 years worry about feeling lonely. For instance, loneliness occurs among college students due to being new in an unfamiliar environment and thus they choose to engage in internet activities rather than interact with other people (Trinity College Foundation Studies, 2015). Moreover, the link between life satisfaction and internet addiction is still an argumentative area currently as life satisfaction and internet addiction are claimed by numbers of researches that they are correlated with each other. Those findings provided some understanding about how relationship of internet addiction is indirectly related to life satisfaction. However as mentioned by Shahnaz and Karim (2014), the direct relations of internet addiction with life satisfaction is still questionable.

Consequently, based on the problem statements, the following research questions were addressed:

1. Is there a significant gender difference in internet addiction?
2. Is there any significant relationship between internet addiction and loneliness?
3. Is there any significant relationship between loneliness and life satisfaction?
4. Is there any significant relationship between internet addiction and life satisfaction?
5. Which is the unique predictor of internet addiction between loneliness and life satisfaction?

Research Objectives and Hypothesis

General Objective

The objective of this study is to determine the relationship between loneliness, life satisfaction and internet addiction among young adults.

Specific Objectives

This study is carried out to fulfil the following research objectives:

1. To inspect gender difference in internet addiction among young adults.
2. To determine relationship between internet addiction and loneliness among young adults.
3. To investigate relationship between loneliness and life satisfaction among young adults.
4. To identify relationship between internet addiction and life satisfaction among young adults.
5. To examine the unique predictor of internet addiction between loneliness and life satisfaction.

Hypotheses

H 1: There is significant gender difference in internet addiction among young adults.

H 2: There is significant positive relationship between internet addiction and loneliness among young adults.

H 3: There is significant negative relationship between loneliness and life satisfaction among young adults.

H 4: There is significant negative relationship between internet addiction and life satisfaction among young adults.

Significance of Study

According to Cash, Rae, Steel, and Winkler (2012) internet addiction has become an alarming issue as it ruins lives by causing neurological complications, psychological disturbances, and social problems. However, Malaysians are still having low awareness on problematic internet use and thus this study is very important in helping to bring awareness on internet addiction in people's lives by giving them a better understanding of internet addiction. This study also provides information on the strength of internet addiction affected by loneliness and life satisfaction which in turn provides baseline information on current status of internet addiction to future researchers.

With these findings, university or college admins could realize the popularity of internet addiction among undergraduates who are young adults and thus they could implement programs to bring awareness of internet addiction in universities or colleges. This helps young adolescents to be aware on time using internet and preventing them addicted to internet. Even after attending those programs and they find out they got addicted, undergraduates know they can seek proper help in university. Lastly, this study is important to the extent that it is helpful for medical line in local as it inspires healthcare professionals such as counselors, clinical psychologists, and psychiatrists to be aware of internet addiction among their clients, patients or even public so that preventions and early interventions are implemented without delay.

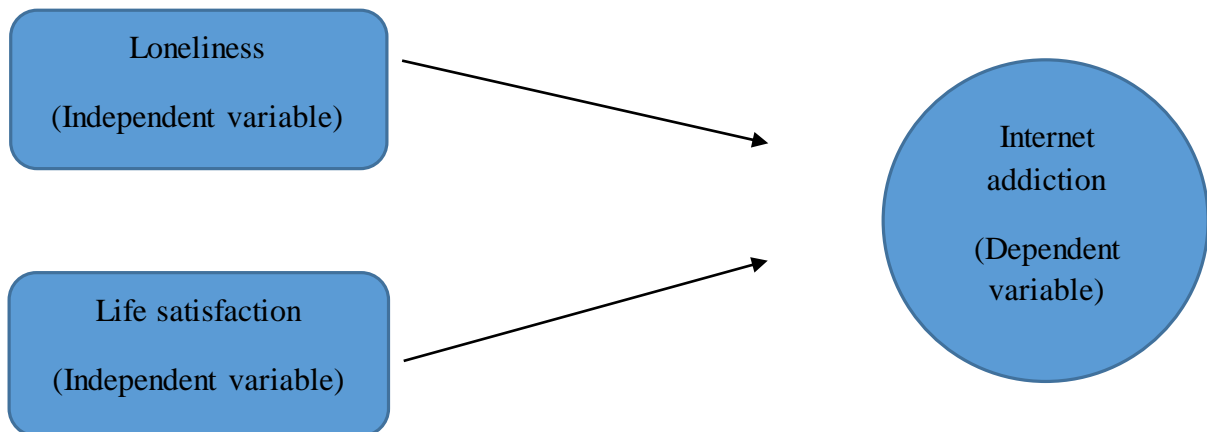
Conceptual Framework

Figure 1.1 Conceptual Framework of the Study on “The Relationship between Loneliness, Life Satisfaction and Internet Addiction Among Young Adults”.

There are two independent variables and one dependent variable in this study which are loneliness, life satisfaction, and internet addiction respectively. Findings of the research from Karatpesas et al. (2015) showed a direct relationship of loneliness and addiction to the internet among teenagers. Therefore, in this study we would like to investigate the relationship between loneliness and internet addiction among young adults. The strength and direction of the relationship is one of the interest of this study.

At the same time, the covariation of life satisfaction and internet addiction is also one of the concern of this study. In other word, whether there is linear relationship between these two variables and how strong or weak are they correlated with each other. Furthermore, in a multiple relationship, the two independent variables are used to predict internet addiction and we are keen to find out whether loneliness or life satisfaction is the best predictor of level of internet addiction since there are not much researches link these three variables at the same time.

Operational Definitions

Loneliness. Loneliness is measured by UCLA Loneliness Scale Version 3, a 20 items scale measuring subjective feelings of loneliness and also feelings of social isolation. The higher score indicates greater loneliness.

Life Satisfaction. Life Satisfaction is measured by Satisfaction with Life Scale, a 5 items scale measuring one's life satisfaction. The higher the score, the greater the level of satisfaction.

Internet Addiction. Internet Addiction is measured by Internet Addiction Test (IAT). A 20 items measure of addictive use of internet. Higher total scores of IAT indicates higher level of internet addiction.

Conceptual Definitions

Loneliness. A personal sense of absent of desired friendliness, intimacy and social interaction with others (Thomas, 2015).

Life Satisfaction. Rather than present emotions and feelings, life satisfaction is defined as general self-evaluation of one's life as a whole (Irvine, 2015).

Internet Addiction. Internet addiction is an impulse control disorder that does not involve an intoxicating substance (Young, 2004). It is defined as a person's incapability to regulate his or her internet usage, which in time result in problems to psychological, social, school and/or work in an individual's life (Young & Rodgers, 1998).

CHAPTER 2

LITERATURE REVIEW

Travis Hirschi's Social Bond / Social Control Theory

Hirschi's social bond theory, later also known as social control theory was introduced together with his seminal work *Cause of Delinquency* in 1969. Generally, his theory has been one of the most significant theory of delinquency. 71 studies that examined Hirschi's theory has been done between 1970 and 1991. Essentially, his theory was not intended to explain the motivation for delinquency, supposing criminal motivations are inborn in human, but in clarifying the purpose of not committing it. In other words, his main objective was to illustrate what stops youths from committing delinquent behaviors (Özbay & Özcan, 2006).

According to Hirschi's social bond theory, social bonds consist of four main elements which are attachment, commitment, involvement and belief. Attachment concerns a person's affect with regard to prosocial others and societies. He stated that youths are unlikely to act in delinquent way when they have close attachment to parents, peers, and teachers. For example, in order to not disappoint the loved one with the misbehaviors, a person may choose to conform to the norms. Apparently it pointed out in what way attachment control behavior.

