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Effect of Online Social Networking on High School Students Academic Performance

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Abstract: Online Social Networking becoming one of the most popular trends among students around the globe. There is an increasing number of research in the recent years to study this phenomenon and this study is focusing on the implications of the use of Online Social Networking towards the high school students' academic performance in Malaysia. Achieving excellence grades is vital to the high school students because it generally will give the students a better chance to obtain a good university as well as the opportunity for enrolling for better courses when pursuing their tertiary education.   Is the growing use of Online Social Networking applications detrimental to the students' academic success? Or is the Online Social Networking use behavior among the high school students in Malaysia help them to improve their academic performance? This study shade some light. The study result shows that students' use of Online Social Networking is positively correlated to the students' academic performance. This result supporting some of the previous study highlighting the benefits of Online Social Networking to the students.

1. Introduction

The rapid development of computer technology particularly the internet increases the usage of Online Social Networking (OSN) by billions of people across the globe. OSN has been identified as a networked communication platform in which participants have uniquely identifiable profiles that consist of user-supplied content provided by other users, publicly articulate connections that can be viewed and traversed by others and can consume, produce, and/or interact with streams of user-generated content provided by their connections on the site [1]. Safko and Brake [2] further defined OSN as activities, practices, and behaviors among communities of people who gather online to share information, knowledge, and opinions using conversational media. OSN is also refers as social media whereby Drury [3] defines social media as online resources that people use to share content: video, photos, images, text, ideas, insight, humor, opinion, gossip, and news. OSN has penetrated in everyday life worldwide, with Facebook, Twitter, and Google+ currently being the best-known social network sites (SNS) and youngsters are among the common users of OSN[4][5]. Youngsters are among the common users of OSN. Lenhart, Madden, Macgill

and Smith [6] cited that teenagers are among the most avid users of technology in general and social network sites in particular. With the massive membership pool of social networking sites, millions of individuals around the globe are open to such innovations particularly teenagers and young adults [7]. This study involved students studying in high schools between the age of 13 to 17 years old.

Over-involvement or obsession with social networking by students can have negative impacts on academic performance [8]. Hence, it is extremely important to conduct an empirical study to understand the user behavior of OSN to gauge the possible implications of the use of OSN to the students. Undeniable, education through academic, is part of a platform to produce human capital and to fortify the development of a highly-skilled, innovative workforce which is very critical as enabling factors for social, cultural, and economic growth of a nation. The commitment and efforts put into education are some of the most fundamental investment a nation can make towards securing the future well being of a society. Education is the key to building human capital and human capital is vital for building a nation [9]. The competitive global economy needs a nation that

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continues to progress in tandem with it and it is a necessity to have a high standard of education that will support a high employment standard, social status, high income, and a better living standard. Furthermore, education adds up to enhance the living standards and lifestyle of a nation [10].

The preoccupation with OSN when there is a need for the time spent on their study could give a negative impact on the students' academic results. O'Keeffe and Clarke highlighted the growing use of OSN is often accompanied by parental worry of potential detriment to their children's academic success[11]. Students might lose focus and spent more time on OSN rather than their study and there is an abuse of the use of the socializing tools by neglecting the informative and educating benefits OSN could offer [12]. Excessive use of social media makes the users addicted to the Internet [13]. OSN is also considered as time killers as the long hours of online chatting ultimately ends up with decrease in the quality as well as the productivity of efforts [14] which was also reflected in the study conducted by Leftheriotis et al.[15]. Cela et al. reported that the new generation teens do not take an interest in reading books; instead, they spend a lot of time on social media [16]. It is also found that social media is not being used for academic purpose [17]. School teachers admit that students fall asleep during classes and unable to pay adequate attention to the lectures. The habit of late night awakening is likely to deteriorate their health leading to aggressive or inappropriate behaviors. Inadequate sleep has been linked to diabetes, hypertension, obesity and depression [18]. Another study by Bowman et al., students who engaged themselves in social media and instant messengers invariably fail to complete their task than those who do not engage in it [19]. Students' deficits have been attributed to online-social networking (OSN) usage during study periods [20].

Despite all the possible negativities highlighted on the OSN usage to the students, some studies do highlight the benefits. Illustrated as a new communication platform, OSN exhibits an important impact on student motivation to learn, affective learning and classroom climate [21]. Ivala and Gachago [22] measure the students' engagement through Facebook and blogs and found that the OSN platforms help to enhance the students' performance. Lin, P-C., Hou, H-T, Wang, S-M and Chang-E [23] measured how students perceived Twitter as an educational tool and they revealed that students are more interested in information sharing about the courses through OSN platforms. OSN also develop students' capacities to create and arouse interests in academic subjects [24]. OSN foster communication among teachers, students, parents, and community members, and helps create online professional learning communities [25]. Prestridge [26] focused a study on students' Twitter usage, it was indicated that Twitter support engagement in learning. On the other hand, universities use OSN in marketing, learning and teaching, student recruitment, alumni communication, student services, and their libraries . OSN created an online social space where students can build and maintain social capital with others [27][28]. It is crucial to conduct more empirical research to study the phenomenon of OSN and it impacts to the students in terms of academic. However, despite OSN gaining acceptance in universities around the world, the study on students' adoption of OSN is still unexplored fully in Malaysia. Thus, this study is designed to address this gap to provide useful insights for future researchers. This study offers important implications to both theory and practice.

