

A Study on Consumer Behavior and Effect of Usage of Smartphone Amongst Undergraduate University Students

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ABSTRACT

This study aims to analyze the consumer (students) behavior towards smartphones and the positive or negative effect of smartphone usage by concentrating on academic performance. This study was conducted by distributing the questionnaire among undergraduate university students in India and Malaysia, consisting of 100 students (50 Indian and 50 Malaysian students). Based on the findings, time spent on smartphones and the motive for using smartphones are largely attributable to the daily productivity of students.

Keywords: Academic Performance, Consumer Behavior, Smartphone, Undergraduate University Students

INTRODUCTION

Before the advent of technology, socializing was so inconvenient and impossible, especially for long distances during the time of our ancestors. A quote correctly sums up, "Any sufficiently advanced technology is equivalent to magic". In recent years, smartphones have become such an integral part of our daily lives that it is unimaginable and impossible to survive if it ceases to exist. The rapid advancement in the information and communication technology (ICT) industry has changed the style of consuming, distributing, and creating information. Smartphones are configured with advanced computing capabilities that integrate dual-use functions of standard mobile phones and computers. The smartphone's features such as navigation, internet browsing, emailing, gaming, and communicating become the causes for people who possess it. Based on the Digital 2021 April Global Statshot Report, there are 5.3 billion smartphone users globally. Thus, the demand for smartphones rises rapidly, the same as university students. Ismail (2019) said that the development of ICT has caused the smartphone to provide a massive platform in the learning journey of university students.

People are considered dependent on smartphones because they believe that smartphones have become an indispensable necessity in their lives. It is critical to understand the determinants that affect the dependency of students on smartphones.

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The determinants of consumer behavior, such as social needs, social influences, and convenience, could affect smartphone dependency (Rosaline & Johnson, 2020). Consumer behavior is about how customers select, buy, use, and dispose ideas, goods, and services to satisfy their needs and wants (Chaurasiya et al., 2020).

The dependency of university students on a smartphone might affect their lifestyle. The students may be beneficial or detrimental by using smartphones in their studies (Nasser et al., 2020). This is because various smartphone features bring more convenience in their life, including study. A very clear example of such a situation is that students can find relevant articles or journals by searching keywords through search engines. However, the research from Soyemi, Oloruntoba, & Okafor (2015) indicated that most of the students use their smartphones for entertainment purposes instead of study purposes. The development of information and communication technology (ICT) will increase people's dependency on smartphones in daily tasks and in the educational industry (Koszalka & Ntloedibe-Kuswani, 2010). For example, university students can access course content, an online discussion between teachers and coursemates, and additional study resources anytime through smartphones (Cochrane, 2010). Sumathi, Lakshmi, & Kundhavai (2018) described a smartphone as a whole library in the student's pocket; it could help the students to gain and access the extra information.

Nasser et al. (2020) showed that 30.29% of undergraduate university students in Universiti Putra Malaysia believed that the improvement of their academic achievement is because of the assistance of their smartphones. Mtega, Bernard, Msungu, & Sanare (2012) showed that the students practice traditional learning and apply the smartphone applications such as Google Drive, Google Scholar, and Evernote in their learning journey. With advanced smartphone applications, they will share their learning points in class with each other for peer reviews and ease the group project assignments. In short, the results of these research papers agree that using smartphones in studying positively affect academic performance. Nevertheless, smartphones will also negatively affect study if we look from various angles. Students pay scant attention to the revision or study as they are distracted, especially when the smartphone is ringing. An example mentioned by Elder (2013) is that the students who use smartphones in the classroom are scored lower than those who did not. This is because they focus on surfing the Internet or texting and are not able to recall back the lesson from the lecturer. Nasser et al. (2020) illustrated that 20.09% of undergraduate university students considered smartphones had taken a toll on their academic performance. In brief, smartphone usage during the study may exacerbate the result and academic performance of the students. In brief, our research aims to identify the relationship between undergraduate university students' behavior on smartphones and their academic performance.

LITERATURE REVIEW

Smartphone Usage Pattern

Smartphone has become an indispensable necessity among people from all walks of life, including students. Smartphones are also known as mini-computers due to their operating systems being able to perform well like the computer, and it is small in size, enabling everyone to carry along (Rambitan, 2015). According to Nishida, Tamura, & Sakakibara (2019), the stimulus of smartphone usage of university students is the simplicity of operation, browser, user interface, video player, music player, and

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navigation system. From students' perspective, smartphone features allow them to access study materials or educational services as a computer everywhere and anytime (Lepp, Barkley, & Karpinski, 2014). Hence, the smartphone is a helpful tool that could help students achieve better academic performance if they use it properly.