Commitment refers to a social relationship that an individual appreciate, which they desire to retain and would not risk to destroy by involve in crime or deviant behavior. Indeed, youngsters are less likely commit delinquent acts if they are passionate about spending energy and time with some activities. Moreover, they would not want to look bad in those who opinion matter to them which in turn losing their friends, scholarship and so on by committing deviant acts.

Involvement touch upon the opportunity costs related with how individuals spend their time. People would not spend their time involve in delinquent activity if they are

spending time in prosocial behavior. For example, a youth who are spending most of the time in school, work or family activities will not at the same time involve in stealing things, vandalism and so on. This is because they do not have the time do so or at least during that time, they will not be doing any antisocial activities.

Lastly, belief includes pro-social values or thoughts that conform to the norms or laws. Likelihood of youth engaging in deviant behavior depends on how important that values are to the individual. The more important the values they hold, the less likely for them to involve in delinquency. For instance, instead of value the idea of attending school, a student value more on going to cyber café is simply more likely to just do it. On the other hand, students who share the belief of 'skipping school is wrong' is less likely to involve in such act (Acton, 2015).

In this study, Hirschi's social bond theory was used to explain the relationship between the three variables. In his view, faults in each of the four elements of the social bond in a person can result in the growth of deviant behavior (Farhadi, Movahedi, & Almasian, 2014). Deviant behavior was defined as behavior that is known as violating expected norms and rules (Bala & Daniel, 2013). Thus, internet addiction can, in a way, considered as a type of deviant behavior (Farhadi, et al., 2014). Additionally, as mentioned early in conceptual definition, loneliness can refer to a person with social interaction. Apparently it relates to attachment and commitment in this theory which an individual without social interaction is unable to develop social relationship. While life satisfaction relates to involvement which Pinto and Neri (2013) stated that involvement in social activities can bring benefits such as increment of life satisfaction.

In short, if internet addiction was considered as a type of deviant behavior, and loneliness and life satisfaction relates to the elements of social bond, then it is assumed that

existence of loneliness and problem in life satisfaction can lead to internet addiction. Hence, Hirschi's social bond theory supported this study.

Loneliness and Internet Addiction

Over the recent years, researches indicated that internet addiction brings problems in several different fields of young people especially mental health. Loneliness is one of the mental illness that may be caused by internet addiction and it refers to an individual spending time either alone, or without any communication with people around him. In the beginning, internet was expected to assist in addressing loneliness, depression and low self-esteem to fill the gaps in the modern lifestyle. Yet in contracts, it worsens or even amplifying the existing problems (Karapetsas, et al., 2015).

Adolescents is one of the group who are always being associated with internet addiction. A recent study by Moslehpour and Batjargal (2014) which involved Mongolian and Malaysian teenagers as online respondents has found out that loneliness, stress, and online friends become the contributing factors to internet addiction. Similarly, in Greek, another research was carried out by Karapetsas et al. (2015) found high positive correlation between internet addiction and loneliness among teenagers. Therefore, it could be seen that loneliness is more likely to have association with internet addiction and even loneliness is causing internet addiction among adolescents.

Similar study was being carried out among college students in India. Radhamani and Arulsamy (2012) suggested that students who are addicted to internet consistently withdrawing themselves from real life into fantasy world because they need full privacy when they are surfing internet. As a result, greater use of internet affects their social life and causes loneliness. This study found significant relationship between internet addiction and

loneliness among college students. It also showed male students are more addicted to the internet than female students but male students are not able to reduce the usage of internet.

Besides children, students, or young adults, internet addiction occurs in teachers as well. In Turkey, Oguz and Cakir (2014) conducted a study to expose the relationship between the level of loneliness and internet addiction among teachers. Marital status, age, occupation, internet accessibility at home and time spent online daily were not found significantly different in the level of loneliness. Yet, level of loneliness in gender shows differences in which male teacher candidates have higher level of loneliness compared to female teacher candidates because female is found to be more active in social than male. A medium level of positive relationship was shown between internet addiction and loneliness of teacher candidates.

Other than teachers, 247 pre-service teachers in Turkey were involved in the study by Demirer, Bozoglan, and Sahin (2013) and showed the similar outcomes even they are conducted in different year. The study was interested in examining internet addiction among pre-service teachers in term of gender, internet accessibility, loneliness and life satisfaction. The findings showed a positive correlation between loneliness and internet addition and it is probably because of peculiar characteristic of Turks of being sociable and preferring face-to-face communication.

As the internet becomes part of people's life, social networking sites are blooming like mushrooms after the rain. The most well-known social networking site belong to Facebook undoubtedly, with millions of active users every day. Facebook mainly functions as a virtual platform for society contacting and connecting people around the world as the technological communication on Facebook is as similar as face-to-face communication. A recent research was conducted in University Sabah Malaysia by Hon and Chua (2015) described that the lonely students were more likely to feel fear when receive a lesser reward

in face-to-face communication than students who do not feel lonely. The second findings of the research revealed Facebook use was not a significant predictor on social approach avoidance, yet loneliness was a significant predictor on social approach avoidance.

Rooij, Mheen, Eijnden, and Schoenmakers (2011) proposed that the internet addicts try to cope depressive symptoms such as loneliness by developing online relationship as they find refuge on the internet. Similar finding was obtained in another different research which was done by Serrano, Matali-Costa, Serrano-Troncoso, Pardo, Villar, and San (2014), they found 50% of internet addicts, who are the participants of the study, using internet as a shelter or to seek refuge. As a result, this causes the addicts fails to socialize or interact in real life.

Life Satisfaction and Internet Addiction

There are limited research discussing the relationship between life satisfaction and internet addiction. Thus this study takes life satisfaction into concerns to understand more about it. One of the research was carried out in Luxemburg by Penard, Poussing, and Suire (2013) aimed to find out whether if internet use affect life satisfaction. They stated that this question did not received enough attention from scholar as it is important to understand the influence of internet on individual well-being when it plays a significant role in people's daily life. Their findings indicated that there were significant differences in life satisfaction between internet user and non-internet user but there were no significant differences between heavy user and light user. They found a significant negative relationship between non-use of internet and life satisfaction, which mean not using internet will in result in increased life satisfaction. In other words, internet use significantly decreases life satisfaction regardless of the usage of internet. Additionally, they found out that use of internet brings long term effect, which influenced more on life satisfaction than on happiness. Lastly, they did not

deny the benefits of internet as they found that internet benefits better for the young generations and those who are unsatisfied with their income.

As mentioned in earlier part of this study, a research conducted by Demirer, Bozoglan, and Sahin (2013) aimed to examine the pre-service teachers' internet addiction in term of gender, internet accessibility, loneliness and life satisfaction. Corresponding to the study above, they also found that internet addiction was negatively correlated to life satisfaction level. In another research in Bangladesh examined the effect of internet addiction on young adults' life engagement and life satisfaction showed that internet addiction significantly and negatively influences on both life engagement and life satisfaction. If internet addiction hindered an individual's life satisfaction level, it will be tough for them to involve in activities that withstand their life and make it meaningful. Therefore, these findings supported the statement that a person who is addicted to internet would have low life satisfaction, which, in turn, would result in reduced life engagement. This research also stated that university students, as a part of young segment, are defenseless against internet addiction. Factors such always having free time, using free time badly, free and fast internet access and internet use for educational purpose increased risk for internet addiction for the young group (Shahnaz & Karim, 2014).