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2. Research Model And Hypotheses

The Unified Theory of Acceptance and Use of Technology (UTAUT) model proposed by Venkatesh V, Morris, Davis GB and Davis FD [29] is the theoretical foundation for this study. UTAUT aims to explain user intention to use an Information System (IS) or Information Technology (IT) and the subsequent usage behavior. The theory holds four key constructs namely performance expectancy, effort expectancy, social influence and facilitating condition. These four key constructs are the direct determinants of usage intention. Gender, age, experience, and voluntariness of use are posited to mediate the impact of the four key constructs on usage intention and behavior and the fourth is a direct determinant of user behavior. However, due to it exploratory in nature, this study used only the four key constructs and exclude the gender, age, experience and voluntariness mediators. Students' Academic Performance is added into the original model to make the theory applicable to this context of studies.

A. Unified Theory of Acceptance and Ease of Technology for Students (UTAUTS)

The original UTAUT model is re-labeled to Unified Theory of Acceptance and Use of Technology for Students (UTAUTS) and the Students' Academic Performance is added into the original model. Figure 1 shows the modified UTAUT to make the theory applicable to this context of studies.

B. Students Performance Expectancy

Performance expectancy is defined as 'the degree to which a person believes a system improves his or her performance'. It is the perspective of the user who looks at personal performance progress, considering such aspects as convenience of use, rapid response, and how effective the service is. In this study's context, it is believed that using the OSN will help the students to attain and gain what they desire to achieve like meeting friends online, getting help from friends, and to have leisure online. Due to the expected benefits perceived from the use of OSN, it is posited that performance expectancy will influence students' behavioral change towards greater intention to use OSN. Examining the students' intention rather than actual use of OSN is acceptable as the measurement of intention is as good as actual use particularly when data about actual use is difficult to obtain [30].

Accordingly, the following hypothesis is proposed: *H1. Students' Performance Expectancy (SPE)is positively related to students' Behavioral Intention (SBI).*

C. Students Effort Expectancy

Effort expectancy is described as 'the degree of ease associated with the use of the technology', together with the implication that a user is convinced that there is no requirement for additional effort in using the system [29]. In this study, SEE examined the students' perception of the ease of using OSN. If the students perceive OSN is easy to use, the intention to use it frequently will be higher. Hence, the second hypothesis is *H2. Students' Effort Expectancy (SEE) is positively related to students' Behavioral Intention (SBI).*

D. Students Social Influence

Social influence is defined as 'the degree to which an individual perceives the importance of others' beliefs that he or she should use the new system'[29]. When friends recommend and encourage them to use the services, they are more likely to agree [31]. Personal connections such as family members, teachers, peers, the school administrators, and even the online community have been identified to facilitate the behavior of users towards intention to use the internet [32][33]. To determine whether the students' intention to use OSN is influenced by other individuals, the following hypothesis is constructed:

H3. Students' Social Influence (SSI) is positively related to students' Behavioral Intention (SBI).
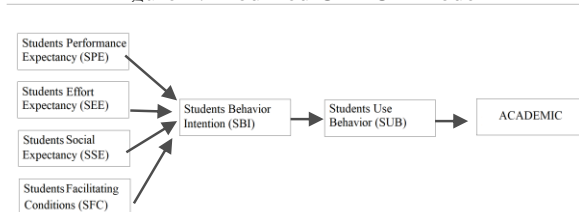
E. Facilitating Conditions

Facilitating condition is defined as 'the degree to which an individual believes that an organizational and technical infrastructure exists to support the system use'[29]. In this study, facilitating conditions are the available resources that enable the students to use OSN. It simply means that, the ready resources of technology devices like smartphone and computer that enable the students to have access to the OSN through internet connection. Other conditions include costs associated with such use, and the prior knowledge that users must have before they could use OSN. These are important considerations as facilitating conditions have been found to have a direct influence on behavioral intention [34]. For this study, the following hypothesis arises: *H4. Students' Facilitating conditions (SFC) are positively related to students' Behavioral Intention (SBI).*

