**INTERNATIONAL JOURNAL OF
ACADEMIC RESEARCH IN
BUSINESS & SOCIAL SCIENCES**

Factors that Contributing in influencing Mobile Phone Usage among University Students

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Abstract
Mobile phone technology has gradually become integrated into the higher education experience and nearly every member of the university community uses or owns a mobile phone to connect with others. According to past research there is a strong association between gender, self-esteem, social anxiety and mobile phone use. However, there has very few researches on self-esteem, and social anxiety towards mobile phone usage. Regardless of the distance between people, mobile phones allow them to interact and integrate on a regular basis. Even though these benefits are present, mobile phone has been identified as global problem, particularly among teenagers. Therefore, this study was examine the factors that influence on mobile phone usage. The purpose of this study was to determine the impact of gender, self-esteem and social anxiety towards mobile phone addiction among public university students in Klang Valley. In this study, a survey method was used. There were 400 teenagers from four public universities took part in this survey. The findings conclude that gender differences, self-esteem and social anxiety not influencing on the mobile phone usage among teenagers. Mobile phones are an inevitable part of modern life and it would be an indispensable tool in our society. However, over use of mobile phone has resulted in the problem of mobile addiction. Hence, need to identify main causes that influencing mobile phone use among teenagers before it's affect the student's academic performance and their productivity.
Keywords: Mobile Phone Usage, Mobile Phone Addiction, Gender, Self-Esteem, Social Anxiety

Introduction
The mobile phone has become an essential form of communication and an integral element of modern life. The advent of advanced phone technologies, which incorporates a wide range of functions and better flexibility, had increased the prevalence of mobile phone use, especially amongst teenagers (Kiran et al., 2019). This is certainly unexpected because young

generation are technologically informed (i.e. modern citizens) and are bound to be drawn to any gadget. The phenomenon isn't unusual because teenagers are technologically literate and would be drawn to any new digital communication tool. Moreover, Fadzil et al (2019), remarked that in today's environment, mobile phones are no longer considered a luxury item and have become a basic necessity.

The rise of the mobile phone phase has resulted in a beneficial set of functions and more attractive portable, which has resulted in greater mobile phone use, especially among millennials. Hence, mobile phones have grown to be the most prominent digital devices amongst young adults (Adams & Paul, 2017). Their studies also revealed that teenage users are more familiar of the features and capabilities of mobile phones than other user groups. Based on the assumption that mobile phones are extremely convenient, also have negative implications, cause tremendous emotional changes and sometimes serious physiological reactions, culminating in a reaction known as "mobile phone addiction" (Eduardo et al.,2012). This was clearly evident that there were significant psychological demands. Decreased psychological urges can result in physical and emotional issues, along with behavioral addictions as internet and mobile phone addiction (Kumcagiz & Gunduz, 2016; Settley, 2020). Previous research has discovered that youth with minimal levels of emotional stability depend heavily on mobile phones to stay connected with those around, which increases the risk of mobile phone dependency (Kim & Koh, 2018). The study's findings support the notion of self-determination, which is a motivational concept that outlines how personal liberty is generated and then promotes people's growth. Additionally, this finding suggests that when an individual has long-term mental needs in one social setting, he or she could display tremendous desire to satisfy those expectations in other social situations, such as the digital world (Ryan & Deci, 2020). As a result, satisfying psychological expectations is not just a function of social context, but also a source of internal motivation that drives people to engage in demeaning actions. Therefore as a result, teenagers can satisfy their psychological needs by playing computer games, watching movies in online, or conversing online (Sheldon et al., 2011).

Generally, all over the world mobile phone view as a basic necessity. It transformed ways we interact, engage, seek information, work, do errands, and occupy ourselves. Moreover, Adams and Paul (2017) characterised the mobile phone as a gadget that used search for information, socialize, entertain, and enable digital payments, along with other features. In comparison to computers, fixed line telephones, pay TV channels, and television data of Statistics Department (DOSM, 2020) indicates 98.2% of individuals and families use mobile phones in their daily life. According to surveys, mobile phones have evolved into an essential part of people's life. Although mobile phones provide many benefits to users in their everyday routines, they also affect the users' on physically and mentally.