Further evidence has been found by the research of Cao, Sun, Wan, Hao, and Tao (2011) aimed to explore the occurrence of problematic internet use among teenagers aged 10 to 24, and to examine the relationships among psychosomatic symptoms and life satisfaction and problematic internet use revealed that psychosomatic symptoms was positively related to problematic internet while there was also negative relationship between life satisfaction and problematic internet use when demographic and internet-related factors were adjusted. However, when the factors were not controlled, only three out of six psychosomatic symptoms which were behavioral symptoms, motional symptoms and social adaptation

problems were significantly associated with problematic internet use while life satisfaction significant associated in either condition.

While most research studies on the relationship between life satisfaction and internet addiction suggested that people who have internet addiction are less satisfied to their life, however, there are still some researches showed contradict results. A recent research in Turkey conducted by Aktepe, Olgaç-Dündar, Soyöz, and Sönmez (2013) studied the possible internet addiction and associated factors in high school students in the city centre of Isparta has found low level of loneliness and high level of life satisfaction in possibly internet addicted group. Besides, it has been found that they mostly use internet for communication, for example to make new friends and chat online. Possibly addicted group use internet as a social support may be thought to lower the level of loneliness, thus positively influencing life satisfaction. Yet, online relationships can gradually reduce the need for and hard work to form real social relations. The social support acquired through the internet is just temporary and may not last in real life. Social isolation may cause by the absence of solid, excellence relationships in online relationships.

Factors contributing to Internet Addiction

Contributing factors of excessive internet usage among young adults are varies but most of them are environmental factors and individual own self-regulatory quality. Parents play an important role in predicting internet addiction as they are assumed to be the closest person to an individual. A research is done by Moazedian, Taqavi, HosseiniAlmadani, Mohammadyfar, and Sabetimani (2014) to discover the effect of parenting style on internet addiction among young adults. There are four types of parenting style which is neglectful, permissive, authoritarian and authoritative which was developed by Diana Baumrind. This research has proved that parenting styles are significantly differed in internet addiction.

Among the four types of parenting styles, authoritarian parenting style shows the highest level of internet addictions. This may be due to lack of support and concerns from parents and thus leading them to look for concern and connection from online friends. Conversely, permissive and authoritative parenting styles show lower levels of internet addictions because adolescents who come from a warmth and kindness family are raised with love and respect.

In addition, friendship is the core focus in the life of a teenager or emerging adult. Enrolling in friendship-seeking or communicating with peers through online excessively could cause internet addiction. Besides that, transition from teenager to emerging adult also contributes to internet addiction because the time meets with friends face-to-face is reduced and here comes the feeling of loneliness. Hence, to compensate the lost or weakened friendship, internet which is easy assessable and turn up to be their first choice when they feel lonely. This was proved by the research conducted of Smahel, Brown, and Blinka (2012) which revealed that individuals who prefer seeking and communicating with friends online reported higher levels of internet addiction, which probably their communication patterns led to a style or level of internet activity that equivalent to addictive behavior.

Chapter Summary

Travis Hirschi's Social Bond / Social Control Theory was used to explain Internet addiction in this study. This theory aimed to explain the reason behind youths conform to norms and law instead of explain why they offend them. He suggested that there are four kinds of social bonds which are attachment, commitment, involvement and belief. He believed that poorness in any of these social bonds can lead to development of delinquency or deviant behaviors which is internet addiction in this study.

Numerous findings from different countries which studied loneliness, life satisfaction and internet addiction proposed that both loneliness and life satisfaction are significantly

associated with internet addiction. Moreover, even researchers in Malaysia are discussing on the issue of loneliness and internet addiction. However, in Malaysia, there is still no study that look at the relationship between life satisfaction and internet addiction. Furthermore, there are other factors that contributing to internet addiction. Parenting styles are significantly differed in internet addiction while authoritarian parenting style is associated with internet addiction. Friendship and internal factors of an individual such as neuroticism, extraversion, psychoticism, lying variables and openness to experience has proved to associate with internet addiction. Generally, most of the studies examined how internet addiction causes other issues. However, in this study is exploring how these issues such as loneliness and life satisfaction affect internet addiction.

CHAPTER 3

METHODOLOGY

Research Design

A cross sectional study, which is an observational research method, was employed to examine the relationship between loneliness, life satisfaction and internet addiction among young adults. It was useful for this study because it was suitable to prove assumptions which there are three hypotheses in this study, to capture a specific point in a time, to identify associations which this study is interested in the relation between internet addiction and two other variables (Mann, 2003). It was relatively inexpensive and takes up little time (months) to conduct as well as easy to access outcomes and risk factors (Levin, 2006) and it suits students like us who are doing Final Year Project which need to finish it in months and have only low budget.

Location of Study

The study was conducted at University Tunku Abdul Rahman (UTAR) Kampar campus in Perak. UTAR Kampar campus was chosen as the research location as it is being one of the largest tertiary education institutions in Malaysia with large population of undergraduate students. UTAR comprise of two campuses; Kampar and Sungai long respectively. Kampar campus is the main campus of UTAR where it comprised great resources of young adults (more than 10,000 students a year). Furthermore, it assembles students from all states of Malaysia including Sabah and Sarawak as well, consequently it becomes more convenient for this study to access samples from different states at a location. Therefore, it is to say that instead of only Kampar undergraduates, results of this study are applicable to the Malaysian undergraduates.

Research Sample

A total of 300 of undergraduates from UTAR Perak campus were invited to participate in this research. Almost half of the total sample (56.33%) were female (n=169) and 43.67% of participants were male (n=131). Age of the participants ranged from 18 years to 27 years. Participants who are young adults was chosen in this study because most of the past researches mainly concentrated on the internet addiction among teenagers (Aydin & Sari, 2011; Heo, Oh, Subramanian, Kim, & Kawachi, 2014; Yong, 2011; Pontes, Griffiths, & Patrão, 2014). However, impact of internet addiction on young adults should not be overlooked and thus this study decided to focus just in young adults and internet addiction.

Sampling Method

Convenience sampling was employed to collect samples for this study. It is a non-probability sampling method which require less time and cost hence it allowed us to approach respondents easily, quickly, and economical. This sampling method was chosen because it can be carried out easily with little rules restricting the sample collecting (Mugera, 2013). Due to the common phenomena of internet addiction among young adults (Teong & Ang, 2016) plus UTAR Kampar contains plenty of young adults. Therefore, the target sample can be easily found along the campus and thus convenience sampling worked well for this study.

Instruments

A self-administered questionnaire which contains of four sections, section A to section D, was designed to collect the required data. This questionnaire combined three reliable and validated tests which were Internet Addiction Test, Satisfaction with Life Scale, and UCLA Loneliness Scale Version 3. Seven questions to collect demographic information of respondents were created as well.

Demographic information of respondents was obtained by asking seven closed-ended questions in section A of the questionnaire. Respondents were asked to write down their age in the first question whereas the following questions were answered in type of multiple closed-ended questions which they could tick in the boxes provided to choose the particular answer. The second until seventh question were asking for gender, ethnicity, place of residence, relationship status, possessions of smartphone(s), and ways to access internet.

Internet Addiction Test (IAT)

IAT was used to measure internet addiction and it was located as section B in the questionnaire. It is a 20 items in 5-point Likert scale to measure the level of addictive use of the internet. 20 is the minimum score of internet addiction meanwhile 100 is maximum score. A higher total score of IAT reported higher levels of internet addiction. There were three categories of score which included 20-39 showing an average score, 40-69 showing frequent problem and the high rate of score 70-100 indicating the respondents were addicted to the internet (Widyanto & McMurrin, 2004). The reliability and validity of the IAT were in the acceptable range, which were coefficient of Cronbach alpha of 0.90 while Spearman Brown of 0.86 (Keser, Esgi, Kocadag & Bulu, 2013). In the past year study, researchers used exploratory factor analysis to confirm the construct validity while application of confirmatory factor analysis to determine the accuracy of the factor model.

