

Mobile Addiction and Interpersonal Relationship of Adolescents in Higher Education in Malaysia

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This study has employed a descriptive correlational research design to collect data from a total of 150 young adults who have responded to an online google form distributed through a WhatsApp link. The questionnaire items were adapted and adopted from various previous studies. The data were analysed using descriptive and inferential statistics such as t-test and correlation. The study found that adolescents in Higher Education in Malaysia have a moderate level of mobile addiction and interpersonal relationship. There was no significant difference between mobile addiction and gender. Besides, there was a significant relationship identified between mobile addiction and interpersonal relationship. The study implies that mobile addiction is associated with interpersonal relationships, and addicted adolescents experience more negative emotions than non-addicts. The study found that people with high levels of anxiety or depression are often uncomfortable with face-to-face communication and face much more interpersonal difficulties.

Key words: *Adolescents, Higher Education, Interpersonal Relationship, Mobile Addiction*

Introduction

Smartphones are mobile telephones with superior computing competencies that generally consist of access to the Internet and many forms of multimedia content. These devices allow the consumers to be in a condition where they will have a near-constant stimulation with particularly prominent media, together with an endless flow of real-time data. In addition, smartphones offer social networking services such as Facebook and Instagram that are literally at the fingertips, prepared to deliver the most recent update. With the prevalence and mobility of this new structure of personal technology, there are signs that smartphone usage has come to be a complex and problematic device for some users.



Throughout the years, the world has witnessed a remarkable and rapid number of technological innovations. However, this rapid growth of technological innovations has influenced the behaviour of humans and how an organisation works. As these technological developments have grown, unrestrained enthusiasm has given way to a greater fundamental issue. In a debate by the media, the New York Times and The Economist, Harvard researchers, Hallowell and Ratey used the expression "dopamine squirt" to describe the drug-like effect of connecting to technological devices (Schumpeter, 2011). With the growing pervasiveness of these personal telecommunication and computing devices, there has been significant concern about the emergence of smartphone-related problems. Problematic smartphone or smartphone related problems can be defined as a type of behavioural dependency that shares similarities with other technological addictions such as Internet Addiction. In this study, the focus is on mobile addiction amongst young adults, particularly university students.

At a discussion during the American Psychological Association annual conference (Rosen, 2011), the researchers have mentioned the problems that may be associated with mobile addiction. A professor of psychology at California State University also added to the findings of problems related to mobile addiction. According to his ongoing research about the effect of technology on adolescents, Rosen discovered that teens who spent a substantial amount of time using the technology, for example, playing video games and using online social media stated that they had experienced symptoms like stomach-aches, insomnia, anxiety, and depression. Other than that, they also experienced poor interpersonal and social relationships as they frequently mentioned that they were being ignored more in school. Apart from that, these young adults who are considered heavy users of social media tend to display greater narcissistic behaviour. They are also displaying antisocial character disorder, paranoia, and anxiety (Rosen, 2011).

In addition to the problem mentioned above, issues about inappropriate use of mobile phones have centred particularly on the negative influence of mobile phone usage on adolescents. One of the negative influences of mobile phone usage is cyber-bullying. Cyber-bullying has received a tremendous deal of media attention, and the mobile phone has been blamed for a number of teenage suicides. The emergence of cyber-bullying cases has resulted in a rapid developing of lookup related to the negative influence of the mobile phone (Hinduja & Patchin, 2010). Additionally, the mobile phone can also lead to "sexting", which is the act of sending sexually explicit images and text through mobile phones. This has also raised alarms amongst parents and the media as some of these teenagers are being blackmailed because of their action. According to a research done by Diliberto and Matthey (2009), it is estimated that at least 20% of teenagers have taken nude or semi-nude images of themselves and sent them through text message or email or posted them online. Sexting has led to the prosecution of teenagers for child pornography, and it has stirred debates about the relative permanency and ease of dissemination of electronic data which normally occurs amongst youths (Turkle, 2010).