Determinants of Consumer Behavior

Social Needs and Impact of Smartphones on Academic Performance

Social needs refer to people's need for emotional relationships such as affection, a sense of belonging, and love that could drive human behavior. Social needs become one of the elements that contribute to the consumers' dependency on a smartphone. This is because the applications of smartphones such as Facebook, Instagram, and Twitter provide a comprehensive platform for smartphone users to communicate with people around the world (Lippincott, 2010). An example worth mentioning here is that smartphones have become an essential tool for university students to communicate with distant family members. Therefore, university students are highly dependent on smartphones as they are instruments to satisfy their needs to communicate through social media and social networking sites (Bridges, Rempel, & Griggs, 2010; Rosaline & Johnson, 2020). The high dependency on smartphones because of social needs could motivate students and thus affecting their academic performance (Fook, Narasuman, Aziz, Mustafa, & Han, 2021). Chung, Subramaniam, & Dass (2020) showed that university students with social stigma would become active learners in online classes through smartphones. This led to the following hypothesis:

H₁: Social needs is positively related to the academic performance of undergraduate university students.

Social Influences and Impact of Smartphones on Academic Performance

Social influences from friends and family members significantly influence adolescents' attitudes, behavior, and beliefs (Suki & Suki, 2007). Social influence refers to the extent to which a student assumes those around the student should also be using certain smart devices (Rosaline & Johnson, 2020). Those close to us, such as friends and family members, can easily affect the consumers' perspective towards the importance of smartphones. Their opinions would highly encourage the students to have higher dependency on smartphones (Auter, 2007). Moreover, the students tend to get motivated and bumped up from their peers and family members when they feel negative. Therefore, the people around the students who use SNSs could positively affect their academic performance because they could get information from their social groups or study groups (Lahiry, Choudhury, Chatterjee, & Hazra, 2019). Thus, we hypothesized that:

H₂: Social influences is positively related to the academic performance of undergraduate university students.

Convenience and Impact of Smartphone on Academic Performance

Oraison, Nash-Dolby, Wilson, & Malhotra (2020) declared that smartphones make life more convenient because smartphones allow people to have information at their fingertips. This showed that the handiness of smartphones is one of the factors that lead students to have a high dependency on a smartphone. University students can chat with others, check their email, read ebooks anytime and anywhere using their smartphone (Hudson, 2010). They can perform the learning task everywhere instead of using a laptop or desktop, which have to perform in a particular fixed location. Furthermore, integrating features and functionalities of standard mobile phones and computers fulfills the

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consumer needs (Stephens & Davis, 2009), including university students. High-speed 4G/5G and Wi-Fi networks allow the Internet to become more accessible in public areas such as university campuses, restaurants, and malls. The combination of networking and smartphones will increase student learning capability. For instance, students can conduct online discussions with peers and search study materials more conveniently in a short time.

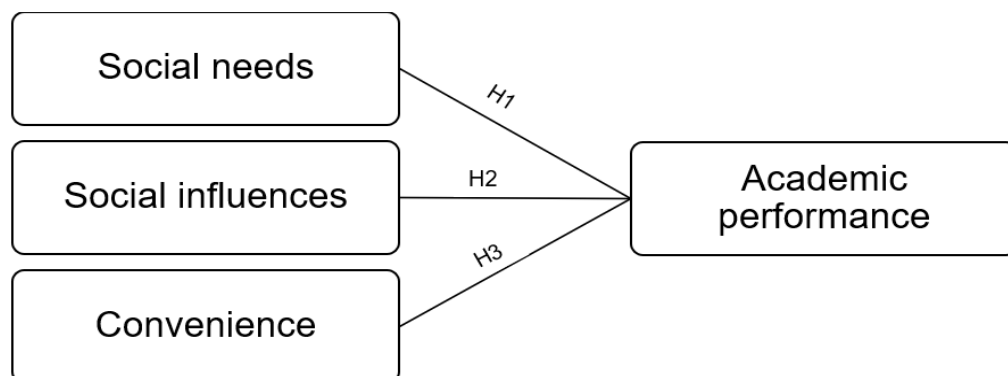
Consequently, university students who rely highly on smartphones will increase their dependency on smartphones due to their convenience and handiness. Mtega et al. (2012) showed the students practice traditional learning and apply the smartphone applications such as Google drive, Google scholar, and Evernote in their learning journey. With advanced smartphone applications, students will be able to share their learning points in class for peer reviews and ease the group project assignments. The advanced smartphone application makes their studies more manageable and positively affects their academic performance. On this basis, we hypothesized:

H₃: Convenience is positively related to the academic performance of undergraduate university students.