F. Academic Performance

Academic achievement represents performance outcomes that indicate the extent to which a student has accomplished specific goals that were the focus of activities in instructional environments, specifically in school, college, and university [35]. Academic performance is also defined by Loo and Choy [36] as, the student's characteristics dimension of how students deal with their studies and how they cope with or accomplish different tasks given to them by their teachers. The determinants of this dimension are student's intelligence, personality and academic context, for example, student's ability to study and remember facts and being able to communicate their knowledge verbally or down on paper [37]. In this study, academic performance is the students' assessment through the average examination scores at the end of the school term. In Malaysia, high school students are assessed mainly through the paper examination which also consists of a percentage of coursework. The result of this assessment can be obtained through an online portal which is accessible by the students and parents. The teachers will upload the students' results into the online portal called 'Sistem Analisis Peperiksaan Sekolah or SAPS" which eventually can be accessed by both parents and students at https://sapsnkra.moe.gov.my/ibubapa2/). For this study, the following hypothesis arises: *H5. Students' Behavioral Intention (SBI) are positively related to students' Academic Performance.*

Figure 1. Modified UTAUT Model

3. Methodology

G. Participants

The participants of this study were high school students in Malaysia aged between 13 to 17 years old. The questionnaires distributed to a total number of six high schools from two states in Malaysia. These two states are, Selangor and Kuala Lumpur. Permission to enter the schools and to distribute the survey questionnaire to the students was obtained from the appropriate authorities.

H. Procedure and Data Collection

The sample size was determined by considering the accuracy, cost, type of statistical test, characteristics of the variables and the population size [38]. Due to cost and time factors, only a total number of 380 questionnaires distributed to the 6 schools. The high schools were randomly selected from a total number of 382 schools in the states of Selangor and Kuala Lumpur. The researcher selected 2 classes from each school which

have an average of 30 students in each class. Only a total number of 247 valid questionnaires were analyzed.

The study adapted the measuring instruments for every latent construct from literature and customized the items to suit this particular study. Instruments used to measure the constructs in this study were adapted from the previous studies done by Khong, Siong, Lin and Uchenna [39] and Jomon Aliyas Paul, Hope M. Baker, Justin Daniel Cochran, [40] on OSN study and intention to use internet marketing which using the UTAUT as their theoretical framework.

After the customization process completed, the researcher distributed the questionnaires to the selected panel of experts for pre-testing. Among the experts involved in the pre-testing stage were, the contents expert to assess the Content Validity, the language expert to assess the Face Validity, and the measurement expert to assess the Criterion Validity of the instruments. Also, the researcher sent some of the 20 questionnaires to the randomly selected respondents to assess how much they understand the meaning of every item that intended to measure their perception regarding the statement being presented. The respondents provided comments and suggestions for the researcher to enhance the presentation of the instruments.

After the pre-testing of the instruments had been completed and the comments obtained from the experts as well as the respondents, the researcher amended the item statements accordingly, and re-arranged the format based on the expert advice and feedback from the respondents [41][42][43][44]. The revised questionnaire then ready for Pilot Testing and Exploratory Factor analysis (EFA). Finally, the revised questionnaires were sent to 100 randomly selected respondents to explore and assess the dimensionality of items to measure each particular construct.

I. Validity and Reliability Analysis for Constructs

Both validity and reliability test were conducted in order to ensure the measurement tool use for this study is cogency and performing consistently well. Validity test often known as a test that is concerning with the degree to which an instrument measures in what it is designed to measure [45][46]. The reliability test is also in regard to the instrument's ability to measure the items in a consistent and stable manner [47]. Every question contained in the questionnaire was made certain to be unerring and comprehensive through a procedure called Exploratory Factor Analysis (EFA).

EFA is applied to explore and assess the dimensionality of items measuring that particular construct. Factor analysis operates on the notion that measurable and observable variables can be reduced to fewer latent variables that share a common variance and are unobservable, which is known as reducing dimensionality [48]. EFA is used when a researcher wants to discover the number of factors influencing variables and to analyze which variables 'go together' [49]. Mohammed Sani et al.[50] indicated that, the researcher needs to employ EFA procedure for every construct to determine if the dimensionality of items has changed from the previous study. This is especially true when the existing study is an alien to the previous study in terms of industry, culture and socio-economic status of the population, and also the lapse in time (duration) between the two studies.

EFA was implemented by conducted the principal components analysis of Kaiser-Meyer-Olkin (KMO) and Bartlett's Test of Sphericity. Statistical Package for Social Science (SPSS) version 22 software was used to perform this process. The result of KMO and Bartlett's Test of Sphericity which was performed using the extraction method of Principal Component with Varimax (Variation Maximization) and indicated that all the exogenous variables passed the Bartletts' Test of Sphericity and significant (p-value < 0.05). The measure of sampling adequacy by Kaiser-Meyer-Olkin (KMO) is also excellent since it exceeded the required value of 0.6 [51][44]). Table 1 shows the results of KMO and Bartlett's Test for all constructs.

