

Social Media and its Impact on Academic Performance among University Students

Waleed Mugahed Al-rahmi¹, Akram M. Zeki², Norma Alias^{1*} and Ali Ali Saged³

¹*Ibnu Sina Institute for Scientific and Industrial Research, Universiti Teknologi Malaysia, 81310 Skudai, Johor, Malaysia*

²*Faculty of Information and Communication Technology, International Islamic University Malaysia, 10, 50728 Kuala Lumpur, Malaysia*

³*Department of Aqidah and Islamic Thought, Academy of Islamic Studies, University of Malaya, 50603 Kuala Lumpur, Malaysia*

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ABSTRACT Social media has been suggested as an effective tool for educational purpose. Therefore, this study is conducted on two theories, constructivism theory and Technology Acceptance Model (TAM). Moreover, this study conducted an analysis of studies dedicated to social media use for collaborative learning and engagement based on previous research problems of models and theories. In addition, this study applied quantitative approach, and the questionnaire was conducted using 340 students. The results show that social media use is useful, enjoyable and easy to use. Moreover, the students had a feeling of satisfaction using it. They believe that social media can be used positively and that it can provide significant interaction, engagement and collaborative learning with respect to the Quran and Hadith, thus improving learners' performance. The results of this study also revealed the percentage and frequency of the tools of social media used for collaborative learning, sharing, discussion and publishing.

INTRODUCTION

In today's world, technology is more accessible to students who have become heavy users of social media and started to have a positive attitude towards it (Pimmer et al. 2016; Farwell and Wates 2010). In spite of the fact that they mainly use the tools of social media to stay connected with their friends across the globe, this attitude is said to enable them to utilize this technology for their own benefits in classes and while conducting research (Gonzalez et al. 2016; Li 2012). The topic of social media has been of interest to scholars and researchers everywhere. The different angles of social media as a topic were highlighted, such as definitions, influences and the different uses. In addition to these areas of interest, many studies recently highlighted cooperative learning by examining the teaching of social media at the level of tertiary education, which leads to this kind of learning (Pozzi et al. 2016; Helvie 2011).

Looking at previous literature, it was discovered that many studies highlighted the strate-

gies adopted by teachers and professors while teaching the use of the different tools of social media. For example, Jones (2011) demonstrated six approaches that may motivate the students' interaction, reflection and engagement while using Twitter by instructors to assist teaching in classrooms. In addition to revealing the different strategies, some researchers (Ricourte and Alvarez 2016; Hwang and Brummans 2011) investigated the various experiences of students with the use of social media in classes. The results strongly supported the use of social media in classes; the students' satisfaction made this evident. Wankel (2011) claimed that the use of social media encourages students to go beyond the normal use of this technology in classes and explore the use of social media and how it can be utilized for collaborative learning, which produced the course material in the first place.

Carpenter et al. (2016) and Karle (2012) stated that social media was invented primarily to help young people in their activities, especially the multitasking ones. In the same way, this technology is used in universities and tertiary education institutions to assist students to be in touch with their surrounding smoothly (Yu et al. 2010). Mohamud et al. (2015) showed the exist-

* Address for correspondence:
E-mail: norma@ibnusina.utm.my

ence of significant differences between the students' attitude towards information privacy.

Tur et al. (2017) and Cao et al. (2013) conducted research to find out and explore the outcomes as well as the influence of using social media in classrooms and learning settings. The researchers found that there is a perception that the risk of using social media to waste time is higher than its motivation to learn. As observed in previous literature, social media and its influence on learners' performance has been the main focus of certain countries like USA, UK and Australia. Malaysia is among the countries that need to highlight such topics. Many researchers, like Al-Rahmi and Zeki (2016), Al-Rahmi et al. (2014) and Zakaria et al. (2010), highlighted the lack of such studies and the need to have a better understanding of how to utilize social media for academic purposes, leading to cooperative learning in educational institutions, especially in higher education. In the light of the above mentioned point, this paper attempts to bridge this gap by exploring the use of social media in collaborative learning. This research also examines the different factors that influence performance during the use of this technology among university students learning the Quran and Hadith.

Objectives

This paper aims at providing empirical evidence of the educational benefits of the use of social media by students. It also explores the relationship between the different variables of social media use for collaborative learning and engagement to learn the Quran and Hadith as well as students' satisfaction.

Social Media and Learning

The topic of social media in general is highlighted in the field of social science due to its many benefits and positive influences on learners' performance as well as social issues and problems. There have been many calls and suggestions for research on social media in the field of education and higher education and to explore the different ways for its implementation (Hamid et al. 2011). The studies by El Hoby and Zeki (2015) and Brady (2010) are some of the many studies that indicate the increase in the use of social media among students. These stud-

ies compared the use of social media by students in the years 2007 and 2010 and also compared its use between older and younger students. They concluded that there is a significant difference in social media usage based on the above comparison, which supports the claim that the use of social media is increasing among students.

The advantage of social media is that it facilitates the communication among students, and this encourages them to use the technology for networking (Roblyer et al. 2010). Madge et al. (2009) supported the claim that social media is a good assisting tool for education, and it eases students' interaction. Another benefit is that social media can somehow bridge the gap among learners, lecturers and the faculty (Bull et al. 2008). In today's world, students, especially at the tertiary level, use the different social media applications for various purposes. According to Cao and Hong (2011) and Dahlstrom (2012), students use social media's various applications daily to the extent that it becomes part of their everyday life, and they use these applications mainly for entertainment and learning purposes. This became easy through the rapid development of technology and the smartphone industry (Dahlstrom 2012).

In addition to what is mentioned above, the use of social media in education and in classes has much more benefits than the normal classroom setting. For example, students can reflect more on certain issues (Gray et al. 2010). Regarding communication, the different channels of social media, like networking sites and blogs, can achieve a high level of communication and engagement between students and lecturers. An example of this is when students update their profiles online; this can provide academics vital information about students (Griffith and Liyanage 2008). Moreover, social networking is a useful tool among students, which enables them to organize meetings or discuss certain issues (Andreas et al. 2010).