Teenagers' use of mobile phones not only influences their social connections, hobbies, entertainment, and information gathering, but also their behavioural habits such as cashless payments and e-commerce platforms. It also supported by Lian et al (2021), that cell devices provide a broad spectrum of features. As a result, it enhances greater number of people on using mobile devices (Han et al., 2017) and significantly increases mobile phone user attachment. Mobile phone use has been linked to physical and mental health problems and sleep disruption (Lopez-Fernandez et al., 2018). Excessive mobile phone use could have

psychological as well as physical consequences (Parasuraman et al., 2017). Additionally, it been identified use of mobile devices is negatively associated with academic success (Ng et al., 2017). Therefore, this context requires significant consideration due to its potential to impair the betterment of the teenagers. Healthcare is associated with a substantial connection to long-term health and well-being among teenagers, especially those more vulnerable to harmful surroundings (Pigaini et al., 2020; Germani et al., 2020). As a result, experts believe there is a strong relationship between attachment of mobile phone use and teenage mental health. Thus, the purpose of this research is to determine the association involving gender, self-esteem, anxiety on mobile phone usage among public university students in Klang Valley.

Literature Review
Factors that contributing in influencing mobile phone addiction among university students
Gender
Gender is an essential aspect of one's identity. Gender identification is useful in many applications for personalizing services and suggestions. It been identified gender differences influenced on the uses (Jain & Kanhangad, 2018). Presently, the advantages of owning a mobile phone are apparent and practically everyone uses it on a daily basis. As a result, these devices contain a wide variety of data about users and are great devices for gaining a better knowledge of the person (Daneshvar & Inkpen, 2018). Various people use mobile phones in different way such as age, gender, education level and occupation (Negaresh et al., 2023).

According to Andone et al (2016), females invest more time on mobile phones than males. The results demonstrate women are more glued to their phones than males. Also, females are more susceptible to mobile phone than males. According to a survey done 19 years ago, young girls are not allowed access to mobile phones and the internet since their careers and academics are not prioritized. Mobile phones and other technological gadgets were deemed "boys' toys" at the time (Weiser, 2000). But the times have transformed dramatically. Teenagers' usage of technology is no longer limited to academic purposes; the scope of mobile phone has expanded significantly in recent years. Most parents allow their child to use their smartphone for safety reasons (Lenhart et al., 2010).

Based on prior studies, the result indicated gender influences the way of users engage with mobile phones (Negaresh et al., 2023). There is ample evidence that males and females have distinct preferences on mobile phone use. Additionally, Taywade and Khubalkar (2019), asserts men were more likely to be involved in problematic computer and internet use. Hence, it is believed the will have differences on mobile phone acceptance and use among male and female. In contract, Bianchi and Philips (2005) discovered that gender having same impact on mobile phone usage even though the purpose of using differ among users. There are considerable gender disparities in the problematic use of digital media, which are mostly related to biological, psychological, and sociocultural factors (Lee et al., 2018). Basically, females are more likely than males to utilize social networking sites and instant messaging apps, although males spend more time on their smartphone than females (Anshari et al., 2016).
Therefore, there is ample evidence that stating males and females have difference pattern of mobile phone use. Because of having different preferences among both gender the amount

of usage also significantly differ. Hence, this study will identify the influence of gender differences on mobile phone usage among teenagers.

Self-esteem

A plethora of studies indicate that several mediating variables may be employed to investigate the self-esteem impact on cell phone addiction (Walsh et al., 2008). Based on Kim and Koh (2018), low self-esteem is a crucial element in cell phone addiction. Researchers concentrated their studies on identifying youth self-esteem and its impact on this electronic device.

Individuals who have elevated self-esteem are less likely to use their phones than those with low self-esteem. In addition Soh et al (2018) asserts strong personal connections may offer additional interpersonal relationships for teenagers, increase their self-esteem, and possibly even minimise disruptive behaviour. Previous research has shown that having supportive friendships will help people from being dependent on their phones (Badanes-Ribera et al., 2019; Bae, 2015). Besides social networking, those with low self-esteem used their phones for motivation and assistance.

Because the mobile phone allows users to communicate with others, their self-esteem may influence how they use the phone. Those with poor self-esteem made more phone calls sending more text messages (Bianchi and Philips, 2005). Billieux (2015) observed that people with low self-esteem frequently have difficulty in real-world social relationships, necessitating protection in emotional relationships, whereas indirect mobile phone interaction, such as text messaging, gave safety emotions and required anonymity. So that, people with low self-esteem may be addicted to their phones. This perspective is supported by past studies that shows an association between high self-esteem and aggression or abusive behavior. This also supported by Baumeister (200), those who have a greater feeling of self-worth, are more eager to fight during a battle because they think they would succeed. Due of the two competing opinions, it is possible that this study will look into the relationship between self-esteem and mobile phone usage, as well as the vulnerabilities of attachment.