Previously, a few studies have also found that mobile addiction amongst the people will result in related psychological problems such as feeling anxious and uncomfortable when they are without their smartphones. This phenomenon is also known as mobile overdependence (Bragazzi & Del Puente, 2014). In addition, Bragazzi and Del Puente (2014) mentioned that clinical psychologists are analysing a phenomenon referred to as nomophobia which is characterised by anxiousness resulting from overdependence on one's mobile phone and the worry of being without it. In earlier research, nomophobia was once used to be regarded as one of the items measured in the latest version of the Diagnostic and Statistical Manual of Mental Disorders (DSM-V) (Bragazzi & Del Puente, 2014). It is clear from the above discussion that the impact of smartphones on their users can be profound. Consequently, this study aims to fulfil the following objectives, which are:

1. Research objective (RO1): To identify the level of mobile addiction among young adults in higher education in Malaysia.
2. Research objective (RO2): To identify the level of the interpersonal relationship among young adults in higher education in Malaysia.
3. Research objective (RO3): To identify whether there is a significant difference between gender and mobile addiction among young adults in Malaysia.
4. Research objective (RO4): To identify if there is any relationship between mobile addiction and interpersonal relationship among young adults in Malaysia.

Literature Review

Smartphones have emerged as an increasingly popular technology which is utilised by all age groups and across continents. Smartphones have initiated a technological revolution, and it is now a vital part of our daily lives which most people cannot live without. These days, it has become common to see people using smartphones to watch movies, listen to music, and watch TV programs anywhere and anytime. In addition, fitness lifestyles by using a mobile phone have also become the latest trend. People who practice an active lifestyle are using their smartphones to screen their fitness status, for example, how many steps that they have taken, how long they have walked and how many staircases they have climbed. Nevertheless, even if smartphones have made our daily lives easier, they can also lead to negative consequences as well. Example of the negative impact of smartphone that has been reported is the disruption of social interactions, sleep deprivation, poor work-life balance, and lack of attention at work (Lopez-Fernandez et al., 2014).

Mobile Addiction

Addiction can be defined as a habitual urge that is experienced by someone who forces them to interact in some specific activities. Besides, addiction can be characterised through repetitive acts with a complete negative sum of consequences (Waal & Mørland, 1999). In general, there are two types of addiction or also known as dependency. The first addiction is a behavioural

dependency, and the second addiction is known as substance dependency (Alavi *et al.*, 2012). Mobile telephone dependency belongs to technology addiction, which is a common behavioural addiction. It is characterised by the repetitive use of mobile phones to engage in interactive behaviours that are counterproductive to health (Lopez-Fernandez *et al.*, 2014).

According to Billieux (2012), mobile phone addiction has been associated with behaviours that include an inability to regulate one's use of the mobile phone, resulting in various social, behavioural, and psychological problems in their daily life. Often technology-related addictions or also known as non-chemical addiction have been classified as a behavioural dependency. Mark (1998) has also added that technology-related addiction with interactive devices which will induce and reinforce some of its features which later will result in addictive tendencies. The example of addictive tendencies mentioned by Mark (1998) is tolerance, withdrawal, interference, and relapse.

Regardless of the latest scientific evidence, some researchers argue that excessive use of the mobile phone is driven by means of attempts to avoid underlying mental or social issues (Martin, 2005). Along with that, Jill Adams (2014) added that drug and behavioural addictions have identical core principles as both cause excessive tendencies and a buzz which can lead to tolerance and withdrawal. This addiction can cause a person to feel bad when they are not doing that preferred activity, and they have the urge to need more of the thing to get the identical buzz. In many circumstances, a person is considered to have an addiction if they lose control or self-regulation regardless of understanding of the negative consequences (Jee Hyun *et al.*, 2008).

Mobile Addiction and Interpersonal Relationship

To date, there are multiple studies investigating mobile phone addiction. These studies have expanded throughout the years and literature generally centred on the nature of mobile phone addiction (Park & Park, 2014), antecedents of mobile smartphone addiction (White *et al.*, 2011), influences of mobile phone dependency on individuals' psychological (Çagan, Ünsal, & Çelik, 2014), academic performance (Lepp *et al.*, 2014), behavioural issues (Wang *et al.*, 2014), and health issues (Thomee *et al.*, 2011). These studies have concluded that mobile phone dependency is proven to be an extremely essential research subject and it is related to a variety of factors and determinants.