Network to Support Collaborative Learning (SSCL) illustrates the positive role played by motivation and collaborative group learning among students, instructors and owners. For the knowledge construction to match the real life encounters, there has to be a transfer of knowledge and experience. Yampinij et al. (2012) took the initiative and established a networking site for tertiary students to test its influence on

students and instructors in terms of collaborative learning and social interaction. They concluded that having social media tools assisting the traditional way of teaching and learning has a positive impact on students. It creates more opportunities for participation, which lead to a better learning process. In other similar studies, a social bookmarking tool was used (Farwell and Waters 2010).

Research Theories and Model

This research proposes a framework for the impact of social media use on collaborative learning in learning the Quran and Hadith among students in Malaysian higher education, based on the constructivism theory (Vygotsky 1978) and TAM theories (Davis et al. 1989). The research model and hypotheses are shown in Figure 1.

Social Constructivism Theory

This theory was used by Vygotsky's in the field of education. It has many benefits and insights. Vygotsky's work opened the door for instructors and educationalists to reconsider the learning process which they first implied as an individual activity (Vygotsky 1978). His claim was that other people and participants facilitate

the connection between thoughts and objects (Veer and Valsiner 1993). It was argued that there are two sides of human history of domination and control. Although human dominance over nature appears through the invention of tools and the utilization of technology, humans are controlled to some extent by signs, such as cultural techniques (Veer and Valsiner 1993). Applying this theory in the field of collaborative learning accentuates the different students' experiences of interacting with others. It was suggested that human activities are merely social experiences in explaining the significance of others in the learning environment: (see Fig. 1 for the research model).

Social Media Facilitates Academic Interactions

Social media networking has a significant effect on higher education. Ewan McIntosh mentioned that this new technology has positively changed many things in the educational environment, such as the way students learn and how educators teach and communicate with their students (Mcewan 2011). It has been observed that higher education institutions are resorting to social media networking to satisfy their students who need such technology to be present in their lives. In addition to this need by

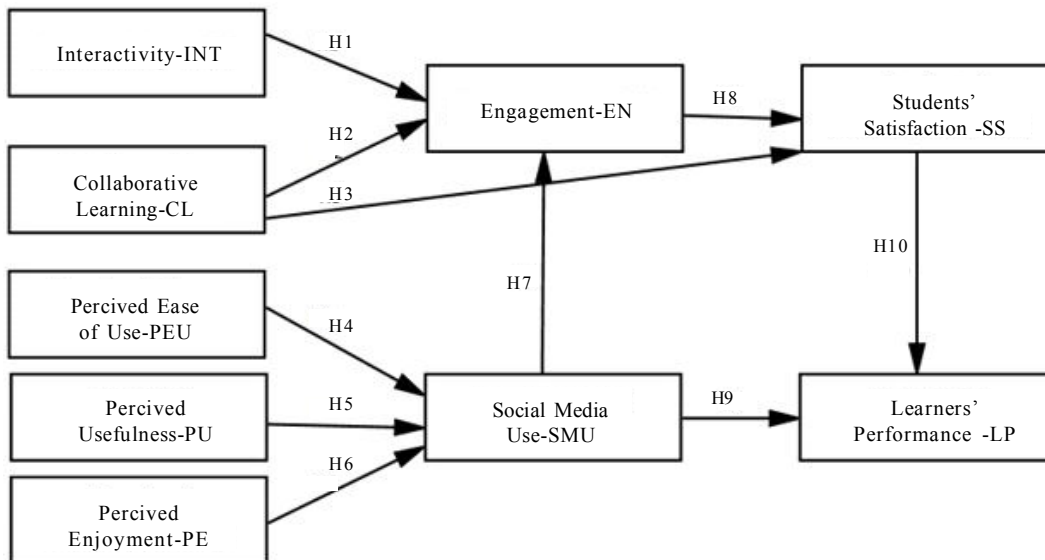


Fig. 1. The research model with hypotheses
Source: Author

students, as stated by Goldfarb et al. (2011), interaction is a goal that motivates higher education institutions to use social media. A clear cut evidence that supports this are the findings at University of Minnesota, 2008, which proved that students using social media for educational purposes are equipped with excellent skills like creativity, intelligence and agility. These features were found side by side with interactivity and engagement among students. Being represented by distinguished features like the improvement of discussion among groups and sharing new ideas through the interactivity it produced, social networking is seen as a vital component to be attached to educational environments, especially those with teams across different geographical areas (Horizon 2007). Considering the above discussion, the researchers propose the following hypotheses:

Hypothesis 1: There is a significant relationship between interactivity and engagement.

Social Media Facilitates Collaborative Learning

In the light of previous literature, it is suggested that using Facebook, which is a social media application, within the process of collaborative learning enables students to perform various activities in a smooth way and face fewer stress in their academic work. It also enables them to strengthen relationships with their peers in an atmosphere of enjoyment. Some researchers found that students use Facebook for academic purposes in a formal way like meeting, discussions (Madge et al. 2009) and enquiry, and also they use it informally for other non-academic purposes (Lampe et al. 2011).

Using Facebook also produced a kind of collaboration that is considered useful in terms of social regulation and interaction (Gray et al. 2013). Nowadays, the common perception of looking at higher education is represented by the long-term learning skills rather than knowledge, which was the common focus in the past (Fallows and Steven 2000). One of these skills that are considered vital for employers is called collaboration (Johnson et al. 2012). This term has been the focus of many scholars and researchers. Dillenbourg (1999) defined collaboration as the process or activity where two or more people attempt to learn new knowledge.

Considering the above discussion, the researchers propose the following hypotheses:

Hypothesis 2: There is a significant relationship between collaborative learning and engagement.

Hypothesis 3: There is a significant relationship between collaborative learning and students' satisfaction.