Satisfaction with Life Scale (SWLS)

To measure respondents' global judgment of life satisfaction, this 5-item scale was used in section C of the questionnaire (Pavot & Diener, 1993). The 5 items consist of 7-point Likert scale that sorts from 1 to 7 which is from strongly disagree to strongly agree as respondents specified how much they agree or disagree with each of the items. The higher the score, the greater the level of satisfaction. The SWLS reported high reliability in internal consistency and temporal reliability with coefficient alpha of .87 and a 2-month period of

test-retest coefficient of .82. It shows that SWLS is suitable to use with a wide range of populations (Diener, Emmons, Larsen & Griffin, 1985).

UCLA Loneliness Scale Version 3

UCLA was used as section D of the questionnaire. It is a revised version and evolution from both of the original UCLA Loneliness Scale and the Revised UCLA Loneliness Scale (Russell, 1996). It is 20-item scale measuring subjective feelings of loneliness and feelings of social isolation. There are 9 reverse-scored items which are items 1, 5, 6, 9, 10, 15, 16, 19 and 20. Respondents rated each item on a scale from 1 which is “never” to 4 with “always”. All the scores for each item were summed up. A higher-score indicated a greater level of loneliness. The results of the scale have high reliability in internal consistency (coefficient alpha from .89 to .94) as well as test-retest correlation over 12-month period of .73. The validity of this scale was supported by significant relationships with measures of the sufficiency of the individual's interpersonal relationships, and by associations between loneliness and the health and well-being (Russell, 1996).

Procedure of Data Collection

A questionnaire was first developed by compiling three measures namely Internet Addiction Test, Satisfaction with Life Scale, and UCLA Loneliness Scale Version 3. Content validity was obtained by project supervisor and pilot test was then conducted in library of UTAR Kampar campus. Thirty self-administered questionnaires were distributed face-to-face and these samples were not included in the actual study. Respondents were first explained with the purpose and objectives of this study, then the informed consent was signed by respondents as an agreement to participate in this study. Every section in the questionnaire were briefly introduced by the researchers. Averagely, respondents spent around 14 minutes to finish the questionnaires. In case of any enquiry, researchers were

standing at a distance that could be reached by respondents anytime. Once the questionnaire was done, researchers collected the questionnaires.

After the pilot test is done, three hundred questionnaires were distributed in the library of UTAR Perak campus in two days (19th and 20th January 2016). Library was chosen as the setting because it consists of students from different faculty as well as the environment has less disturbance and distraction. The same steps of approaching respondents in pilot test were done. After approaching the students, the first thing was to explain the purpose of the study, written informed consent, and contents in English to get their agreement in answering the questionnaire. Respondents were required to indicate a signature at the bottom of the informed consent as an agreement to participate in this study. Questions or words that respondents did not understand were explained in simpler words or terms. Averagely, time taken by a respondent to complete the questionnaire was 14 minutes. Questionnaires were collected from respondents once they have completed it.

Reliability

Reliability test result of the pilot study was computed by using Statistical Package for Social Sciences (SPSS) version 23.0 and found the questionnaire was highly reliable with the alpha Cronbach's coefficient ($\alpha = .953$) for Internet Addiction Test; alpha Cronbach's coefficient ($\alpha = .677$) for UCLA Loneliness Scale Version 3; while alpha Cronbach's coefficient ($\alpha = .902$) for Satisfaction with Life Scale. Summary of the results of pilot test was shown in Table 3.1 below.

Table 3.1

Reliability of the Instrument

Variable	No. of Items	Cronbach Alpha		
		Past Study	Pilot Study	Actual Study
Internet Addiction Test				
(IAT)	20	.86 - .90	.95	.90
UCLA Loneliness Scale				
Version 3	20	.89 - .94	.68	.85
Satisfaction with Life				
Scale (SWLS)	5	.87	.90	.77

Data analysis

Obtained data was analyzed using SPSS 23.0 software for both (i) general descriptive statistics including age range, gender, ethnicity, place of residence, relationship status and whether participant own smartphone(s) and (ii) inferential statistics which used to discover Pearson Correlation Coefficient, T-test, as well as Regression. The significant gender difference in internet addiction which was to answer the first research question was analyzed by applying T-test. Secondly, the significant relationship between loneliness and internet addiction, significant relationship between loneliness and life satisfaction, and significant relationship between life satisfaction and internet addiction, which were to answer the second, third and fourth research question, were analyzed by applying Pearson Correlation Coefficient. Then, the predicting role of loneliness and internet addiction on Internet addiction, to answer the last research question, were investigated through multiple linear regression analysis. Significance level ($p \leq .05$) was adopted in this research.

CHAPTER 4

FINDING AND ANALYSIS

Descriptive Statistics

Background of Respondents

Table 4.1 presented the demographics of the 300 respondents in this study. The age range of the participants was from 18 to 27 years while the highest percentage of the participants were 21 years old (33%), followed by the age of 20 (23.7%). The least age groups were 25 and 27 years old (0.3% respectively). While looking at gender, more than half of the participants were the female (56.3%) yet 43.7% of participants were male. A very high percentage of Chinese participants (94.3%) were involved in this study ($n = 283$), followed by Indian (12%), while there were 7% of Ibans and only 0.3% of Malays ($n = 1$). Due to the high population of Chinese students in UTAR, most of the respondents were therefore Chinese instead of other ethnics. Although Malays are the main ethnic in Malaysia which are 63.1% in 2010 (Department of Statistics Official Website, 2015) yet most of them pursue their bachelor degree or further studies in local universities which 60% students in public universities are Malays (Tan & Sharma, 2013). UTAR is a non-profit private university and thus the Malays were the least ethnic here.

Relationship status was one of the concerns as well and Table 4.1 showed 77.3% of the respondents were in single status besides 22.7% of participants in a relationship. Most of the respondents were from urban area (60.3%) however 39.7% of them are from rural areas. This has shown that wherever the residential area of participants (urban or rural), almost all of the participants (99%) owned at least a smart phone. This indirectly associates with the higher chance of getting internet addiction among the respondents because nowadays use of smart phones for internet purposes has become a routine and number of mobile consumer

accessing the Internet is surpassing fixed line internet users (Kibona & Mgya, 2015). In Malaysia, Lee (2014) found that three in ten (30%) smartphone users fully use their devices only to access the Internet; whereas 13 million of Malaysians, 44% of the population, are active social media users on mobile (Wong, 2014).

Table 4.1

	Frequency	Percentage (%)
Age		
18	10	3.3
19	40	13.3
20	71	23.7
21	99	33.0
22	41	13.7
23	25	8.3
24	10	3.3
25	1	.3
26	2	.7
27	1	.3
Gender		
Female	169	56.3
Male	131	43.7
Ethnic		
Chinese	283	94.3
Iban	2	.7
Indian	12	4.0
Malay	1	.3
Others	2	.7
Place of Residence		
Rural	119	39.7
Urban	181	60.3
Relationship Status		
In a Relationship	68	22.7
Single	232	77.3
Have Smartphone		
No	3	1
Yes	297	99

Demographics of Respondents

Internet Addiction among Respondents

Table 4.2 shows the level of internet addiction among young adults. Median was used as the cut-off point for internet addiction. Respondent that scored lower than the value of median is considered to be low in certain variable under study whereas respondent who score higher than the value of median was believed to be high in certain variable under study. Results indicate that 143 (47.7%) respondents were involved in low level of internet addiction, and the rest of the 157(52.3%) respondents fall under high level of internet addiction.