TABLE 1. SUMMARY OF KMO AND BARLETT'S TEST FOR ALL CONSTRUCTS

KMO and Bartlett's Test		Exogenous Variables					
		SPE	SEE	SSI	SFC	SBI	SUB
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		0.83	0.89	0.86	0.7	0.62	0.75
Bartlett's Test of Sphericity	Approx. Chi-Square	1059	852	1764	340	499	1314
	df	136	45	153	21	21	105
	Sig.	.000	.000	.000	.000	.000	.000

Meanwhile, the results of dimensions or components that emerged from the EFA procedure based on the computed Eigenvalue greater than 1.0 for every component in all constructs show that the total variance explained for all variables is acceptable since it exceeded 60% [43][44]. Few items from each component need to be deleted since they failed to achieve the minimum requirement for factor loading of 0.6. The result is shown in Table 2 below. The retained items used in the next step of Confirmatory Factor Analysis (CFA) which will be discussed in the next section.
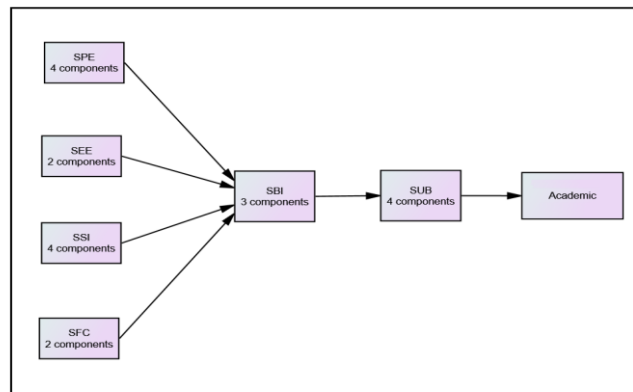
TABLE 2. COMPONENTS AND TOTAL VARIANCE EXPLAINED FOR ALL CONSTRUCTS

The Dimensions or Components and Total Variance Explained		
Variables	Components	Total variance explained
SPE	4	63.287
SEE	2	65.886
SSI	4	69.219
SFC	2	66.652
SUB	3	62.800
SBI	4	75.011

Finally, the study needs to compute the value of Cronbach's Alpha to determine the Internal Reliability of the retained items in measuring in all of the latent constructs. The internal reliability or sometimes called internal consistency indicates how strong the respective items are holding to each other in measuring the same construct. The value of Cronbach's Alpha should be greater than 0.7 for the items to achieve the Internal Reliability [52]. Cronbach's alpha coefficient for the dependent variables were 0.719 for SPE, 0.827 for SEE, 0.801 for SSI, .0705 for SFC, 0.772 for SBI and 0.717 for SUB. Results for all retained items have exceeded the required value. After performing EFA, the theorized relationship among constructs in the model is shown in Figure 2.

FIGURE 2. THE THEORIZED RELATIONSHIP AMONG CONSTRUCTS

The number of components in Figure 2 measuring the construct and the respective items under each component which was determined through EFA. The first exogenous construct is Students' Performance Expectancy (SPE), which consists of 4 components. The second exogenous construct is Students' Effort Expectancy (SEE), which consists of 2 components. The third exogenous construct is Students' Social Influence (SSI), which consists of 4 components and the fourth exogenous construct is Students' Facilitating Conditions (SFC), which consists of 2 components. The first mediator construct is Students' is Students User Behaviour (SUB) measured using 3 components and the second mediator is Behavioural Intention (SBI), measured using 4 components. The sole observed variable in the model is Students' Academic Performance. Thus, all latent constructs involved in the study are second-order since they are measured using few components and each component is measured using multiple items in a questionnaire. Every item is measured using an interval scale which ranges from 1 (strongly disagree) to 5 (strongly agree) with the given statement.

J. Confirmatory Factor Analysis

The measurement model of every exogenous construct for this study is quite complicated. Hence, for a complicated model, this study needs to conduct the CFA procedure separately for every construct. According to Kashif, Samsi, Awang and Mohamad [53], before executing SEM, the study needs to prove that all constructs in the model are discriminant of each other or they are not highly correlated especially between the exogenous constructs. If the two exogenous constructs are highly correlated (correlation greater than 0.85), then there exists a serious problem called Multi-collinearity. The study could assess the CFA for each measurement model separately and will pool together at the final stage when all constructs achieved the respective thresholds for validity and reliability. Once the individual second-order CFA assessment was completed, the study combined all latent constructs and conducts the Pooled-CFA to assess the discriminant validity among these constructs[51].

In SEM, the Fitness Indexes reflect how fit is the model to the data. There are three model fit categories

namely Absolute Fit, Incremental Fit, and Parsimonious Fit [52]. The measures include Root Mean Square Error of Approximation (RMSEA), Comparative Fit Index (CFI) and Chi-square ($R^{2)}$). The results shown in Table 3 indicate that the model provides a good fit to the data with Absolute Fit Index at (i) RMSEA < 0.08, (2) Incremental Fit Index at (i) CFI > 0.90; and finally the (3) Parsimonious Fit Index at Chi-Square/ df < 3.0.