Social Media Facilitates Academic Engagements

Looking at the transition from college to university, social media is seen to have a great impact on students' and researchers' experiences and learners' performance. This impact could have positive or negative features (Dahlstrom et al. 2011). An example of the negative effect of social media networking is that the use of Facebook was found to hinder students' academic engagement. The study also investigated the time spent on Facebook and concluded that it has a positive influence on co-curricular activities, but had the opposite effect on time spent by students learning engagement (Junco 2011). Junco and Cotten (2012) further supported this negative influence by revealing that the use of social media networking while doing homework has a bad influence on learners' performance in higher educational institutions (Al-Rahmi et al. 2014; Ajjan and Hartshorne 2008; Chen and Bryer 2012; Roblyer et al. 2010).

This negative influence applies to students' engagement (Junco et al. 2012; Al-Rahmi and Othman 2013) and academic achievement (Dahlstrom et al. 2011). In the case of interactive blogs, Yang and Chang (2011) asserted that this type of social media application motivates interaction among students and academic achievement. The same situation applies to Twitter, as it is good for undergraduate students' engagement, which is reflected on their grade point averages (GPA) (Junco et al. 2011). Considering the above discussion, the researchers propose the following hypotheses:

Hypothesis 8: There is a significant relationship between engagement and students' satisfaction.

Technology Acceptance Model (TAM)

Technology Acceptance Model (TAM) is a theoretical model used in this paper, and it proved

to be a distinguished model in this kind of study. Originally, Davis the founder of this model used it as an indicator of the level of usefulness of any computer technology (Davis et al. 1989). It highlights usefulness and ease to use as important factors determining the future of a particular technology in terms of use. Teenagers' acceptance of social media is an indicator of a bright future concerning the use of e-learning environment, away from its bad consequences (Kuppuswamy and Shankar Narayan 2010). An evidence to support this claim is reported by Ellison and Boyd (2007) who revealed that ninety percent of college students include social media in their collaborative learning.

Perceived Ease of Use and Perceived Usefulness

Many studies (example, Davis et al. 1989; Liawand Huang 2003; Polancic et al. 2010; Sumak et al. 2011) highlighted and focused on the relation between perceived ease of use and perceived usefulness of using social media. There is also a relation between perceived usefulness and intention to use in the case of TAM. The fact that people keep thinking about using social media and to what extent it can be useful to their work explains the relation between the perceived usefulness and intention to use. Experience here plays a major role in the satisfaction of people; some might be satisfied, while other might not be satisfied. This intention to use social media is determined by the positive attitude towards its use (Chang and Wang 2008). The usefulness of using social media has a greater impact than the ease of using it on the intention and attitude. It is also suggested that the ease to use is mediated by the usefulness (King and He 2006). Considering the above discussion, the researchers propose the following hypotheses:

Hypothesis 4: There is a significant relationship between perceived ease of use and social media use.

Hypothesis 5: There is a significant relationship between perceived usefulness and social media use.

Perceived Enjoyment

Perceived enjoyment constitutes one of the main forces behind the decision to use social media, which leads to the improvement of learn-

ers' performance. An evidence to support this is the fact that using online learning is not compulsory but learners in general use this kind of technology because they are highly motivated. Mathwick (2002) reveals that the use of social media is fun and that is why its users feel satisfied. In previous related studies, this concept of perceived enjoyment (PE) received much attention by scholars and researchers who provided definitions and measurements for this factor. According to Davis et al. (1992), PE refers to the judgment given on a certain system of being enjoyable, separate from other factors including performance consequences upon its use. Intention to use social media applications, such as blogs, is always indicated by enjoyment as a determining factor (Wang et al. 2010; Lin and Bhattacharjee 2010). An example of this, as reported by Abdullah and Gibb (2006), is that enjoyment, which refers to reading for pleasure more than for academic purposes, is one of the main reasons why learners prefer to use e-books. This is supported by previous related literature stating that the success of any new technology is determined by entertainment as an important factor. Kim et al. (2009) and Kim and Han (2009) asserts the above mentioned point by highlighting the positive relation between the acceptance of a new technology and the level of entertainment it provides. Considering the above discussion, the researchers propose the following hypotheses:

Hypothesis 6: There is a significant relationship between perceived enjoyment and social media use.

Social Media Use

Concerning the use of social media in educational institutions, it is clear that it is not applied perfectly. Roblyer et al. (2010) explains this by stating that students are more eager to use Facebook and other channels of social media than the faculties, which are more prone to stick to traditional approaches in teaching and learning. Tess (2013) reveals that the problem is not with the institutions which provide equipped facilities to apply such social media applications. The problem results mainly from the instructors who appear to be more inclined towards the use of traditional approaches in teaching and learning. In investigating the impact of Facebook on college students, Junco (2012) concluded his

paper by stating that the time spent on Facebook has a negative relationship with the students' GPA and a weak relation with class preparation time.

Also, self-regulated learning was discussed by Dabbagh and Kitsantas (2011), who argued that it can be enhanced using social media. As a result, social media is said to be important in terms of accentuating the voice and control of learners' in the various learning activities. Flickr, wikis, podcasts, blogs, and digital voice recorders are certain social media tools that can improve the learning environment. Considering the above discussion, the researchers propose the following hypotheses:

Hypothesis 7: There is a significant relationship between social media use and engagement.

Hypothesis 9: There is a significant relationship between social media use and learners' performance.

Students' Satisfaction

Social media was reported to have a positive relation with more than one factor related to the learning environment. Schroeder et al. (2010) and Dunn (2012) highlighted that social media has a positive influence on learners' experiences, which is clearly seen in the increase in motivation, engagement, and interaction of students within the learning environment. This extends to the different skills needed in real life and employment. It is suggested by Khalifa and Lam (2002) that interactivity leading to learners' satisfaction is needed for collaborative learning.