Anxiety

Anxiety is described by negative mental emotions such as unease, and social exclusion (Aderka et al., 2009). Anxiety levels rise, people seem to feel weak and worthless, and their mental and physical well-being weakens as a result of a lack of ability of humans and abilities to protect themselves from the harmful past traumatic situations. Excessive phone use is strongly linked to anxiety and sadness (Elhai et al., 2016). Intimacy anxiety and self-esteem have a significant inverse link (Li & Kato, 2006), and unstable persons are also predicted to exhibit this minimal belief in themselves (Zhao et al., 2012). Therefore, attachment anxiety is associated with uncertainty in one's willingness to connect with those around (Zhao, et al., 2012).

Prior research has connected negative feelings including sorrow, stress, anxiety, and empathy to increasing cell phone use (Lachmann et al., 2018; Hawi & Samaha, 2017). Furthermore, when students began and proceeded through university, they encountered new social and intellectual challenges that increased their stress (Ward-Griffin et al., 2018). Previous research has linked anxiety with attachment to mobile phone activities and addiction. Increased levels

of anxiety in persons lead to a favourable link with dependence on mobile phones (Cheng & Hong, 2017). Utilizing a phone may reduce anxiety towards interpersonal friction and freak occurrences (Jeon & Jang, 2014). Using a cell phone, according to Jeon and Jang (2014), can lessen anxiety about social conflict and unanticipated consequences. Furthermore, Kong et al (2020) assert that interpersonal connection will lower anxiety issues through anonymity, desynchronization and nonverbal communication.

Therefore, socially anxious teenagers utilize mobile phones to substitute for poor interactions with others in the real world. Generally, anxious people would prefer to converse through their mobile phones. People with high anxiety typically rely on mobile phones as an effective substitute for direct communication due to their aversion to interpersonal interactions and lack of face-to-face communication ability (Tang et al., 2016). As previously said, this research highlighted a correlation between anxiety and mobile addiction, which could assist in our understanding of the relationship between anxiety and mobile use, as well as bring into effect mobile phone dependency.

Mobile Phone Usage
The adaptability of mobile phones explains their popularity among university students. Students typically use it for text messaging, phone calls, gaming, ringtone downloads, image messaging, and WhatsApp messaging. Furthermore, students use mobile phones to listen to music, receive videos, record conversations, conduct video calls, access the Internet, and share music via Bluetooth (Edjah & Nkrumah, 2023). These activities eventually train kids to the use of phones to the point when they exhibit behavioural addiction signs. In past research (Yen et al., 2009; Niemsz et al., 2005) it been identified mobile phone addiction as loss of typical addictive behaviours include poor self-control, poor attention, abstinence, confrontation, and relapse. Among those who acknowledged and addressed other addiction behaviours like drug use and gambling, the medical standard for dependence on mobile phones has been intentionally revised in the updated fourth edition of the Diagnostic and Statistical Manual of Mental Disorders (Billieux et al., 2015).

Mobile phone adaptability is an example of modern innovation on par with the internet, and it is expected to have a big influence. The internet has become the most significant way to connect for today's generation, as well as the greatest informational resource (Thakuria & Rofique, 2022). In order to identify the negative effects of mobile phone usage, Billieuex et al (2015) developed a model with three unique pathways for excessive mobile substance use. The psychological characteristics that are the focus of this overly-reinforcing process include low self-esteem, social anxiety, sadness and insecure relationships that could result in a person overly utilizing their phone to hide away from everyone.

The modern mobile phone has unrivalled capabilities that extend far beyond its primary function as a voice communication device (Wiścicka-Fernando, 2021). Advances in mobile technology have transformed digital communication. Moreover, all the education sectors practicing e-learning and cancel school and campus activities. E-learning is the practise of using technology to access curriculum and educational materials outside of traditional classroom settings (Wiścicka-Fernando, 2021). In joining e-learnings mobile phone devices such as smartphones and tablets have been commonly used among people mainly students in their daily lives.

Research Method

The quantitative method was employed in this research. The sample consisted of 400 undergraduate students from six IPTAs in Klang Valley. The researcher would be unable to assess the entire general public who do not meet the study's eligibility requirements. Therefore, there were employed non-probability sampling approach as each of the students have equivalent chance to be the respondent of the study. In identifying the sample there was deploying convenient and purposive sampling method. In the first stage six IPTAs (UM, UKM, UPM, UITM, IIUM and UPNM) been selected in Klang Valley. Secondly, by random one faculty were chosen from each of the universities. There were in total of 70 students been selected to take part in this study to make the total of 400 respondents. Last but not list, as the study identifying the mobile phone usage the questionnaire only distributed to those who used mobile phone. Students who did not own or use mobile phone were excluded.