For the assessment of Convergent Validity, the study needs to compute Average Variance Extracted (AVE). The construct is considered has achieved its Convergent Validity if the all AVE exceed the threshold value of 0.5 [52]. As for assessing the Composite Reliability, the study needs to compute the CR, and the CR values should exceed the threshold value of 0.6 for the reliability to be achieved [51]. The AVE and CR for the main construct and their respective sub-constructs are computed using the factor loading and tabulated in Table 4. Thus, the study can conclude that the Convergent Validity and Composite Reliability for this all constructs have been achieved.

TABLE 3. CATEGORIES OF MODEL FIT, LEVEL OF ACCEPTANCE. AND INDEX VALUES

Name of category	Name of index and Level of acceptance	Actual Index Value					
		SPE	SEE	SSI	SFC	SBI	SUB
Absolute Fit Index	RMSEA < 0.08	0.051	0.079	0.057	0.062	0.065	0.048
Incremental Fit Index	CFI > 0.90	0.987	0.967	0.970	0.986	0.983	0.979
Parsimonious Fit Index	Chi-Square/ df < 3.0	1.651	2.536	1.802	1.931	2.046	1.560

TABLE 4: THE CR AND AVE FOR THE MAIN CONSTRUCT

Construct	Sub-Construct	Factor Loading	AVE (above 0.5)	CR (above 0.6)
SPE	SPE1	0.76	0.638	0.875
	SPE2	0.89		
	SPE3	0.83		
	SPE4	0.69		
SEE	SEE1	0.7	0.511	0.677
	SEE2	0.73		
SSI	SSI1	0.84	0.666	0.888
	SSI2	0.92		
	SSI3	0.71		
	SSI4	0.78		
SFC	SFC1	0.9	0.847	0.917
	SFC2	0.93		
SUB	SUB1	0.76	0.5	0.799
	SUB2	0.66		
	SUB3	0.76		
	SUB4	0.64		
SBI	SBI1	0.77	0.674	0.861
	SBI2	0.82		
	SBI3	0.85		

As previously mentioned, the study needs to assess the Discriminant Validity among all constructs in the model. For this purpose, the study needs to combine all constructs and execute the CFA at once using the popularly known as Pooled-CFA[51]. Since the models are second-order, it would be too complicated if all constructs are combined together, the study needs to simplify all second-order constructs to become first order. Thus, the study needs to obtain the composite mean for every sub-construct of the measurement model.

Once the CFA output is obtained, the study needs to validate again for Validity and Reliability. From the CFA results, the researcher looks for the Fitness Indexes for the measurement model, the Factor Loading for every item, and also the correlation between constructs. The Fitness Indexes reflect the Construct Validity, while the Factor Loading indicates the importance of the respective item in measuring its construct. The assessment for Construct Validity is made based on Fitness Indexes is shown in Table 5.

TABLE 5: THE FITNESS INDEXES INDICATE THE FITNESS OF THE CONSTRUCT TO THE DATA FROM THE FIELD

Name of Category	Name of index	Index value	Comments
1. Absolute Fit	RMSEA	0.066	The required level is achieved
2. Incremental Fit	CFI	0.951	The required level is achieved
3. Parsimonoius Fit	Chisq/df	2.062	The required level is achieved

The Fitness Indexes in Table 5 is said to achieve the Construct Validity. The researcher concluded that the measurement models for all latent constructs involved in the model have been validated. The next step for the researcher is to assemble these constructs into the structural model in order to execute Structural Equation Modeling (SEM).

4. Results And Discussion

Once the CFA report is completed and all values meet the required thresholds for validity and reliability, the researcher can conclude that the measurement models for all latent constructs involved in the model have been validated. Then, the next step is to assemble these constructs into the structural model in Figure 3 and 4 in order to execute Structural Equation Modeling (SEM). The regression weights, the regression coefficient between constructs and its significant results are shown in Figures 3 and 4 as well as in Table 6.