Interaction necessitates cognitive, behavioral and social components within e-learning. Chang and Tsai (2005) highlighted the factor of cultural differences in the field of online collaboration among students. They suggest that learners from different cultures might have different perceptions of educational interventions. This is why many researchers (Kim and Bonk 2002) recommended that cultural differences be taken into consideration. Moreover, the relation between the learning environment and students' satisfaction has been the focus of recent research (Santhanam et al. 2008; So and Brush 2008; Wu et al. 2010). Considering the above discussion, the researchers propose the following hypotheses:

Hypothesis 10: There is a significant relationship between students' satisfaction and learners' performance.

Social Media and Learners' Performance

In the field of investigating the impact of social media on the academic performance of learners, some studies, like that of Baran (2010), report that students feel that it is fruitful to use Facebook in their learning environment so that they and their instructors can socialize. They also feel that formal knowledge sharing would be more effective using Facebook. Churchill (2009) mentioned that other applications like blogs used for educational purposes are very useful in facilitating a smooth learning environment. Moreover, social media networking is seen to facilitate the relation between the learners' performance and their satisfaction (Cao and Hong 2011). Effectiveness of the social networks was reported to be an important factor in improving collaborative learning. This learning approach was recommended in previous literature, as in Selwyn and Grant (2009) and Arnold and Paulus (2010). Gonzalez et al. (2016) reported that the overall outcome of the use of Facebook in academic environments is positive.

Al-Rahmi et al. (2014) and Karpinski et al. (2013) also supported the positive impact of social media networking stating that it is healthy for the learning environment and in creating a better academic atmosphere, as it encourages the academic performance of the learners. Al-Rahmi et al. (2015) and Frias and Montano (2010) were more specific in explaining the role of networking effectiveness in the learning environment. According to Petrovic and Pavlovic (2016), there exist gender differences among male and female students on internet use; the male students mostly prefer educational and entertainment content on the internet, while data shows that online video gaming and e-commerce services are dominated by female students.

They concluded that networking touches basic skills like knowledge creation, whether in user-defined or negotiated context, the choice of information, the interpretation of social contexts, and the enhancement of communication skills. It also has a positive impact on group and collaborative work, information sharing and knowledge exchanges. All of these can be done and achieved by creating a classroom communi-

ty, facilitating students' engagement, working on students' achievement, and encourage information sharing among students in various fields of knowledge, such as Islamic sciences and the Quran and Hadith, in line with the focus of this paper.

METHODOLOGY

As the first step in data collection, a questionnaire was distributed among students for the purpose of measuring the effect of each factor and examining the research hypotheses. Three hundred and forty students received this questionnaire. It was made up of 56 items covering various sub-topics like interactivity, engagement, collaborative learning, social media use, perceived usefulness, perceived ease of use, perceived enjoyment, students' satisfaction and learners' performance. Before distribution, it was pre-tested by four post-doctoral students in University of Technology, Malaysia. Their contributions were useful to the research, and they had few comments on some of the demographic questions and the measurement of some variables. This questionnaire was designed to investigate the interrelationships between multiple independent and dependent variables regarding the use of social media in collaborative learning and the impact of learners' performance on learning the Quran and Hadith.

This research uses Structural Equation Modeling (SEM) as the main tool of analysis, especially as it is used in cases where the dependent variables become independent in a subsequent dependent relationship. The constructs were included in the framework and measured by 56 items as illustrated in Table 4. Six items were adapted from Liu (2003) and McMillan and Hwang (2002) to measure the interactivity between peers and the teachers, while eight items were adapted from Gallini and Moely (2003) as well as Medlin and Green (2009). In addition, the perceived ease of use and perceived usefulness were measured using eight items from Ajjan and Hartshorne (2008). Moreover, seven items were adapted from So and Brush (2008) and were used to measure collaborative learning, while the satisfaction of students was measured using seven items from Chang Zhu (2012). Finally, eight items adapted from Kim et al. (2008) were used to measure the intention of students to use social media, while another seven items from Mac-

George et al. (2008) and Banks (2006) were used to measure learners' performance.

RESULTS AND DISCUSSION

Data Analysis

In terms of gender difference, the respondents of this paper were distributed as follows: there were 141 males forming 41.5 percent of the population and 199 females forming 58.5 percent of the population. Based on their level of education, 18 respondents forming 5.3 percent of the population were PhD students, 88 respondents forming 25.9 percent of the population were Master's students, 228 respondents forming 67.1 percent of the population were Bachelor students and 6 respondents forming 1.8 percent of the population were Diploma students. In terms of the period of time of using social media tools for learning the Quran and Hadith, the majority of respondents have been using social media for 5 semesters: 32 respondents forming 9.4 percent of the population have been using social media for one semester, 60 respondents forming 17.6 percent of the population have been using social media for two semesters, 36 respondents forming 10.6 percent of the population have been using social media for three semesters, 16 respondents forming 4.7 percent of the population have been using social media for four semesters and 196 respondents forming 57.6 percent of the population have been using social media for five or more five semesters. Pertaining to the use of social media for discussion, 200 respondents (58.8%) used WhatsApp to hold discussions with their peers, 8 respondents (2.4%) used Google talk, and 110 respondents (32.4%) used Skype, WhatsApp and Google talk for discussion with their peers within the collaborative learning of the Quran and Hadith. As for the use of social media for the purpose of collaborative learning, Table 1 demonstrates what students used for this purpose. One hundred and twenty respondents forming 35.3 percent of the population used Facebook for collaborative learning, 6 respondents forming 1.8 percent of the population used LinkedIn for collaborative learning, 16 respondents forming 2.9 percent of the population used Twitter for collaborative learning, 10 respondents forming 2.9 percent of the population used ResearchGate for collaborative learning, 2 respondents forming 0.6% of