Research Framework

Figure 1 illustrates the research framework of the relationships between determinants of student behavior on smartphone usage (social needs, social influences, convenience) and student academic performance.

Figure 1. Research Framework



RESEARCH METHOD

A total of 100 questionnaires were distributed to targeted respondents, undergraduate university students in Malaysia and India. The time frame for the data collection is one week. The questionnaire was scored using a 5-point Likert scale to affirm their level of agreement to the statement, with the values ranging from 1 (strongly disagree) to 5 (strongly agree).

A quantitative study technique was implemented to determine whether the independent variables, social needs, social influence, and convenience, are significantly and positively related to the dependent variable (academic performance). This study used

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the statistical data from the statistical analysis in the statistical package for the social sciences (SPSS) computer program version 25.0. A regression analysis was applied using SPSS to measure the significance of the relationship between the independent and dependent variables. Besides, we used SPSS to analyze data by using a reliability test to determine the consistency of the results. Reliability test refers to how the consistency of a test measures the characteristics. Cronbach's Alpha is one of the general standards in measuring internal consistency. The benchmark of the Cronbach's Alpha is presented in Table 1.

Table 1. Benchmark of the Cronbach's Alpha

Cronbach's Alpha	Implied Reliability
$\alpha \geq 0.90$	Consider shortening the scale
$0.90 > \alpha \geq 0.80$	Very good
$0.80 > \alpha \geq 0.70$	Respectable
$0.70 > \alpha \geq 0.65$	Minimally acceptable
$0.65 > \alpha \geq 0.60$	Undesirable
$0.60 > \alpha$	Unacceptable

RESULTS AND DISCUSSION

The participants were university students in Malaysian universities and Indian universities. Table 2 illustrates that 100 students ($n= 100$) have participated in this survey, 50 from Malaysia and 50 from India. A total of 32% of the respondents are male, and 68% are female. Among the undergraduate students, 14% are first-year students, 69% are still in the middle of their studies, and 17% are final-year students. In addition, 59% believe that smartphone is necessary and the remaining 41% consider that smartphone is not a necessity. Also, 32% of total respondents spend 9 hours and above daily on their smartphone, 27% use their smartphone for 6 to 8 hours per day, 26% spend 3 to 5 hours per day, followed by 15% spend below 3 hours daily. In brief, a smartphone is necessary to undergraduate university students because more than half of the respondents (59%) spend 6 hours and above on their smartphone and they agree that a smartphone is a necessity in their lives.

Table 2. Respondent Demographics

	Frequency	Percentage
Gender		
Male	32	32
Female	68	68
Country		
India	50	50
Malaysia	50	50
Year of studies		
First year student	14	14
Middle year student	17	17
Final year student	69	69
Is it smartphone necessity		
Yes	59	59

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No	41	41
Daily hours spend on smartphone		
9 hours and above	32	32
6-8 hours	26	26
3-5 hours	27	27
Below 3 hours	15	15

Table 3. Reliability Test Results

Variable	Cronbach's Alpha Based on Standardized Items	Number of Items
Social Needs	.617	3
Social Influences	.795	3
Convenience	.699	3
Academic Performance	.733	5

The reliability test result shown in Table 3 indicates that it is significant to determine the consistency of the variable based on the Cronbach's Alpha and Standardized Items. Also, social influences hit the highest value of 0.795 while the lowest value is 0.617, which is social needs. In short, the results of the variables are undesirable to respectable as the value is between 0.6 to 0.8 for Cronbach's Alpha standard value.

Table 4. Relationship between Determinants of Smartphone Usage Pattern and Academic Performance

Model	Unstandardized Coefficients		Standardized Coefficients		Sig.
	B	SE	Beta	t	
1 (Constant)	1.436	.444		3.231	.002
Social Needs	.245	.104	.240	2.366	.020*
Social Influences	.022	.057	.036	.384	.702
Convenience	.271	.086	.311	3.164	.002**
Adjusted R ²	.200				
R ²	.224				
Significance	.000				

a. Dependent Variable: Academic Performance

b. Predictors: (Constant), Social Needs, Social Influences, Convenience

N=100, *p<0.05, **p<0.01

Table 4 shows the regression coefficient between the dependent variable and the predictors. The model consists of three main variables: social needs, social influences, and convenience. First, the coefficient of determination (R²) is 0.2, which shows that 20% of the variation in the dependent variable (academic performance) would be affected by the predictors.