FIGURE 3. THE STANDARDIZED REGRESSION WEIGHTS BETWEEN CONSTRUCTS IN THE MODEL
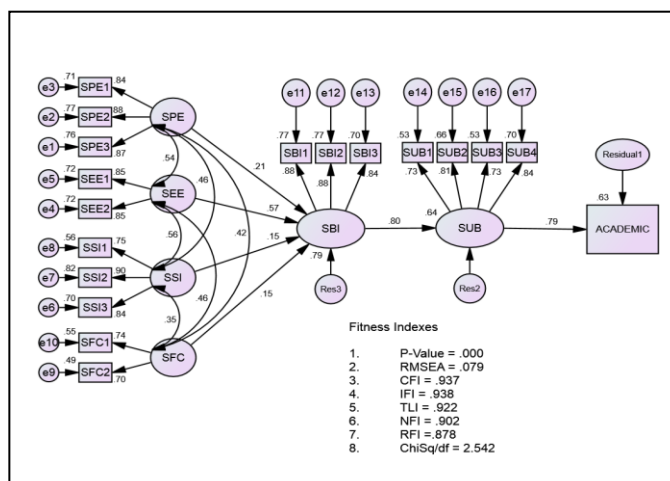
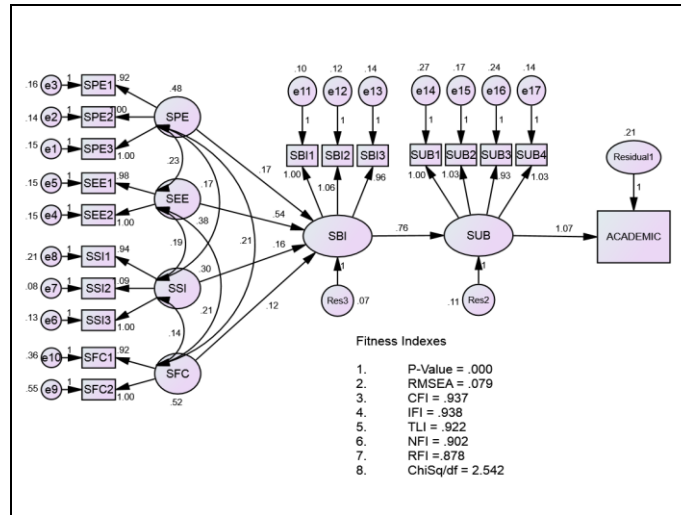FIGURE 4. THE REGRESSION COEFFICIENTS BETWEEN CONSTRUCTS IN THE MODEL

TABLE 6. THE REGRESSION WEIGHTS BETWEEN CONSTRUCTS AND ITS SIGNIFICANCE

			Estimate	S.E.	C.R.	P	Result
SBI	<---	SPE	0.174	0.046	3.769	0.001	Sig.
SBI	<---	SEE	0.54	0.066	8.226	0.001	Sig.
SBI	<---	SSI	0.165	0.058	2.825	0.005	Sig.
SBI	<---	SFC	0.124	0.049	2.545	0.011	Sig.
SUB	<---	SBI	0.759	0.068	11.075	0.001	Sig.
ACADEMIC	<---	SUB	1.068	0.088	12.185	0.001	Sig.

TABLE 7. HYPOTHESES STATEMENT AND RESULTS

	Hypothesis Statement	Result
H1	Students' Performance Expectancy (SPE) is positively related to students' Behavioral Intention (SBI).	Supported
H2	Students' Effort Expectancy (SEE) is positively related to students' Behavioral Intention (SBI).	Supported
H3	Students' Social Influence (SSI) is positively related to students' Behavioral Intention (SBI).	Supported
H4	Students' Facilitating conditions (SFC) are positively related to students' Behavioral Intention (SBI).	Supported
H5	Students Behavioral Intention (SBI) is positively related to Students' Use Behavior (SUB)	Supported
H6	Students' Use Behavior (SUB) is positively related to Students' Academic Performance (ACADEMIC)	Supported

As shown in the Table 7, for the first hypothesis (H1), the path coefficient of 0.174 means that the SPE is positively related to SBI and more importantly the effect of SPE to SBI is significant (p < 0.001). Thus, the hypothesis of SPE is positively related to SBI is supported. Based on the analysis, this result indicated that the students believed that using OSN will provide them enjoyment and fun, helps to make them famous and enable them to find friends easily, expect to help them to manage their time more effectively and act as an effective mechanism for communicating about course topic with their classmates. The students also

think that they will miss out on useful course information if they do not engage in OSN communication with their classmates and/or their teachers. Few literatures supported this outcome. When studied motives for Facebook use among students, the researchers found that the students use OSN because they think it is cool and fun [7][54][55], to make them more popular (e.g., popularity contest to have more Facebook friends) [56], to meet new people (e.g., find information about other people, develop a romantic relationship, find companionship, meet new friends) [55][57][58][59]. The students also use it for learning purposes (e.g. find help with schoolwork)[7][60]. For example, in a study involving 50 undergraduate students and five lecturers at a university in South Africa, Bosch [60] found that students used Facebook to find answers to questions about course venues and assignment details through their Facebook friends and to share information or ideas about projects, lecture or study notes.