the population used Forum for collaborative learning, and 186 respondents forming 54.7 percent of the population used Facebook, LinkedIn, Twitter, ResearchGate and Forum for collaborative learning of the Quran and Hadith. As for the use of social media tools for the purpose of sharing knowledge, 28 respondents (8.2%) used Wiki for sharing knowledge and information, 136 respondents (40%) used YouTube for sharing knowledge and information with their peers, 12 respondents (3.5%) used Flickr for sharing knowledge and information, 164 respondents (48.2%) used Wiki, YouTube and Flickr for sharing knowledge and information for collaborative learning of the Quran and Hadith. For the motivation and what makes students use social media, 160 respondents (47.1%) used social media for learning, 144 respondents (42.4%) used social media to get knowledge and information, 36 respondents (10.6%) used social media to get materials related to the Quran and Hadith. As for publishing sources and sharing them with their peers, 84 respondents (24.7%) used Wiki for publishing sources and sharing them with their peers, 98 respondents (28.8%) used blog for publishing the sources, 20 respondents (5.9%) used Mendeley to discuss information, 138 respondents (40.6%) used social media Wiki, Blog and Mendeley for publishing sources among students.

In terms of the reason why students use social media tools, the statistics show that 12 respondents (3.5%) used social media for research purposes, 16 respondents (4.7%) used it for library use/assistance, 22 respondents (6.5%) used it for educational purposes, 24 respondents (7.1%) used it for information sharing, 24 respondents (7.1%) used it to search for knowledge, 242 respondents (71.2%) used it for research, library use, education, information sharing and to search for knowledge related to the Quran and Hadith. The results of rating by students on the use of social media in general in learning the Quran and Hadith were impressive: 112 respondents (32.9%) rated their use as excellent and 206 respondents (60.6%) rated their use as intermediate. Only 22 respondents (6.5%) rated their use as low. These results are illustrated by descriptive information of the sample in Table 1.

Measurement Model Analysis

For data analysis, structural equation modeling (SEM) was used as the primary tool for

analyzing the data side by side with Amos 23 and Confirmatory factor analysis (CFA). The use of multiple fit indices was recommended by Hair et al. (2010) so that the model's goodness-of-fit could be assessed. This goodness-of-fit was revealed as χ^2 , df, χ^2/df , RMR, IFI, TLI, CFI and RMSEA. The results of the accepted measurement model values are shown in Table 2.

Reliability concerns the extent to which measurements obtain the same results (Black et al. 2002). It is one of the most important indicators of a measurement's quality. It reflects the measurements stability, accuracy over time, and the reproducibility of a measurement instrument (Kline 2011). The relation between the total amount of true score variance and the total scale score variance is reflected by composite reliability (CR) (Hair et al. 2010). The consistency of a set of variables is that measurement is normally assessed by this type of reliability. While the average variance extracted (AVR) explains the sum of variance in the indicators accounted for by the latent construct (Hair et al. 2010), the variance extracted estimate (AVE) examines the amount of variance taken by a construct in terms of the variance due to random measurement error. There is a high level of similarity between AVE and the composite reliability measure, but they only differ in terms of the standardized loadings (Hair et al. 2010).

Confirmatory Factor Analysis (CFA) is another tool to measure validity, which is an important condition of a good research. Hair et al. (2010) gave a clear definition of it stating that it refers to "the extent to which a set of measured variables actually represents the theoretical latent construct those variables are designed to measure". CFA is used to make sure that the factor loading of constructs is more than 0.3 (Hair et al. 2006). A standard loading of 0.5 or more is accepted, while 0.7 or higher is the preferred level. The current paper's benchmark is 0.7 or more (see Tables 3 and 4).

Results of Hypothesis Testing

Hypothesis testing is the last stage in the process of data analysis. Critical Ratio (CR) was utilized to test the statistical significance of the parameter estimated by SEM. This refers to the parameter estimate divided by its standard error (SE) (Byrne 2010). Hair et al. (2010) explained that a sign of a single path indicates the rela-

Table 1: Descriptive information of the sample

<i>Demographic variables category</i>	<i>Research sample (n=340)</i>		<i>Demographic variables category</i>	<i>Research sample (n=340)</i>	
	<i>Frequency</i>	<i>Percent</i>		<i>Frequency</i>	<i>Percent</i>
<i>Gender</i>			<i>Rate of Social Media Used</i>		
Male	141	41.5	Excellent	112	32.9
Female	199	58.5	Intermediate	206	60.6
Total	340	100.0	Low	22	6.5
			Total	340	100.0
<i>Education</i>			<i>Sharing</i>		
PhD	18	5.3	Wiki	28	8.2
Master	88	25.9	YouTube	136	40
Bachelor	228	67.1	Flickr	12	3.5
Diploma	6	1.8	All	164	48.2
Total	340	100.0	Total	340	100.0
<i>Discussing</i>			<i>Publishing</i>		
Skype	22	6.5	Wiki	84	24.7
Whatsapp	200	58.8	Blogs	98	28.8
Google talk	8	2.4	Mendeley	20	5.9
All	110	32.4	All	138	40.6
Total	340	100.0	Total	340	100.0
<i>Long of Social Media Used</i>			<i>Collaborative Learning</i>		
1 Semester	32	9.4	Facebook	120	35.3
2 Semesters	60	17.6	LinkedIn	6	1.8
3 Semesters	36	10.6	Twitter	16	4.7
4 Semesters	16	4.7	ReseachGet	10	2.9
More 5 semesters	196	57.6	Forum	2	0.6
Total	340	100.0	All	186	54.7
			Total	340	100.0
<i>Motivates for Social Media Use</i>					
Easy to get knowledge				144	42.4
Easy to get materials				36	10.6
I like learn Quran and Hadith by social media use				160	47.1
Total				340	100.0
<i>Purposes of Social Media Use</i>					
Research purposes				12	3.5
Library use				16	4.7
Educational purposes				22	6.5
Information sharing				24	7.1
Search for knowledge				24	7.1
All				242	71.2
Total				340	100.0

Table 2: Fitness of measurement model

<i>Model</i>	χ^2	<i>df</i>	χ^2/df	<i>RMR</i>	<i>IFI</i>	<i>TLI</i>	<i>CFI</i>	<i>RMSEA</i>
Base	1967.682	1425	1.381	.036	0.913	.904	.911	.047

tionship between two constructs, signaling a direct effect. In the current paper, the majority of the 10 proposed hypotheses were accepted and only one was rejected. The proposed model for path and hypotheses are shown in Figures 2 and 3. Moreover, the results of hypotheses testing are shown in Table 5.