Table 4.2

Frequency Distribution of Internet Addiction

	n (%)	Mean	S.D	Median	Min.	Max.
Level of Internet Addiction	300	47.71	12.74	47	16	81
Low (score 0-46)	143 (47.7%)					
High (score 47 – 100)	157 (52.3%)					

Note: S.D = Standard Deviation; Min. = Minimum; Max. = Maximum

Inferential Analysis

Gender Differences in Internet Addiction among Young Adults

H 1: There is significant gender difference in internet addiction among young adults.

Table 4.3 represents the gender differences in internet addiction. Independent sample t-test was conducted to find out the gender differences in internet addiction among sample of undergraduate student from University Tunku Abdul Rahman, ($N = 300$). On average, male ($M = 49.56$, $SD = 12.49$) and female ($M = 46.28$, $SD = 12.78$) differ significantly in internet addiction; $t(298) = 2.232$, $p = .026$. Since the mean for male is higher than the mean for

female, it can be concluded that males are significantly more addictive to internet compare to females. Hence, the hypothesis is accepted.

A number of studies have pointed to the significant differences of gender in internet addiction. For example, Akhter (2013) found that male students are more likely to get higher score in internet addiction than female students among university undergraduates at Pakistan. Similarly, Kormas, Critselis, Janikian, Kafetzis, Tsitsika (2011) studied the pathological use of internet among 866 random Greek adolescents and suggested that males are the majority whom reported potential pathological internet use or pathological internet use. Likewise, a study involved 1315 adolescents which conducted by Canbaz, Sunter, Peksen and Canbaz (2009) in Samsun, Turkey also indicated that pathological internet users were more likely to be males than females. In addition to these studies, Mucic and Hilty (2015) also stated that gender is one of the sociodemographic variables that have been associated with internet addiction, along with internet access, family income, place of living and also the age first contact with internet. The gender differences detected may be credited to the possible confounding outcome of the discrepancy rate of internet use between genders. Precisely, since males use the internet more often and comprehensively than females, the hours of internet may be the possible confounder for internet addiction (Korma et al., 2011).

However, some other studies found contradictory results which they do not find any significant gender differences in internet addiction. Choi, Son, Park, Han, Kim, Lee, & Guak (2009) did a study on 2336 high school students in South Korea and revealed that gender does not significant influence internet addiction. A recent study carried out by Koukla, Mangoulia, & Alexiou (2014) also stated that the gender difference in internet addiction among Greek university students was not statistically significant. However, the reason behind the diminishing of gender differences in internet addiction may be the internet can now be a place where females can use to express themselves without restrictions, and as

compensation to real life which female are shy and being discriminate, thus lead them into internet addiction.

Table 4.3

Gender Differences in Internet Addiction

	Male		Female		<i>df</i>	<i>t</i>	95% CI for Mean Difference	<i>p</i>
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>				
	Internet Addiction	49.56	12.49	46.28				

Note: * $p < .05$.

Relationship between Internet Addiction, Loneliness and Life satisfaction

Pearson Correlation analyses were conducted to examine the relationship between internet addiction, loneliness and life satisfaction among young adults. Table 4.4 shows the correlations among Internet Addiction, Loneliness and Life satisfaction.

H 2: There is a significant positive relationship between internet addiction and loneliness among young adults.

The results of Pearson Correlation indicated that there was a significant positive relationship between internet addiction and loneliness among young adults ($r = 0.675$, $N = 300$, $p < 0.05$). This means that the higher the level of internet addiction among young adults, the higher is their level of loneliness. Thus, the hypothesis is accepted.

This finding is consistent with several findings in the previous literature review. On the association between these two variables, many studies from countries around the world have found the connection as well. In Pakistan, similar result is found in a research conducted among two universities. It proposed students who are internet-addicted feel lonelier or more isolated compared to those non-addicted students (Saleem, Tufail, Khan, & Ismail, 2015). Similarly, research by Odaci and Kalkan (2010) supported the result that both these variables positively correlated among young adult undergraduates in Turkey. While in Hong Kong, college students ($N = 361$) was involved in a cross-lagged panel survey conducted by Yao and Zhong (2014) and the findings revealed the cycle of loneliness and internet addiction. They found out internet addiction is more likely causing the growth of loneliness.

This link was also tested among different samples in other studies. One of the recent studies by Karapetsas et al. (2015) claimed that adolescents who are addicted to the Internet have higher rates of loneliness compared to those non-addicted teenagers. Additionally, Pontes, Griffiths, & Patrão (2014) have conducted a study with 131 Portuguese school children and adolescents in Lisbon, Portugal and results also showed that severely lonely students displayed higher levels of IA than those who were not lonely. On the other hand, a large amount of samples ($N = 1157$), who aged 11 to 19 years old, were included in the study by Koyuncu, Unsal, and Arslantas (2014). As a result, they found out the lonelier middle and high school students are, the more they addicted to internet and vice versa. However, a contradict finding was discovered by Odaci and Celik (2013) in Turkey. The finding showed that internet addiction was not significantly associated with narcissism, loneliness, or self-perception among 424 public university students. However, it was found that internet addiction was positive associated to aggression and shyness.

H 3: There is significant negative relationship between loneliness and life satisfaction among young adults.

Pearson Correlation was used to investigate the relationship between loneliness and life satisfaction among young adults. Significant negative relationship was found between loneliness and life satisfaction ($r = -0.449$, $N=300$, $p < 0.001$). In other word, the lonelier the young adults, the less satisfied with their life and vice versa. Hence, the hypothesis is accepted.

Few corresponding result was found years before. Bugay (2007) studied the relationship between life satisfaction and loneliness among university students in Turkey and found that there was strong significant negative relationship between the two variables of the respondents. A year later, Tumkaya, Aybek, and Celik (2008) also found the same result among 422 students at Cukurova University in Adana, Turkey. An another research in Turkey (I know, again...), Akhunlar (2010) investigated 183 nursing students in Usak university also found significant negative relationship between loneliness and life satisfaction.

Salimi (2011), and Bozorgpour and Salimi (2012) carried out more detailed research which both research studied on the university student of Shiraz university in Iran. Multiple regression was computed to find out the predictors of life satisfaction. Coincidentally, both research suggested the same result which loneliness negatively predicts life satisfaction. It was also found that emotional loneliness negatively predicts life satisfaction more than social loneliness. The explanation given was the missing of close relationships is more hurtful than the missing of social friendships because close relationships are much harder to attain than social friendships. Bozorgpour and Salimi (2012) also suggested that lonely person tends to generally view the world and themselves more negatively.

H 4: There is significant negative relationship between internet addiction and life satisfaction among young adults.

Pearson correlation coefficient was computed to assess the relationship between internet addiction and life satisfaction among young adults. The result shows the significant negative relationship between internet addiction and life satisfaction ($r = -0.501$, $N = 300$, $p < 0.001$), which means an inverse relationship between two variables: variable X increase, a decrease in variable Y or vice versa. In the result, the highest level of life satisfaction, the lower level of internet addiction or vice versa. Thus, the hypothesis is accepted.