The p-value of the predictors is 0.000, which shows that the relationship between the predictors has a significant impact on the dependent variable. Social needs have a p-value less than 0.05, and convenience has a p-value less than 0.01. This indicates that these two predictors have a significant relationship with the dependent variable.

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Moreover, convenience shows a greater impact towards the dependent variable, with coefficient beta of 0.311, than social needs with a coefficient beta of 0.240. On the other hand, the p-value of social influences is 0.702, which is greater than 0.10. Hence, there is no significant link between social influences and the dependent variable. H1 and H3 were supported.

According to Table 4, the p-value of social needs is 0.020, which is less than the significant level of 0.05. Hence, there is a strong evidence that social need is positively and significantly related to the academic performance of undergraduate university students. This result is in line with Mohd (2013), showing that social needs significantly affect student behavior on their smartphones as they have to stay connected with their family and peers through social media such as Facebook, MySpace, Twitter, etc. In addition, the findings from Wai, Ng, Chiu, Ho, and Lo (2016) demonstrated that smartphones increase the level of enjoyment of collaboration with peers and professors. Therefore, the high dependency on smartphones due to social needs will positively affect academic performance. Fook et al. (2021) illustrated that smartphone has many tools such as online forum, online meeting, online discussion and group chats that could motivate the students. Chung et al. (2020) also discovered that university students who have social stigma and do not ask questions in the physical class tend to become active learners in the online class. In short, the researchers suggested a positive relationship between social needs and academic performance. Those who connect with their peers or professors will produce better academic performance than those who remain isolated.

Table 4 also illustrates that convenience has a p-value of 0.002, which is lower than the significance level of 0.01. Therefore, it indicates a positive and significant relationship between convenience and academic performance. As smartphones are getting more tech-advanced, students find it easily accessible and convenient to improve their studies. This corroborates Oraison et al. (2020) contending that smartphone convenience increases smartphone usage. Moreover, having a smartphone is like having a standard mobile phone and computer (Arif, Aslam, Ali, 2016). Besides, Nasser et al. (2020) showed that 30.29% of undergraduate university students in Universiti Putra Malaysia believed that smartphone assistance could improve their academic achievement. A smartphone is described as a whole library in student pockets because they can access massive amounts of study materials to improve their academic performance (Ifeanyi & Chukwuere, 2018; Sumathi et al., 2018). Hence, convenience positively impacts student academic performance since a smartphone is a quick search device to help students obtain more information in a short period (Rosaline & Johnson, 2020).

Based on the regression analysis results, the social influence has a p-value of 0.702, higher than the significance level of 0.1. Thus, there is a vague relationship between social influences and academic performance. Social influence may play a key role that influences student smartphone usage due to word-of-mouth amongst their friends (Park, Kim, Shon, & Shim, 2013). Lahiry et al. (2019) illustrated that students regularly use SNSs to fit in with their social group, and getting in touch with their friends positively impacts their academic performance. This is because students are likely to get motivated and bumped up from their peers when they feel down or lost and share their study points among the group. Consequently, it can be suggested that there is a significant positive relationship between social influences and academic performance. However, the present

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findings showed an insignificant positive relationship between social influences and academic performance. Therefore, H2 was rejected.

CONCLUSIONS

This study aimed to study the determinants of consumer (undergraduate university students) behavior on their smartphone usage and the impact on their academic performance. Based on the results gained from discussions, two hypotheses are found to be supported through regression analysis. Two of the independent variables in the research model, which are social needs and convenience, are positively related to the academic performance of the undergraduate university students. Moreover, convenience is the most crucial determinant of academic performance, followed by social needs. However, social influence has an insignificant relationship with the academic performance of the undergraduate university students.

This research has produced some handy thoughts and information to the incoming researchers interested in identifying the reasons for having smartphones and their impact on academic performance. As the pandemic resumes to overthrow the world, people, especially those who are z generation, are technology savvy in which smartphone has become more necessary over time. For instance, students are able to reach out to their peers and professors anywhere and anytime whenever they meet any difficulties. Students will be able to boost their learning process and manage their time well. Due to the convenience and social needs that would benefit from using smartphone, it has dramatically enhanced academic performance of undergraduate university students. Nevertheless, education entities need to introduce and encourage the students to utilise smartphone to improve their study.

Some factors limit the current study results as the questionnaires are only spread among 100 university students in India and Malaysia. Thus, it could narrow the findings of the relationship between the benefits of smartphones and academic performance. However, it is recommended to widen the questionnaire distribution to a broader coverage to increase the accuracy and quality of the results.

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