Studies related to mobile addiction were conducted to identify the relationship between mobile addiction and factors such as academic performance, gender and age. Amongst the factors that attract the present researchers' interest are the relationship between mobile phone addiction and interpersonal issues (Przybylski & Weinstein, 2013), poor emotions such as depression (Wang *et al.*, 2014) and anxiousness (Hong *et al.*, 2012). In general, mobile phone addicts are extra sensitive to interpersonal relationships and experience more negative emotions than non-addicts. Furthermore, past studies have also discovered that people with excessive anxiousness

or depression are regularly uncomfortable with the face-to-face conversation and they also face many interpersonal difficulties than a non-addict mobile phone user (Hames, Hagan, & Joiner, 2013). By contrast, low depression and social anxiousness are positively correlated to common peer contact (McCarroll *et al.*, 2009). In conclusion, it appears that there are certain underlying associations among mobile phone addiction, negative emotions, and interpersonal problems.

Method

Participants and setting

A total of 150 young adults were surveyed on the base of simple random sampling, and 110 (73.3%) individuals have responded. All of the respondents are adolescents and university students who owned and used a mobile phone. All of the participants were recruited from a public university located in Selangor.

Measures

Mobile phone addiction levels were measured by using the research instrument from Noradilah (2019) while items for Interpersonal Relationship were adapted from various researchers such as Lanette (2018), Okafor (2019), Procidano and Heller (1983), Affinity (1981), Rubin, Perse, and Barbato (1988), and Hoffman's and Ellison *et al.* (2007).

Data collection and data analysis

The data collection was conducted using Google Form, and the link was distributed via a WhatsApp link. The questionnaire was adopted and adapted from previous studies, as mentioned earlier. The data were analysed using SPSS software, and descriptive and inferential statistical analysis was conducted. To satisfy the research objective one and two (RO1 and RO2), the study used a basic descriptive analysis that measures the variables' mean and standard deviation. On the other hand, to fulfil research objective three and four (RO3 and RO4), inferential analysis using t-test and correlational analysis was conducted.

Findings

RO1: To identify the level of mobile addiction among young adults in higher education in Malaysia.

Table 1 shows the level of mobile addiction among the respondents in higher education in Malaysia. For the above research objective, descriptive analysis was conducted to measure the overall mean and standard deviation of the above dimension. The results show that the students disagreed to 10 of the items in the questionnaire and agreed to the rest of the 20 items in the questionnaire, as shown in Table 1.



For the positive side, the students in this study stated that they disagreed that smartphone could replace their actual relationship in life. This can be proven by referring to the items that they have marked as "disagree". The students have mentioned that they do not feel that their online friends are better than their real-life friends ($M=2.28$, $SD=1.15$), they do not prefer to talk with their online friends when they are hanging out with their real-life friends and family members ($M=2.35$, $SD=1.24$), and they do not think that their relationship with their online friends is more intimate than their real-life friends ($M=2.54$, $SD=1.25$). Thus, this shows that their real-life relationship is comparatively better than their relationship with their online friends. The priority of the students is still for their real-life friends and family rather than their online buddies.

However, the results also highlight the negative side of mobile addiction, whereby the students are seen to have quite a certain level of dependency on mobile phones. The students have agreed to the items in the questionnaire, which stated that they would not give up their smartphones even if their daily life is affected by it ($M=3.54$, $SD=1.22$). They are not able to stand a day not having a smartphone ($M=3.59$, $SD=1.30$) and the smartphone has been reported to affect them physically whereby they experience light headache and blurred vision due to excessive smartphone usage ($M=3.70$, $SD=1.39$).

Table 1: Descriptive statistics of mobile addiction among the adolescents in higher education in Malaysia. (n=110)