Hypothesis

H1: Gender, self-esteem, and anxiety are not factors to contribute to the mobile phone usage among public university students in Klang Valley.

Measures

Overall, there were included three sections in the questionnaire. First section (section A) consist of three questions namely gender, age, and race. Following section measuring on the factors of influencing mobile phone usage. Following with that, section B compress with 20 statements that measure on self-esteem. Likert Scale of 1 to 5 was used to measure respondent self-esteem and mobile phone usage. Scale 1 (very uncharacteristic or untrue), Scale 2 (Uncharacteristic), Scale 3 (Neutral), Scale 4 (Characteristic) and Scale 5 (Very characteristic or true). In continue with that 10 items were employed in section C to measure through five Likert Scale (1= Never, 2 = Rarely, 3 = Moderately, 4 = Often and 5 = Very often).

Results

Demographic Profiles of The Respondents

Table 1 indicated the results of the respondents' socio-demographic profiles which included 400 participants from public universities. Overall, female group respondents were highly (64%) took part in this study and the remaining respondents were male (36%). The data revealed that the majority of respondents (82.2%) were between the ages of 20 and 29, with the lowest group (0.3%) being between the ages of 40 and 49. The result in Table 1 also indicates almost nearer half of the respondents are Malay students (42.5%).

Table 1
Socio-Demographic Profiles of Respondents (n=400).

Profile	Frequency	%
Gender		
Female	256	64.0
Male	144	36.0
Age		
19 – below years old	10	2.5
20 – 29 years old	330	82.2
30 – 39 years old	59	15.0
40 – 49 years old	1	0.3
Ethnic		
Malay	170	42.5
Chinese	79	19.8
Indian	87	21.7
Others	64	16.0

Factors that contributing in influencing mobile phone addiction among university students

Table 2 shows the finding of Anova test. Based on the objective there are three independent variables were tested on contributing towards mobile phone usage among university students. They are in total of 400 public university students were involved in this study. Regression analysis using the Anova test demonstrates that at the 0.05 significant level, there is no significant association between the dependent variable and independent variables. According to Table 2, the results indicated gender, self-esteem, and anxiety (Model 1) not gives a significant result with F=2.520, p>0.05.

Table 2
Analysis of variance of variables.

Model	Sum of Squares	Df	Mean Square	F	Sig. Value
1. Regression	241.506	3	80.502	2.520	0.058
Residual	12648.404	396	31.940		
Total	12889.910	399			

Rather than that, based on multiple regression test Table 3 shows all the independent variables (gender, self-esteem and anxiety) only contributes 1.9 percent of variance ($R^2 = 0.019$) towards mobile phone usage among 400 teenagers in this study. Moreover, all the factors not significantly contribute in this study.

Table 3
Coefficient Regression of Independent Variables: Multi-Regression Analysis, Enter Method.

Model		B	Beta	T	Sig. Value
1	(Constant)	35.450		17.136	0.000
	Gender	-1.466	-0.124	-2.467	0.014
	Self-esteem	-0.268	-0.052	-1.052	0.294
	Anxiety	0.052	0.040	0.788	0.431
		R	R Square	Adjusted R Square	
1		0.137	0.019	0.011	

Based on the analysis result from Table 2 and 3, it is failed to reject the null hypothesis in this study because all of the prediction factors not contributing towards mobile phone usage among teenagers. Therefore, the result revealed that gender, self-esteem and anxiety not the factors that contributes towards mobile phone usage among the university students. Eventually past studies indicated there have association between students and smartphone addiction (Li et al., 2023). Moreover, their study demonstrated male students were use mobile phone to access game apps and anxiety. Similarly, female undergraduate was connected with mobile phone to access multimedia applications, use of social networking services, depression and anxiety. However, this result implies that males and females' difference are not affect on the mobile phone usage. Even though in past studies interpreted as (Negaresh et al., 2023; Andone et al., 2016): females spend more time on phones compare to males. The finding showed no significant differences on using mobile phone among this group of respondents.

In addition, there were stated in past studies that, teenage smartphone usage behaviour differ dramatically between genders in terms of preferring some applications over others (Taywade & Khubalkar, 2019). Even though, there have differences in searching and accessing the applications between gender it's not impacted on the usage. Similarly, some research studies asserted that compare to males, females spend more time on smartphones. Accordingly, various studies indicated males are considered to use technology more than girls, and they spend more time on computers, laptops, and mobile phones (Lee & Kim, 2018; Chen et al., 2017). However, this finding illustrated gender not impact on the mobile phone usage.