The finding has proved hypothesis 4 and it agreed with the findings in the literature review (Penard, Poussing, & Suire, 2013; Demirer, Bozoglan, & Sahin, 2013). In addition, this finding was also supported by a research conducted among adolescents in Turkey. The study reported significant negative correlation between internet addiction and life satisfaction that including school and family satisfaction (Telef, 2016). While in other side on earth, researchers in Bangladesh run a study to examine the impact of internet addiction on young adults' life engagement and life satisfaction. The result indicated that internet addiction significantly and negatively influences both life engagement and life satisfaction. Hence, it is assumed that a person who is addicted to internet would have low life satisfaction in his/her life (Shahnaz & Karim, 2014). Study of Cao et al. (2011) also shared similarities with this finding that they took in all Chinese high school and college students ($n = 17599$) for their study and found that internet addiction is negatively associated with life satisfaction. Coincidentally, like this study, majority of the respondents were also Chinese.

Yet, the direct relationship between these two variables is still questionable. Contradict result was found in the study by Aktepe et al. (2013) that potential pathological internet users were found to have high level of life satisfaction because they have been found to communicate with friends and family and making new friends online. Using internet in a

way of social support may lead to decrease in loneliness levels which in turn increase life satisfaction.

Table 4.3

Correlations among Internet Addiction, Loneliness and Life satisfaction

Variable	1	2	3
1. Internet Addiction	-	.675*	-.501*
2. Loneliness		-	-.449*
3. Life Satisfaction			-

Note: Correlation marked with an asterisk (*) is significant at the 0.05 level (2-tailed).

Unique Predictor of Internet Addiction

Multiple Linear Regression was run to predict internet addiction from life satisfaction as well as loneliness and the results showed in Table 4.4 was to answer the following research question:

Research Question 5: Which is the unique predictor of internet addiction between loneliness and life satisfaction?

The results show the two predictors statistically significantly predicted internet addiction, $F(2, 297) = 150.999, p < .0001, R^2 = .504, adj. R^2 = .501$. Specifically, 50.1% of the total variance is explained by these two variables. All the variables added statistically significantly to the prediction, $p < .05$. Loneliness has a higher impact than life satisfaction ($\beta = .563$ and $\beta = -.248$) on internet addiction among young adults while life satisfaction negatively predicted internet addiction. From the result, loneliness is stronger predictor of internet addiction compare to life satisfaction. This finding is consistent with the finding

among Turkish university students by Bozoglan, Demirer, and Sahin (2013). Their study indicated that loneliness was the most significant variables related to internet addiction among loneliness, self-esteem, and life satisfaction.

Some studies also relate loneliness with internet addiction and found similar results as this study which loneliness significantly predicts internet addiction. For instance, Kim, LaRose, & Peng, (2009) stated that a person who are lonely or lack of social skills could involve in uncontrollable internet use. A current study conducted by Pontes, Griffiths, & Patrão (2014) investigating 131 Portuguese adolescents and school children also found that loneliness, hours of internet use and disturbed classroom behaviors are the predictors of internet addiction. In the same year, in Turkey, Ozgur, Demiralay, and Demiralay (2014) obtained the similar findings as well among 327 university students through online survey.

It was said that social media, such as Facebook, WeChat and Instagram, is a comfortable place for loners to develop virtual relationship because they can choose to be anonymous online and their facial expressions, gestures or even appearance are unseen, thus they have the freedom to select and text anyone they want or to reject anyone online. They feel powerful and in control of everything in this way (Şenormancı, Konkan, Güçlü, & Şenormancı, 2014). In another way, those loners may also enjoy the immediate lift which is the product of mood-shifting online experiences. In turn, they are more likely to repeat the behavior again and again to the point that internet is vital and affects their daily life. In a positive side, internet can be a tool to help relieve loneliness yet it may bit by bit develop internet addiction when one is extremely depending on internet (Aktepe et. al., 2013).

Most of the studies found internet addiction impacts life satisfaction in young adults (Shahnaz & Karim, 2014; Cao et al., 2011; Telef, 2016) while the result of this study found the other way round. There are limited resources discussed on life satisfaction as one of the predictors of internet addition. Mucic and Hilty (2015) were one of them who argued life

satisfaction as a factor of internet addiction. They claimed that life satisfaction is one the factors that predicts pathological internet use in adolescents and adults. In addition, Young (1999) stated one is easily addicted to internet when he/she has low life satisfaction because they do not know other ways to cope with their problems in life other than using internet continuously. For example, when one is meeting many assignment deadlines at a time but they do not know ways to deal. As a result, they use internet non-stop as a “security blanket” to keep themselves away from the problem (Ozgun, Demiralay, & Demiralay, 2014). Still, they understand the problem has not been solved when they go offline. This kind of compensation only helps them to break free from the problem temporarily but this behavior is not solving any problem.

Table 4.4

Summary of Multiple Regression Analysis for Variables Predicting Internet Addiction

	R ²	Adj. R ²	F	SE	β	t	p
	.504	.501	150.999	4.470			
Loneliness				.064	.786	12.31	.00
Life Satisfaction				.105	-.571	-5.42	.00

F (2,297) = 150.999, *p > .05

Summary of Findings

In a nutshell, 300 respondents (56.3% of female and 43.7% of male) were involved in this study and more than half (52.3%) of the respondents fell into high level of internet addiction; 47.7% of respondents represented low level of internet addiction. The lowest score of 16 was observed in the result whereas the highest was 81 ($\bar{x} = 47.71$, $SD = 12.74$). T-test result showed significant gender difference in internet addiction, $t(298) = 2.232$, $p = .026$. Significant relationship between internet addiction and loneliness ($r = 0.675$) and

significant negative relationship between internet addiction and life satisfaction ($r = -0.501$) were found. Both variables significantly predicted internet addiction which loneliness has a higher impact ($\beta = .563$ and $\beta = -.248$).

Table 4.5

Summary of Findings

Hypothesis	R-value	P-value	Results
1. There is significant gender difference in internet addiction among young adults.	2.232	.026	H ₁ is accepted.
2. There is significant relationship between internet addiction and loneliness among young adults.	.675	.000	H ₁ is accepted.
3. There is significant relationship between loneliness and life satisfaction among young adults.	-.449	.000	H ₁ is accepted.
4. There is significant relationship between internet addiction and life satisfaction among young adults.	-.501	.000	H ₁ is accepted.

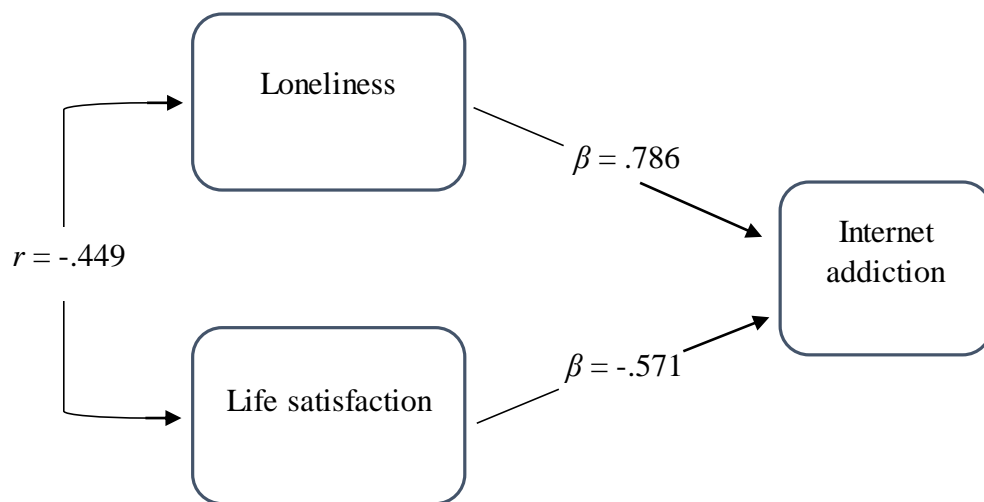


Figure 4.1. Summary of the relationship between internet addiction, loneliness and life satisfaction. This figure illustrates the findings of multiple regression between loneliness, life satisfaction, and internet addiction plus Pearson correlation between life satisfaction and loneliness.