Interactivity has been proved to have a significant relation with students' engagement in learning the Quran and Hadith, with $\alpha = 0.337$ and $p < 0.001$, supporting the first hypothesis H1. In contrast, H2 stating that there is a negative relation between collaborative learning and students' engagement within the process of learn-

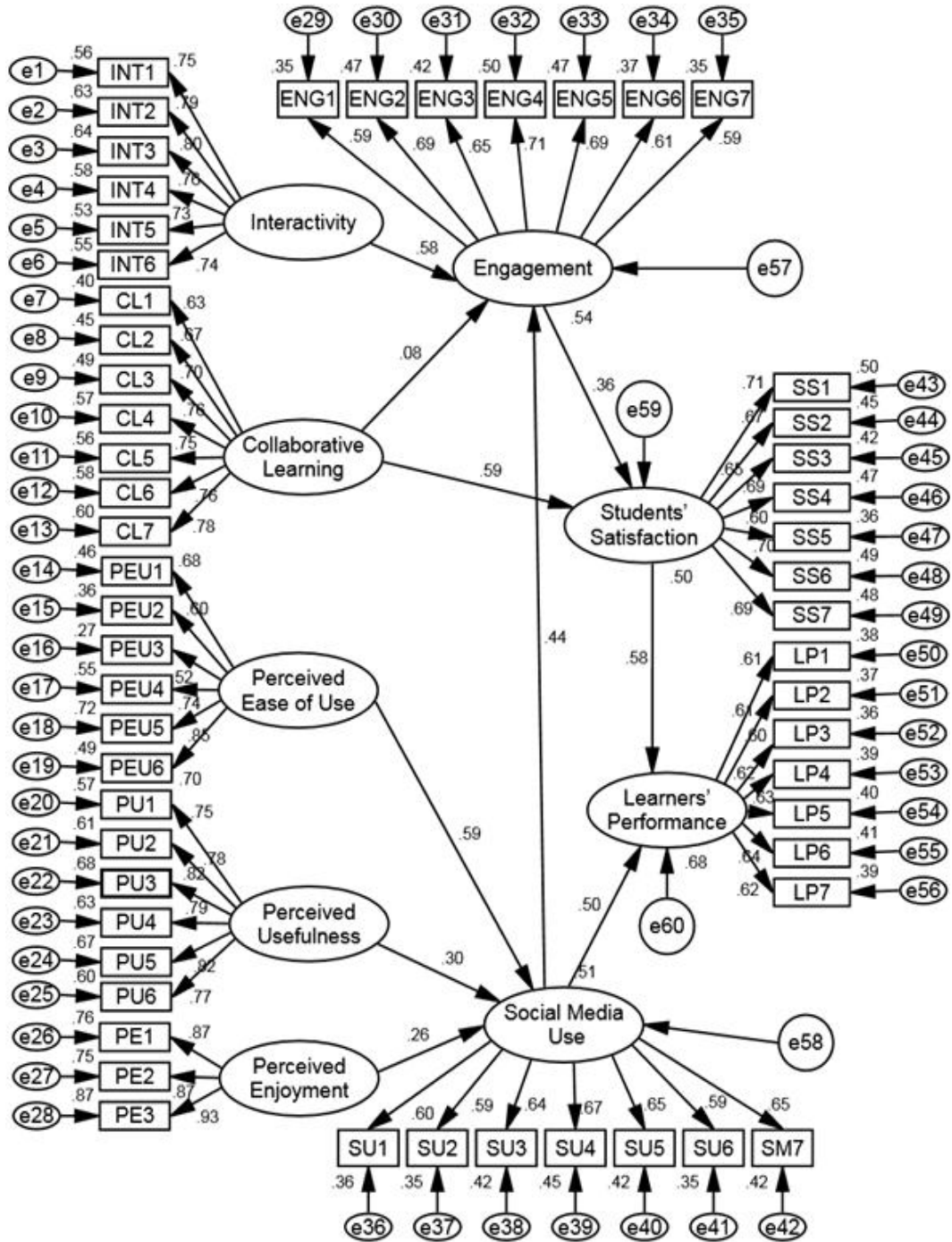


Fig. 2. Results of the proposed model (path analysis)
 Source: Author

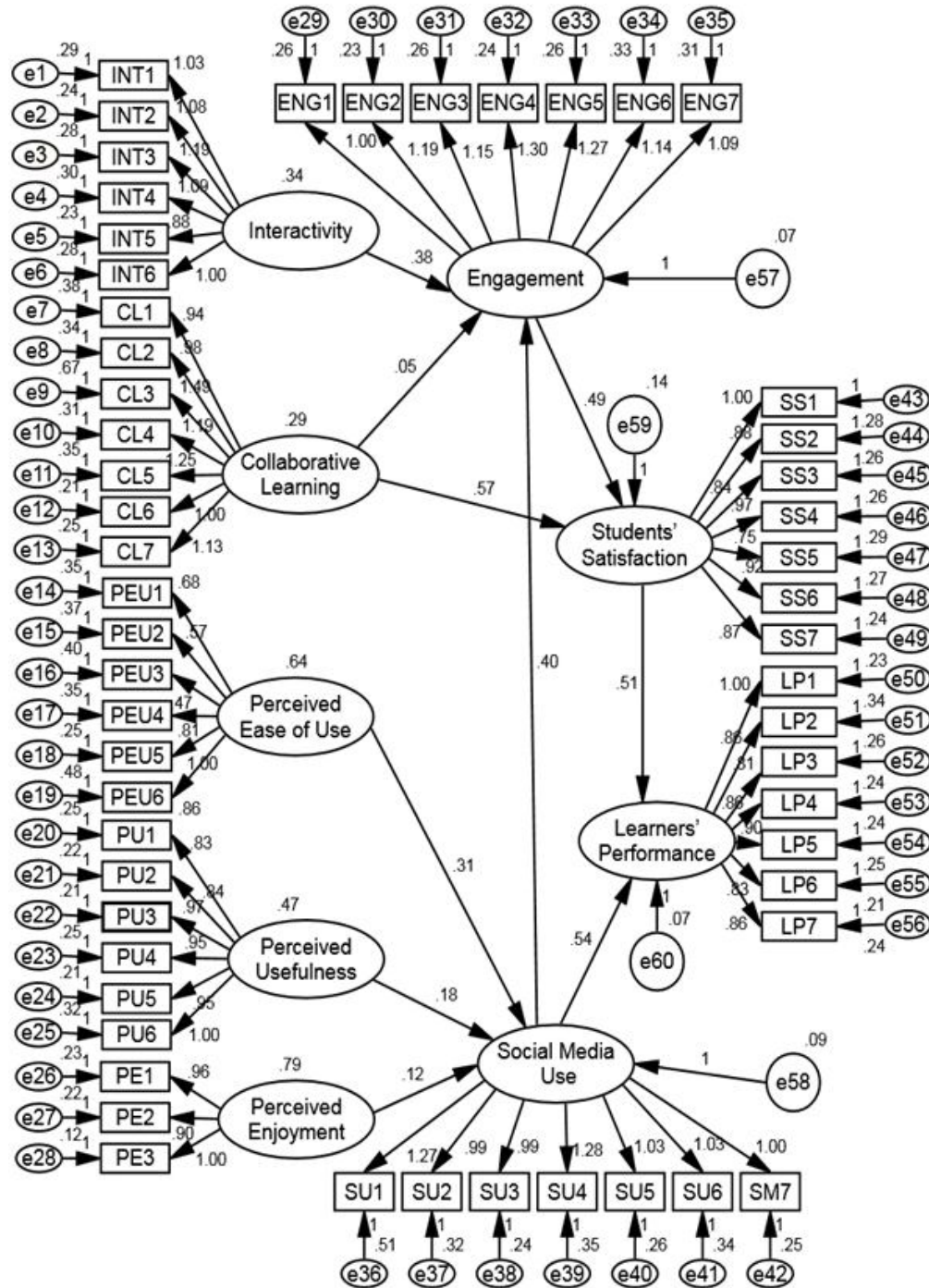


Fig. 3. Results of the proposed model (hypotheses estimate)
 Source: Author

Table 3: Discriminant validity

	<i>INT</i>	<i>EN</i>	<i>CL</i>	<i>PEU</i>	<i>PU</i>	<i>PE</i>	<i>SMU</i>	<i>SS</i>	<i>TL</i>
INT	0.759								
EN	0.632	0.745							
CL	0.543	0.459	0.723						
PEU	0.459	0.518	0.556	0.786					
PU	0.532	0.673	0.619	0.692	0.791				
PE	0.571	0.620	0.532	0.581	0.583	0.889			
SMU	0.632	0.527	0.613	0.572	0.641	0.651	0.799		
SS	0.614	0.611	0.623	0.593	0.563	0.449	0.570	0.719	
LP	0.593	0.598	0.601	0.529	0.666	0.519	0.656	0.504	0.860

Note: INT: Interactivity; EN: Engagement; CL: Collaborative Learning; PEU: Perceived Ease of Use; PU: Perceived Usefulness; PE: Perceived Enjoyment; SMU: Social Media Use; SS: Students' Satisfaction; LP: Learners' Performance

ing the Quran and Hadith by social media use was rejected by the positive relation found between these two variables ($\beta = 0.055$, $p < 0.001$). As for the third hypothesis, the positive relation between collaborative learning and students satisfaction in the use of social media for learning the Quran and Hadith ($\beta = 0.569$, $p < 0.001$) was supported.