Besides that, the finding of this study shows self-esteem also doesn't effect on the mobile phone use among teenagers. Most of researches concerning on level of self-esteem among teenagers and its impact on mobile phone use. Many studies argued that self-esteem is a great indicator of mobile phone addiction (Bang et al., 2020; Kim & Koh, 2018). Accordingly, Tabassum and Parveen (2018) claim that while a mobile phone can be a medium for connecting with others, one's self-worth may have an impact on how they use their phone, with poor self-esteem being associated with more frequent callers and texters. An earlier study on the connection between self-esteem and dependence on mobile phones came to the conclusion that persons with poor self-esteem commonly had trouble interacting with others in the real world, necessitating the need for security in intimate relationships. As a result, individuals with low self-esteem might lead to overuse of mobile phones (You et al., 2019). The prior studies emphasized, when teenagers having low confident about themselves,

they are more likely to find mediums for instance a mobile device to communicate with others and the use of mobile phones is rising. On the contrary, this study finding indicated self-esteem not influencing on the mobile phone usage of the teenagers. It shows, although they having low self-esteem, they are concern on their responsibilities and alert on the mobile phone usage.

Besides that, teenagers have to face many struggles with stress, fears and worries about routine parts of everyday life. Lack of close attachment to another person, as well as anxiety and emptiness, generate emotional loneliness (Emineoğlu, 2018). Hence, as per past studies the use of mobile phones would be the useful tool for coping with loneliness and providing emotional support which lead to the addiction. Anxiety people attracted to mobile phone usage because rather than appealing physically people communicate via calling or messaging with others and it's reducing the social interactions and communication difficulties. Many studies have been shown that people with lower mental health and psychological stability are more likely will have higher social anxiety and form dependence behaviours with associated with mobile phones (Enez Darcin et al., 2016).

Initially there have a connection between mobile phone usage and negative emotions including depression, stress, and anxiety, as well as empathy (Lachmann et al., 2018; Hawi & Samaha, 2017). Studies in the past have found a relationship between behaviour and mobile phone addiction and attachment anxiety. Hence, it been identifying teenagers people with social anxiety frequently use their phones to make up for negative interactions with others in real-life circumstances.. Even though past studies indicating the relationship between anxiety and mobile phone usage, teenagers wisely use mobile phone. Throughout the wise handling and usage, the anxiety is wisely handled by students and they well manage anxiety and consumption of phone usage.

Conclusion
According to the finding, it is implicated for public university students in Klang Valley factors such as gender, self-esteem and anxiety not contributes towards mobile phone use. With the positive way of balancing psychological effects (low self-esteem and anxiety), teenagers well manage their self and not relying on technology to attach with people or comfort themselves. Hence, the differences in gender and psychological characteristics doesn't escalating mobile phone use among teenagers. Even though several studies shown males utilise technology more than girls and spend more time on computers, laptops, and smartphones than females (Lee & Kim, 2018; Chen et al., 2017) the findings presented gender differences not impacting on mobile uses.

Also, self-esteem may have an impact on how someone uses their mobile phone because it provides a means of communication with others. For example, low self-esteem individuals are more likely to make frequent phone calls and send more text messages (Tabassum & Parveen, 2018). Even though some studies indicating positive association between low self-esteem and mobile use the finding contradicted with above statement that self-esteem is not the impingement factor for mobile phone use. Similar to extrovert people who are people oriented would have higher social anxiety levels that tends to use smartphone more frequently. This is in line with past studies finding that anxiety is intensive psychological factor that strongly connected to smartphone addiction (Khan et al., 2021; Annoni et al., 2021; Ye et al., 2017). However, the result of the study attributing anxiety not the main factor that

contributing on mobile phone use. The result of this study illustrated new finding that despite of gender differences the teenagers were equally utilize mobile phone in daily basis. Also, psychological characteristics (self-esteem and anxiety) were indicated doesn't triggering on increasing of mobile phone use among teenagers. Rather than mobile phone, they finding other ways to release stress, anxiety, depression and boost self-worth and joy.

On the other hand, it is suggested in the future studies it can be extend to other variables such as usefulness, loneliness, age, family income level and other factors that are not take into consideration. These findings will help us to better understand the next generation and their requirements. There is a need to understand people's digital habits in order to study potential psychosocial difficulties and, as a result, establish measures to improve the mental well-being of those who live in society. Mobile phones are an unavoidable aspect of modern life and it would be an essential tool for not only understanding people's behaviour, but also making smart interventions. Deeper insights studies into mobile phone usage behaviour is needed to raise awareness among individuals, particularly teenagers about the importance of using mobile phones in a more responsible and constructive manner for their own lives as well as the development of society.

Acknowledgement

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