For second hypothesis (H2), Students' Effort Expectancy (SEE) is positively related to students' Behavioral Intention (SBI), the path coefficient of 0.54 means that SEE is positively related to SBI and more importantly, the effect of SPE to SBI is significant (p<0.001). Thus, the hypothesis of SEE is positively related to SBI is supported. This study shows that the impact of effort expectancy on the intention to use OSN is predicted to be of significance and viewed positively. This indicates that the students agreed that OSN is easy to use, the interaction with the OSN is clear and understandable, easy to learn, they feel the competence to use all the OSN functions and they rarely encounter problems whenever using OSN. Previous studies did show that people with more experience and autonomy were likely to use OSN more often. This result shown when Hargittai[61] surveyed a diverse group of young adults in college students in the United States. Zhou, Lu and Wang [62] also found that when a user has the feeling that the mobile internet is easy to use and requires little or no extra effort, he or she would feel confident about achieving the desired performance.

For third hypothesis (H3), the Students' Social Influence (SSI) is positively related to students' Behavioral Intention (SBI), the path coefficient of 0.165 means that the SSI is positively related to SBI and more importantly, the effect of SSI to SBI is significant (p<0.005). Thus, the hypothesis of SSI is positively related to SBI is supported. When friends recommend and encourage them to use the services, they are more likely to agree [31]. Collectivistic consumers, on the other hand, have the tendency to ask around before they use any technology [63]. As social influence defined as "the degree to which an individual perceive that important others believe he or she should use the new system", this is corresponding to this definition by showing that the students in this research do perceives that important of others believe he or she should use a technology do play a role in the frequent usage of OSN. In the mobile commerce setting, social influence plays a critical role in

explaining the intention to use mobile technology [64]. Thus, social influence on the High Scool students in this study does significantly affects their decision to accept the use of mobile internet services. This is especially true when the influence is by those who are important to the users who comply without question. The students do agree that the close and important people to them like family, teachers, and friends know that they use OSN and encourage them to use OSN. They also agree that using OSN will make them look trendier and will put up their status. Majority of the students agree on the statement that the school has been supportive in the use of OSN and they are more accessible to their friends and teachers because they use OSN.

The fourth hypothesis (H4), Students' Facilitating conditions (SFC) is found to be positively related to students' Behavioral Intention (SBI). The path coefficient of 0.124 means that the SFC is positively related to SBI and the effect of SFC to SBI is significant (p<0.001). Thus, the hypothesis of SFC is positively related to SBI is supported. In this study, facilitating conditions are the available resources that enable the students use the OSN. The students agree that they have the necessary resources to use OSN and the parents can afford the internet cost to facilitate the OSN use. It is self-reported by the students that that smartphone is the most use device for OSN activities among student and 83 percent of the students indicated that they own smartphones. As for the other devices like desktop and laptop that students indicated as their main device use at home. The significant improvement in cellular services, specifically mobile internet services have greatly enhanced the use of OSN among Malaysians[65].

The fifth hypothesis is Students Behavioral Intention (SBI) is positively related to Students' Use Behavior (SUB). The hypotheses is supported because the path coefficient is 0.759 means that the SBI is positively related to SUB and the effect of SBI to SUB is significant (p<0.001). The independent variable in this study is intention which can be defined as "a person's subjective probability to perform a specified behavior"[58]. The greater the intention to use OSN among the students, the most likely the actual use of OSN occurs. Information related to students' actual use behavior like average time spent on OSN in the past weeks and reasons to use OSN were obtained from the questionaires in this section. Students did indicate that one of the reasons or intention of use of OSN especially among friends and teachers were because they would like to get help from them with regards to the school matters. Students also in majority agree that they use OSN frequently to find and watch academic-related information from OSN's links, news, articles and pictures as well as sharing them with their friends, classmates and, teachers.

For the last hypotheses, which is the highlight of this study, Students' Use Behavior (SUB) is positively related to students' Academic Performance. This hypothesis is supported because the path coefficient is 1.068 means that the SUB is positively related to

ACADEMIC and the effect of SUB to ACADEMIC is significant (p<0.001). This result means that the students' academic performance is improving positively when there is an increase of use in OSN among them and has a positive significant effect on the student's academic performance.

Other previous studies done in the past which have identified positive relationships between OSN use and grades are by Asante and Martey & Leung [66][67]. Junco and Cotten have reported multitasking with OSN had an impact on students' capacity for cognitive processing and deeper learning and overall GPAs [68]. OSN use is positively associated with academic achievement as long as OSN use is school-related. This is in contrast to fears of many parents and teachers that the influence of SNS is inevitable detrimental for academic achievement. SNS use unrelated to school, however, was associated with poorer academic achievement [69]. This result also have been supported by few previous studies by Shapley et. al [70]; Suhr et.al [71] and Tienken & Wilson[72] whereby they found there is a positive relationship between using technology with elementary and/or high school students and academic outcomes like standardized test scores and course grades.