Items of Mobile Addiction	Mean	Std. Deviation
Feeling that my smartphone buddies understand me better than my real-life friends	2.28	1.15
Preferring to talk with my smartphone buddies to hang out with my real-life friends or with the other members of my family	2.35	1.24
Feeling that my relationships with my smartphone buddies are more intimate than my relationships with my real-life friends	2.54	1.25
Not being able to use my smartphone would be as painful as losing a friend	2.62	1.24
The people around me tell me that I use my smartphone too much	2.72	1.34
Bringing my smartphone to the toilet even when I am in a hurry to get there	2.95	1.51
Getting irritated when bothered while using my smartphone	3.15	1.17
Having my smartphone in my mind even when I am not using it	3.18	1.15
Feeling impatient and fretful when I am not holding my smartphone	3.26	1.15
Constantly checking my smartphone so as not to miss conversations between other people on Twitter or Facebook	3.33	1.30
Feeling pain in the wrists or at the back of the neck while using a smartphone	3.51	1.42
I will never give up using my smartphone even when my daily life is already greatly affected by it	3.54	1.22
Feeling most liberal while using a smartphone	3.56	1.16
Feeling great meeting more people via smartphone use	3.57	1.34
Will not be able to stand not having a smartphone	3.59	1.30
My fully charged battery does not last for one whole day	3.59	1.60
Experiencing light headache or blurred vision due to excessive smartphone use	3.70	1.39
Checking SNS (Social Networking Service) sites like Twitter or Facebook right after waking up	3.81	1.42
Having a hard time concentrating in class while doing assignments, or while working due to smartphone use	3.84	1.33
Preferring searching from my smartphone to asking other people	3.84	1.32
Missing planned works due to smartphone usage	3.87	1.20
Having tried many times and again to shorten my smartphone use time but failing all the time	3.88	1.19
Feeling the urge to use my smartphone again right after I stopped using it	3.89	1.24
Feeling tired and lacking adequate sleep due to excessive smartphone use	3.97	1.27
Feeling calm or cosy while using a smartphone	3.97	1.17
My life would be empty without my smartphone	3.98	1.31
Feeling confident while using a smartphone	4.19	1.04
Feeling pleasant or excited while using a smartphone	4.28	1.08
Being able to get rid of stress with smartphone use	4.31	1.08
Using my smartphone longer than I had intended	4.45	1.11
Mobile Addiction	3.52	.67

In addition, the results revealed that using a smartphone can affect the student's academic performance as well. The students marked agreed to the items such as they are having a hard time concentrating in class while doing their assignment or while they are doing their other works ($M=3.84$, $SD=1.33$), they have also missed the work that they have scheduled due to smartphone usage ($M=3.87$, $SD=1.20$), and they feel tired and lack of adequate sleep due to excessive use of a smartphone ($M=3.97$, $SD=1.27$). Thus, it can be concluded that dependency on smartphones or having even a slight mobile addiction can cause a student to lose focus on their academic matters.

On the other hand, Table 2 shows the overall level of mobile addiction among the respondents in higher education in Malaysia according to its frequency and percentage. The highest percentage for the overall 30 items for mobile addiction is at a moderate level with 67% (6), followed by low level with 20% (6) and high level with 13% (4). Thus, this indicates that overall, the respondents have a moderate level of mobile addiction.

Table 2: Level of mobile addiction among adolescents in higher education in Malaysia (30 items)

Mobile Addiction Items	Frequency	Percentage (%)
Low	6	20
Moderate	20	67
High	4	13
Number of Items/ Total Percentage	30	100

RO2: To identify the level of the interpersonal relationship among young adults in higher education in Malaysia.

For the above research objective, a descriptive analysis was conducted to measure the overall mean and standard deviation of the above dimension. The results show that the students disagreed to 13 of the items in the questionnaire and agreed to the remaining five items in the questionnaire.

For the positive side, the students in this study stated that they disagreed that their family thinks that they have mobile addiction which can give a negative effect on their relationship with their family. This can be proven by referring to the items that they have marked as "disagree". The first item stated that the student's family did not help them with mobile addiction ($M=2.63$, $SD=1.30$). Thus, this showed that the students do not have mobile addiction, or they still have a moderate level of mobile addiction which does not affect their relationship with their family. Next, the students' family did not think that they spend too much time on social networking ($M=3.18$, $SD=1.45$) and that their family has never asked them to put their smartphone away or switch it off during meals. It can be concluded that the usage of mobile phones among the

students are still at a moderate level and does not provide a negative impact on the relationship with their family, as shown in Table 3.