CHAPTER 5

CONCLUSION

Summary

In the era of information, internet has become a very important tool to acquire information and also to share knowledge. As internet is playing an important role in young adults, thus study internet addiction and related variables is tremendously important. Hence, this study was to investigate the relationship between loneliness, life satisfaction and internet addiction among young adults by using cross sectional study. Unfortunately, more than half of the respondents were found to engage high level of internet addiction.

Travis Hirschi's Social Bond / Social Control Theory was use to explain the relationship between the variables. This theory was explaining the influence of social bonds on deviant behavior. In this study, internet addiction was considered as a deviant behavior, and loneliness and life satisfaction was related to the four elements of social bonds explained by Hirschi. Therefore, according to this theory, it is assumed that high level of loneliness and low level of life satisfaction can lead to internet addiction.

Convenience sampling was used to obtain sample. 300 undergraduates from UTAR Perak campus (aged from 18 to 27 years old) were involved in this study who 169 of them were female and 131 were male. To compile the questionnaire, demographic and three different dimensions of test and scale which are Internet Addiction Test, Satisfaction with Life Scale, and UCLA Loneliness Scale Version 3 were included.

A pilot study was conducted. The result of pilot study found high reliability with the alpha Cronbach's coefficient ($\alpha = .953$) for Internet Addiction Test; alpha Cronbach's coefficient ($\alpha = .677$) for UCLA Loneliness Scale Version 3; while alpha Cronbach's coefficient ($\alpha = .902$) for Satisfaction with Life Scale.

Independent sample t-test was used to figure out the gender differences in internet addiction. On average, male ($M = 49.56$, $SD = 12.49$) and female ($M = 46.28$, $SD = 12.78$) differ significantly in internet addiction; $t(298) = 2.232$. Male was found to have higher internet addiction level compare to female.

Pearson correlation was use to study the relationship between internet addiction and loneliness and life satisfaction. For the first research question, the findings supported the hypothesis which showed that there was significant positive relationship between internet addiction and loneliness ($r = 0.675$). For the second research question, hypothesis was supported by the findings as well, showing that there was significant negative relationship between internet addiction and life satisfaction ($r = -0.501$).

Multiple regression was run to find the unique predictors of internet addiction. The findings showed the two predictors statistically significantly predicted internet addiction, $F(2, 297) = 150.999$. 50.4% of the total variance is explained by these two variables. Loneliness was found to have higher impact than life satisfaction ($\beta = .563$ and $\beta = -.248$) on internet addiction among young adults.

Limitations

There is no doubt that this study has made valuable contribution on the findings between internet addiction, loneliness and life satisfaction. However, limitations cannot be excepted from this study. The first limitation that we faced during out study is that, as UTAR consist mostly Chinese students, we only managed to find 12 Indians, 1 Malay and 4 other races out of 300 as our respondents, however the rest of the respondents were Chinese. We could not gain much information from races other Chinese, thus the results of our study might not be applicable to them.

Furthermore, the questionnaire was a fully self-reported questionnaire, therefore, respondent might not give accurate information or fill in such a way that were happened and thus might lead to bias in the results. In addition, the questionnaire consists of quite a number of questions, respondents might lose their patient to finish the questionnaire and left us unfinished questionnaire or they might just simply answer for the sake of finishing the questionnaire. These lead us to some difficulties in collecting data and as well affected the result.

Last but not least, this study only focused on the relationship between internet addition, loneliness and life satisfaction without addressing other possible interesting variables which may show different outcomes. In fact, other socio-demographic, psychological, and biological variables might also have correlation with internet addiction yet this study only investigates two variables with the internet addition, therefore, that was a limitation of our research.

Recommendations

In the future study, it would be important for researchers to include other potential variables such as parenting style, academic performance, and friendship to investigate the relationship of the internet addition between different variables, and by adding these variables would add a new dimension to the current study. Questionnaire can also include other language such as Chinese and Malays in order for the respondent whom use language other than English as their primary language to better understand the what is the questions are actually asking as better understanding can provide more accurate answer.

Moreover, a larger sample size could be included in order to develop the significant level of the findings and reflect more reliably to the population mean. Additionally, samples can be collected from various universities in Malaysia rather than only in UTAR. Malaysia is

a country with multi-ethnicity, therefore, future study is encouraged to also include more sample from every ethnic if possible, so the study can be applicable to every ethnic in Malaysia. Only two out of four element of social bonds from Hirschi's social bond theory was investigate in this study. Future study can include all four element of social bond in order to fully relate and test the applicableness of the theory. Besides using quantitative survey, qualitative study can be also employed in future study to have more detailed investigating on the actual experience and thinking of respondent. At the same time, longitudinal study is also recommended future study to investigate the pattern of the relationship between the 3 variables. Internet has already played a very important role in current society, affecting every one of us and it has been overused or misused. Therefore, it is strongly encouraged to have more related or similar studies addressing this issue in the future to study every possible variable related to internet addiction which might contribute to develop prevention strategies for internet addiction.

Implications

Theoretical implications

The theory that applied in the research was Hirschi's social bond theory. The findings of this study have important theoretical implication. These findings are considered as an extension of the theoretical literature, which this study now adds additional support for the theory. It was found that loneliness and life satisfaction which related to the elements of social bonds is significant correlated to and predicts internet addiction. In this sense, this theory can be used in future research when similar topic is going to be studied. Furthermore, this established theory was once again tested in this study, however, this time is in Malaysia setting. Needless to say this theory can be applicable to Malaysia setting as the findings of this study was supportive to this theory. As if some day in the future internet addiction is

recognized as a disorder and people who are addicted to internet seek for help from therapist, at that time, therapist may use this theory to look at the condition of patient, whether if a person's internet addiction is caused by lacking of social bonds.

Practical implications

First, this study enhanced the literature of future internet addiction research as there are very limited studies about internet addiction in Malaysia. Through the findings, a program and policy could be established to prevent, diagnose and treat internet addiction and help the addicts to use the internet properly. Related authorities such as policy maker could cooperate with therapists and counselor to take some actions in advance such as train the counselor, establishing counseling centers and providing treatment at appropriate settings to deal with the problem addressed by this study. With the findings, government agencies such as health department in Malaysia could build stronger awareness on the issues on internet addiction and the factors that predicts it. It can be done by having public talk at all Malaysia universities. On the other hand, it maybe also helps psychologists or counselors to address problematic Internet use as a problem and also in different dimension. Last but not least, internet addiction is still not recognized by DSM-5, thus this study can be part of a contribution to encourage DSM to included internet addiction.

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APPENDIX A
QUESTIONNAIRE



UNIVERSITI TUNKU ABDUL RAHMAN
FACULTY OF ARTS AND SOCIAL SCIENCE
DEPARTMENT OF PSYCHOLOGY AND COUNSELLING

Informed Consent Form

Title of Research: The Relationship between Loneliness, Life Satisfaction and Internet Addiction among Young Adults

Investigators

We are Year 3 Trimester 3 students pursuing Bachelor of Social Science (Hons) Psychology at Universiti Tunku Abdul Rahman (UTAR).