A much-publicized report by Karpinski [73] seems to suggest a relationship between the use of Facebook and low grades, however, a more systematic research by Pasek, More and Hargittai [74] found the opposite to be true; that higher-grade students use Facebook more compared to the lower-grade students. DiGregorio and Sobel-Lojeski [75] also found a positive relationship between interactive whiteboards (IWB), use and academic outcomes such as learning measures, student attitudes, and motivation. Another study to investigate the role of technology in early childhood development using data from the Early Childhood Longitudinal Study indicated that access contributed to the learning potential of the students, but the authors cautioned that parents should encourage the educational use of technology to improve academic achievement. The research on factors affecting academic performance also has been widely researched over the years. These studies have focused on the effect of factors such as academic competence, time management skills, study strategies, student characteristics, and a few more on academic performance. [76][77][78]. Trueman and Hartley [79] found that women and older students have better time management skills. Similarly, Mizerski and Pettigrew [80] show that women and older students perform better academically. Sansgiry et al. [78] identifies academic competence, time management and study strategies as significant drivers of academic performance. Kleijn, Ploeg, and Topman [81] in their study indicated that higher levels of academic competency lead to better academic performance. Lay and Schouwenburg found that good time management skills are key to academic performance [82].

Meanwhile, Lei and Zhao study on the specifics access to the internet and acknowledging that the frequency of access is not as important as to the quality of use when it comes to technology use and student academic performance [83]. Technology that was found to have a positive impact on academic achievement or technology with educational value. However, if the quality of the technology content use or seen is not closely monitored or ensured, computer use may do more harm than good to student achievement in school. Al-Rahmi, Waleed Mugahed & Mohd. Shahizan did a study on the impact of Social Media use on Academic Performance among University Students in Malaysia found that social media could help make the students feel confident by collaborative between peers, teachers and, engagement within the class. This collaborative could boost collaborative learning provides coalition and sharing of knowledge in the class and library by using social media at any time. It also allowed the teachers to communicate with shy students and provide a good venue for communication to gain more understanding between teachers and students to improve their academic achievement in education [84]. In a nutshell, the result suggests that the usage of OSN is a pathway to develop vital knowledge and social skills among students beyond the school setting that eventually help them to improve their academic performance.

5. Conclusion

The primary motivation of this paper is to determine the nature of the relationship between OSN and high school students' academic performance in Malaysia. The empirical results generated have contributed to the understanding of OSN use behavior among high school students and primarily its relationship with their academic performance. OSN is used in a positive manner that can help students in gaining knowledge that can be used to enhance their academic performance. It is found that the students use OSN to communicate with their teachers and friends and to get help and assistance on academic matters. The students also rely on OSN to search on the academic-related information obtained from links, news, articles and pictures which help them in their study. They as well share this information with their fellow friends, and teachers which makes OSN as an important tool in the learning activities. This study offers important implications for both theory and practice. From the theory perspective, the research contributes to demonstrating the usefulness and applicability of the UTAUT Theory in understanding the phenomenon of OSN use by high school students and its implication toward their academic performance. From the practice perspective, the findings from in this paper can be used by practitioners especially teachers at all levels (Primary and high school levels) in inspiring them into harnessing the internet technologies in their quest to enhance their students' learning experience. Our

ultimate goal is to motivate appropriate behavioral changes in students in regards to OSN use in hopes of improving academic performance. In addition, we want to provide information for schools that wish to incorporate OSN in their curricula, given its widespread popularity among students. It is concluded that OSN has a positive significant impact on students' academic performance in Malaysia schools.

However, there is hardly "one size fits all" research, likewise, this study bears limitation that is required to be pondered upon. The last part here is to discuss the study limitation to illuminate the impediments that was faced by the present study. First of all, the major limitation of the present study related to the sample which is not representing the whole Malaysian high school population. Ideally, the study should be taking a bigger sample size and involves all high schools in every state in Malaysia. However, on the account of a limited research budget, only 6 high schools were selected from 2 states in Malaysia. Ideally, if a greater number of respondents take part in this study, the result likely is more reliable and capable to represent the broader population with higher accuracy. Hence given this, future research should include larger samples and perhaps comparative studies from diverse settings using a quantitative empirical approach. Secondly, the information on the OSN data for this study was obtained just from the students alone. Ideally, such information should as well be obtained from parents and teachers to ensure the information given by the students is truthful. In an attempt to safeguard their privacy, some students may not give real information about their real behavior towards OSN use. The insights obtained from just the students are considered as skewed to the perspective of the students alone. Hence, future research could be conducted to compare the insights obtained from the perspective of students and parents, as well as to explore other stakeholders' perspectives like teachers with regards to the use of OSN among school students. Finally, the limitation is due to the narrow context of the study in which only Malaysian students are involved. Further studies exploring the same phenomenon involving students from other countries (i.e perhaps a comparison between 2 or more different countries) would be useful to enhance the findings of our study. Such richer data would provide us with a more comprehensive understanding of the phenomenon and therefore, provide the practitioners and researchers with better insights into how social technologies can be best leveraged for higher education. These limitations of this study provide directions for future research.

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