Table 3: Descriptive statistics for the interpersonal relationship among young adults in higher education in Malaysia. (n=110)

Items of Interpersonal Relationship	Mean	Std. Deviation
My family and friends feel more comfortable with me when I use a smartphone to convey my problem	2.55	1.14
I avoid talking about my problem face to face because networking apps work better for me	2.58	1.30
My family really tries to help me with my phone addiction	2.63	1.30
I feel more comfortable having virtual friends than meeting real friends face to face	2.63	1.35
My friends are closer to me since they realise my real attitude from chatting through a smartphone	2.75	1.22
I found myself funnier and happier when I use a smartphone to communicate with my friends	2.91	1.34
Most of the time I talk about my problems with my friends on the smartphone	3.12	1.34
My family think that I spend too much time on social networking	3.18	1.31
Since I have the smartphone, I consider my relationship with family is closer	3.24	1.45
Since I have the smartphone, I consider my relationship with friends is closer	3.37	1.41
I put security code on my smartphone to secure my relationship with my spouse	3.38	1.61
My partner / spouse / family asked me to put my smartphone away / switch it off during meals	3.39	1.56
I admit that smartphone overuse may ruin my relationship with my partner / spouse / family, but I still ignore that fact	3.48	1.68
I feel out of touch when I haven't logged onto social networking for a while	3.64	1.28
I felt like my friend and I could become closer if we interact a lot via smartphone	3.65	1.14
I think that I'm good at helping others to solve problems with smartphone because it saves more time and money than meeting them in person	3.67	1.34
I feel I am a part of the social networking community	3.70	1.16
I felt connected to my friends when using my smartphone	3.97	.96
Interpersonal Relationship	3.22	.84

In addition, the students also perceived that the mobile phone has helped to improve their relationship both in real-life and online relationship. The students perceived that socialising using smartphones has helped them to become closer to their friends when they interact via smartphone or via social media (M=3.65, SD=1.14). Besides, smartphones have helped them solved their friend's problems better because they can save more time and money than meeting them in person (M=3.67, SD=1.34), and they feel more connected to their friends when they

are using their smartphone ($M=3.97$, $SD=.97$). From the overall findings, it can be seen that a mobile phone can provide a positive effect on the students whereby, it can improve the student's interpersonal relationship with their friends.

Table 4: Level of mobile addiction among adolescents in higher education in Malaysia. (30 items)

Interpersonal Relationship Items	Frequency	Percentage (%)
Low	6	33
Moderate	12	67
High	0	0
Number of Items/	18	100
Total Percentage		

On the other hand, Table 4 shows the overall level of the interpersonal relationship among the respondents in higher education in Malaysia according to its frequency and percentage. The highest percentage for the overall 18 items for mobile addiction is at a moderate level with 67% (12), followed by low level with 33% (6) and high level with 0% (0). Thus, this indicates that the respondents have a moderate level of interpersonal relationship.

RO3: To identify whether there is a significant difference between gender and mobile addiction among young adults in Malaysia.

Table 5 shows that respondents' perception of mobile addiction based on gender. For mobile addiction, the mean score obtained by the male students was 3.22 ($SD=.811$) as compared to the mean score of female students which was 3.22 ($SD=.941$). Both genders had obtained the same mean score.

Table 5: Mean and Standard deviation between gender and interpersonal relationship

Interpersonal Relationship	Gender	N	Mean	Std. Deviation	Std. Error
					Mean
Interpersonal Relationship	Male	80	3.22	.811	.091
	Female	30	3.22	.941	.171

Based on the results in Table 6, there was no significant difference in the mean score of mobile addiction [$t(108)=.008$, $p<0.05$] based on gender. Hence, it can be concluded that there is no significant difference in mobile addiction between male and female respondents.

Table 6: Independent Samples T-test between gender and interpersonal relationship

		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
Interpersonal Relationship	Equal variances assumed	1.490	.225	.008	108	.994	.00139	.18144	-.35825	.36103
	Equal variances not assumed			.007	46.079	.994	.00139	.19421	-.38951	.39229

RO4: *To identify if there is any relationship between mobile addiction and interpersonal relationship among the adolescent in Malaysia.*

Pearson's coefficient score was $r = .576$ ($p < .001$). This indicates that a positive, moderate, and very significant relationship between mobile addiction and interpersonal relationship ($r = .576$, $p = .000$). Since $p < 0.01$, therefore, there is a very significant linear correlation between mobile addiction and the respondents' interpersonal relationship, as shown in Table 7.