Regarding the fourth hypothesis, it was supported; this is evident in the statistical language ($\beta = 0.313$, $p < 0.001$), indicating that there is a strong as well as positive relation between the ease of use and social media in the process of learning the Quran and Hadith. In the same way, the perceived usefulness and social media use ($\beta = 0.185$, $p < 0.001$) had a positive and significant relation. This result supports the fifth hypothesis. In terms of the relation between enjoyment and the use of social media, there was a positive relationship ($\beta = 0.124$, $p < 0.001$) in the process of learning the Quran and Hadith. This result supports the sixth hypothesis.

With regard to the relation between students' engagement and the use of social media, it was found to be positive and significant ($\beta = 0.396$, $p < 0.001$). This positive relation supports the seventh hypothesis, which suggests a positive relation. Also, the positive and significant relationship between students' satisfaction and their engagement ($\beta = 0.494$, $p < 0.001$) supports the eighth hypothesis that suggests the relation to be positive within the process of learning the Quran and Hadith. Moreover, the positive relation found between learners' performance and the use of social media provides support to the ninth hypothesis ($\beta = 0.542$, $p < 0.001$). Finally, the tenth hypothesis which suggested that there is a positive and significant relation be-

tween students' satisfaction and their performance while using social media within the process of learning the Quran and Hadith was proved to be right and is accepted ($\beta = 0.506$, $p < 0.001$).