Instructions

There are 4 sections in this survey form. Please complete ALL the four sections by giving the best answer.

Participants' Right

The participation is completely voluntary. All the information gathered will remain confidential and will be used for academic purpose only. Participants are free to withdraw with consent and discontinue participation in anytime without prejudice if they find not comfortable answering the survey form at any point.

I have read and agreed to participate in the survey, and have been given the opportunity to ask questions. I give my consent to participate in this study.

Signature: _____

Date: _____

SECTION A: Demographic Information

INSTRUCTIONS: Please complete the following question and tick (/) on the relevant option.

- Age : _____ years
- Gender : Male
 Female
- Ethnic : Malay
 Chinese
 Indian
 Others
Specify: _____
- Place of Residence : Rural
 Urban
- Relationship status: Single
 In a relationship
- Have smartphone/s: Yes
 No
- Access to internet:
(may (/) more than 1 option) Rely on free wifi
 Mobile data plan
 Broadband
 Streamyx/Unifi

SECTION B: Internet Addiction Test (IAT)

INSTRUCTIONS: The 20 questions below are to measure severity of internet addiction, to begin, answer the following questions by using this scale:

0	Does not apply
1	Rarely
2	Occasionally
3	Frequently
4	Often
5	Always

1.	How often do you find that you stay on-line longer than you intended?	0	1	2	3	4	5
2.	How often do you neglect household chores to spend more time on line?	0	1	2	3	4	5
3.	How often do you prefer the excitement of the Internet to intimacy with your partner?	0	1	2	3	4	5
4.	How often do you form new relationships with fellow on-line users?	0	1	2	3	4	5
5.	How often do others in your life complain to you about the amount of time you spend on-line?	0	1	2	3	4	5
6.	How often do your grades or school work suffer because of the amount of time you spend on-line?	0	1	2	3	4	5
7.	How often do you check your email before something else that you need to do?	0	1	2	3	4	5
8.	How often does your job performance or productivity suffer because of the Internet?	0	1	2	3	4	5
9.	How often do you become defensive or secretive when anyone asks you what you do on-line?	0	1	2	3	4	5
10.	How often do you block out disturbing thoughts about your life with soothing thoughts of the Internet?	0	1	2	3	4	5
11.	How often do you find yourself anticipating when you will go on-line again?	0	1	2	3	4	5
12.	How often do you fear that life without the Internet would be boring, empty, and joyless?	0	1	2	3	4	5
13.	How often do you snap, yell, or act annoyed if someone bothers you while you are on-line?	0	1	2	3	4	5
14.	How often do you lose sleep due to late-night log-ins?	0	1	2	3	4	5
15.	How often do you feel preoccupied with the Internet when off-line, or fantasize about being on-line?	0	1	2	3	4	5

16.	How often do you find yourself saying "just a few more minutes" when on-line?	0	1	2	3	4	5
17.	How often do you try to cut down the amount of time you spend on-line and fail?	0	1	2	3	4	5
18.	How often do you try to hide how long you've been on-line?	0	1	2	3	4	5
19.	How often do you choose to spend more time on-line over going out with others?	0	1	2	3	4	5
20.	How often do you feel depressed, moody or nervous when you are off-line, which goes away once you are back on-line?	0	1	2	3	4	5

SECTION C: UCLA Loneliness Scale Version 3

INSTRUCTIONS: The 20 questions below are to measure the level of loneliness, indicate how often each of the statements below is descriptive of you.

1	Never
2	Rarely
3	Sometimes
4	Often

	Statements	Never	Rarely	Sometimes	Often
1.	How often do you feel that you are "in tune" with the people around you?	1	2	3	4
2.	How often do you feel that you lack companionship?	1	2	3	4
3.	How often do you feel that there is no one you can turn to?	1	2	3	4
4.	How often do you feel alone?	1	2	3	4
5.	How often do you feel part of a group of friends?	1	2	3	4
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
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

SECTION D: Satisfaction with Life Scale

INSTRUCTIONS: Below are five statements that you may agree or disagree with. Using the 1 - 7 scale below, indicate your agreement with each item by placing the appropriate number on the line preceding that item. Please be open and honest in your responding.

1	Strongly disagree
2	Disagree
3	Slightly disagree
4	Neither agree nor disagree
5	Slightly agree
6	Agree
7	Strongly agree

1.	In most ways my life is close to my ideal.	1	2	3	4	5	6	7
2.	The conditions of my life are excellent.	1	2	3	4	5	6	7
3.	I am satisfied with my life.	1	2	3	4	5	6	7
4.	So far I have gotten the important things I want in life.	1	2	3	4	5	6	7
5.	If I could live my life over, I would change almost nothing.	1	2	3	4	5	6	7

End of questionnaire.

Thank you for your time and participation.

APPENDIX B
SPSS RESULTS

Pearson Correlation

Descriptive Statistics

	Mean	Std. Deviation	N
IAT	47.7133	12.73572	300
Loneliness	47.2867	9.12150	300

Correlations

		IAT	Loneliness
IAT	Pearson Correlation	1	.675**
	Sig. (2-tailed)		.000
	N	300	300
Loneliness	Pearson Correlation	.675**	1
	Sig. (2-tailed)	.000	
	N	300	300

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

Descriptive Statistics

	Mean	Std. Deviation	N
LifeSa	20.5900	5.52906	300
Loneliness	47.2867	9.12150	300

Correlations

		LifeSa	Loneliness
LifeSa	Pearson Correlation	1	-.449**
	Sig. (2-tailed)		.000
	N	300	300
Loneliness	Pearson Correlation	-.449**	1
	Sig. (2-tailed)	.000	
	N	300	300

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

Descriptive Statistics

	Mean	Std. Deviation	N
IAT	47.7133	12.73572	300
LifeSa	20.5900	5.52906	300

Correlations

		IAT	LifeSa
IAT	Pearson Correlation	1	-.501**
	Sig. (2-tailed)		.000
	N	300	300
LifeSa	Pearson Correlation	-.501**	1
	Sig. (2-tailed)	.000	
	N	300	300

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

Independent T-Test

Group Statistics

	Gender	N	Mean	Std. Deviation	Std. Error Mean
IAT	Male	131	49.5649	12.48944	1.09121
	Female	169	46.2781	12.77598	.98277

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
IAT	Equal variances assumed	.301	.584	2.232	298	.026	3.28678	1.47276	.38844	6.18512
	Equal variances not assumed			2.238	282.5 66	.026	3.28678	1.46853	.39614	6.17742

Multiple Regression Analysis

Variables Entered/Removed^a

Model	Variables Entered	Variables Removed	Method
1	LifeSa, Loneliness ^b	.	Enter

a. Dependent Variable: IAT

b. All requested variables entered.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.710 ^a	.504	.501	8.99801

a. Predictors: (Constant), LifeSa, Loneliness

ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	24450.995	2	12225.497	150.999	.000 ^b
	Residual	24046.352	297	80.964		
	Total	48497.347	299			

a. Dependent Variable: IAT

b. Predictors: (Constant), LifeSa, Loneliness

Coefficients^a

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95.0% Confidence Interval for B	
	B	Std. Error	Beta			Lower Bound	Upper Bound
(Constant)	22.299	4.470		4.988	.000	13.502	31.097
Loneliness	.786	.064	.563	12.311	.000	.661	.912
LifeSa	-.571	.105	-.248	-5.423	.000	-.779	-.364

a. Dependent Variable: IAT