Table 7. The relationship between mobile addiction and interpersonal relationship among adolescents in Malaysia

		Mobile Addiction	Interpersonal Relationship
Mobile Addiction	Pearson Correlation	1	.576**
	Sig. (2-tailed)		.000
	N	110	110
Interpersonal Relationship	Pearson Correlation	.576**	1
	Sig. (2-tailed)	.000	
	N	110	110

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

Discussion

This study has three main purposes. First, this study has found that young adults' in Higher Education in Malaysia have a moderate level of mobile addiction and interpersonal relationship. Second, the study also showed that there is no significant difference between gender and mobile addiction. However, it is found that there is a relationship between mobile addiction and interpersonal relationship among young adults in higher education in Malaysia.

The findings from this study are aligned with a study of an Italian version of the Internet Addiction Test (IAT) conducted by Ferraro, Caci, D'Amico, and Di Blasi (2007). This study was conducted amongst respondents in the age range of 13 to 50 years old. The results stipulated that there are no significant differences in IAT scores based on gender, age, or status of employment. Besides that, a similar study with American and British participants also showed that there is no significant difference between gender. However, there is a significant difference identified in mobile addiction according to an age whereby the young users are at greater risk than the adult users (Ferraro et al., 2007). To support these findings, a study done in Indonesia found that addiction among male students was 76.1% while for female students, the score was 75.1. For male students, the highest percentage in using the smartphone is for entertainment which involved 94 people (62.3%), while for the female students almost three-quarter of the samples chose social media for the purposes. This showed that there is no big difference in the choice of social media or entertainment between gender.

Besides the above studies, a study in Asia measured the level of middle school student's mobile addiction in South Korea, and it highlighted that most students are normal users of the smartphone (Cha & Seo, 2018). The Smartphone Addiction Proneness Scale scores used in this study showed that 563 (30.9%) were classified as an at-risk group for smartphone addiction, but the majority 1261 (69.1%) were identified as a normal user group. This showed that the level of mobile addiction is still at a moderate level, which is similar to the finding of this study.

In addition, the results of this study were also being supported by previous studies which found that there is a relationship between mobile phones addiction with interpersonal relationship. Some researches show that extroversion and anxiety can significantly predict mobile phone addiction (Bianchi & Phillips, 2005). However, another study highlighted the contrary evidence. This study done by Whiteside and Lynam (2001) found that depression and anxiety cannot significantly predict mobile phone dependence. Together these results indicate that the relationship between anxiety, which is one of the items in interpersonal relationship and mobile phone addiction has yet to be clarified.

Conclusion

The current study remains inconclusive concerning the plausible effect of smartphone access on users' level of psychological power. Earlier work recommended that access to an



individual's smartphone does not amplify that person's level of psychological power (Egan & Larson, 2015). However, there is an opposite result from the findings of this research which claims that smartphones can help to increase the student's interpersonal relationship. Undeniably, the existence of new rules, regulation and even new laws can be made to help to deal with the developing problem of inappropriate mobile smartphone utilisation. According to Sueb (2020), excellent teachers should have some strategies to address students' misbehaviour. For example, putting up signs asking college students to avoid using their mobile phones in the class, policies of banning the use of selfie sticks at entertainment parks, and enforcement of laws accompanied by fines for texting while driving. People appear both unaware of and unable to follow the social norms surrounding social interaction while using these devices. Thus, it can be concluded that the use of mobile phones can be a massive help to people, but immoderate use of flawed use of it can result in negative influences on both the users and people around them.

However, we have to aware that mobile phone or the use of Information and Communication Technologies (ICT) can also have a positive influence not only to the higher education sector but also for the economic development of a country. A study from Parwanto & Wulansari (2020) has found that the use of ICT can notably lead to the economic development in Asian countries, with distinct influence for different types of economies levels. Another research done by Wulansari and Parwanto (2020) has also supported this statement by which they have concluded that having an advanced technology such as fixed telephone subscriptions and fixed broadband subscription can lead to a positive and significant impact on trade openness which is vital to ensure the economic development of a country. In addition, Parwanto and Wulansari (2020) also promote the policy recommendation that the government of each country should increase the use of ICT to ensure economic development in their country.

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