Nine factors were highlighted in this paper and investigated for their impact on the learners' performance in learning the Quran and Hadith. The respondents were students in Malaysian higher education. In this paper, out of the 10 hypotheses, only one hypothesis was rejected, while the rest were accepted. The results are supported by previous related literature which reported the negative impact of social media on learners' performance (Kirschner and Karpinski 2010; Junco 2012). In contrast, along with interactivity, collaborative learning and exchange of information, the performance of students was reported to be positively influenced by the use of social media (Tur et al. 2017; Al-Rahmi and Zeki 2016; Ricaurte and Alvarez 2016; Pimmer et al. 2016; Gonzalez et al. 2016; Ainin et al. 2015; Al-Rahmi et al. 2014; Al-Rahmi et al. 2015; Alloway and Alloway 2012). Furthermore, the performance of the students was enhanced as they were familiarized with social media and its different uses and benefits. Students' use of social media comes in different forms, like educational and research purposes, surfing the electronic library as well as sharing and digging for information. It has been reported that the most common tools of social media used by students are Facebook, LinkedIn, Twitter, ResearchGate and Forum. Among these tools used for collaborative learning, Facebook is the tool most used by students to enhance their academic performance. Moreover, the WhatsApp application is reported also to be used heavily by students in dis-

Table 4: Item loadings on related factors

<i>Factor</i>	<i>Items</i>	<i>Standard loading</i>	<i>Average variance extracted (AVE)</i>	<i>Construct reliability (CR)</i>	<i>Cronbach's alpha</i>
<i>INT</i>	INT 1	0.747	0.576	0.890	0.891
	INT 2	0.792			
	INT 3	0.797			
	INT 4	0.760			
	INT 5	0.731			
	INT 6	0.740			
<i>EN</i>	EN 1	0.595	0.519	0.883	0.881
	EN 2	0.688			
	EN 3	0.649			
	EN 4	0.709			
	EN 5	0.688			
	EN 6	0.606			
	EN 7	0.593			
<i>CL</i>	CL 1	0.634	0.523	0.884	0.877
	CL 2	0.671			
	CL 3	0.699			
	CL 4	0.756			
	CL 5	0.750			
	CL 6	0.761			
	CL 7	0.776			
<i>PEU</i>	PEU 1	0.675	0.507	0.839	0.839
	PEU 2	0.600			
	PEU 3	0.516			
	PEU 4	0.739			
	PEU 5	0.848			
	PEU 6	0.703			
<i>PU</i>	PU 1	0.754	0.625	0.909	0.908
	PU 2	0.779			
	PU 3	0.823			
	PU 4	0.791			
	PU 5	0.821			
	PU 6	0.772			
<i>PE</i>	PE 1	0.872	0.791	0.919	0.919
	PE 2	0.865			
	PE 3	0.932			
<i>SMU</i>	SMU 1	0.600	0.510	0.870	0.867
	SMU 2	0.595			
	SMU 3	0.645			
	SMU 4	0.674			
	SMU 5	0.651			
	SMU 6	0.594			
	SMU 7	0.645			
<i>SS</i>	SS 1	0.705	0.517	0.882	0.886
	SS 2	0.671			
	SS 3	0.650			
	SS 4	0.686			
	SS 5	0.600			
	SS 6	0.698			
	SS 7	0.695			
<i>LP</i>	LP 1	0.613	0.512	0.880	0.881
	LP 2	0.610			
	LP 3	0.602			
	LP 4	0.621			
	LP 5	0.630			
	LP 6	0.637			
	LP 7	0.623			

Table 5: Hypotheses testing results

<i>H</i>	<i>Independent</i>	<i>Relationship</i>	<i>Dependent</i>	<i>Path</i>	<i>Estimate</i>	<i>SE</i>	<i>C.R</i>	<i>P</i>	<i>Result</i>
H1	INT	→	ENG	0.584	0.378	0.068	5.529	.000	Supported
H2	CL	→	ENG	0.078	0.055	0.091	0.599	0.549	Unsupported
H3	CL	→	SS	0.585	0.569	0.106	5.394	.000	Supported
H4	PEU	→	SMU	0.592	0.313	0.063	4.974	.000	Supported
H5	PU	→	SMU	0.302	0.185	0.064	2.895	0.004	Supported
H6	PE	→	SMU	0.262	0.124	0.04	3.105	0.002	Supported
H7	SMU	→	ENG	0.439	0.396	0.11	3.608	.000	Supported
H8	ENG	→	SS	0.357	0.494	0.121	4.073	.000	Supported
H9	SMU	→	LP	0.501	0.542	0.121	4.483	.000	Supported
H10	SS	→	LP	0.582	0.506	0.099	5.107	.000	Supported

cussions along with blogs and YouTube to share knowledge and information. All of these tools are important for the learning and teaching of the Quran and Hadith. While investigating students' experience in this regard, most of them revealed that they used the social media for the purpose of communication and sharing knowledge with their peers, which can be positively reflected on their performance. When students learning the Quran and Hadith in Malaysian higher education were asked to rate their use of social media in collaborative learning, the results were promising; the statistics indicate an intermediate level of use. All in all, students reported that social media is useful, easy to use, enjoyable and satisfying. These reflect their intention to use it for academic purposes in terms of interaction and engagement to reach the highest possible collaborative learning.

CONCLUSION

In order to improve learners' performance and achieve better collaborative learning, this paper suggests nine variables, namely interactivity, collaborative learning, engagement, social media use, perceived usefulness, perceived ease of use, perceived enjoyment, students' satisfaction and learners' performance. The current paper also used the two well-known theories of constructivism and TAM. Being the target of investigation, learners' performance, their interaction and collaborative learning were found to be positively influenced by the use of social media. Social media appeared also to be enjoyable and easy to use. Learning the Quran and Hadith (the main focus of this paper) was motivated through the use of social media channels. Finally, this paper provides a novel model of

using social media for collaborative learning and engagement. It also provides a novel methodology, which other researchers may use in future research.

RECOMMENDATIONS

Future research should consider investigating how the use of social media can best be supported by group interviews. It is recommended that other elements like teachers, supervisors and students in secondary schools be taken into consideration and investigated. This is important because these elements can be used for measuring how performance and engagement are influenced by social media in the process of collaborative learning. Furthermore, the effectiveness of social media use for interactivity should be investigated.

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