



Studying the Social Media Adoption by university students in the United Arab Emirates

Said A. Salloum^{1,2}, Waleed Maqableh¹, Chaker Mhamdi^{3,4}, Barween Al Kurdi⁵, and Khaled Shaalan²

ssalloum@uof.ac.ae; waleed@uof.ac.ae; shaker@buc.edu.om; balkurdi@aau.edu.jo;
khaled.shaalan@buid.ac.ae

¹ University of Fujairah, UAE

² The British University in Dubai, UAE

³ University of Manouba, Tunisia

⁴ Al Buraimi University College, Oman

⁵ Amman Arab University, Jordan

Abstract. Lately, instructors, as well as learners, have been integrating social networking media in the context of higher education systems. Social networking media has also become the subject of interest for researchers to explore its impacts in the process of imparting and acquiring higher education. Various platforms have been introduced by the social networking media to facilitate the process of communication between the teachers and students while it eases creating and sharing for its users. Through conducting research on the dynamics of students and instructors, their acceptance regarding the various innovations and their attitude towards these platforms, useful modifications of the current approaches can be done accordingly in a way that ensures a wide adaptation of the software. The current study is built on the ground of established research termed the Unified Theory of Acceptance and Use of Technology (UTAUT). The findings of this research are employed to confirm the factors of utilizing social networking media for e-learning in the United Arab Emirates higher education context. The quantitative data has been acquired based on the survey method. The sample of this current investigation is students and instructors from two different universities in the higher education sector of the United Arab Emirates. The predictive behavior of the anticipated stimulants for the research model was analyzed using the Structural Equation Modelling. The findings of this study are useful to comprehend the factors that drive the Emirati students to embrace certain perceptions of social media technology in the higher education context.

Keywords: *University students, Social network media, the unified theory of acceptance and use of technology (UTAUT).*

1. Introduction

The usage of social media has risen dramatically over the last few years, not only among casual users, but also among academic users (Al-Emran & Salloum, 2017; Al-Marouf & Al-Emran, 2018; S. A. Salloum, Al-Emran, Monem, & Shaalan, 2017; S. A. Salloum, Al-Emran, & Shaalan, 2016, 2017a; S. A. Salloum, AlHamad, Al-Emran, & Shaalan, 2018; Suksa-ngiam & Chaiyasoonthorn, 2015). Research suggested that social media has taken its toll not only among the general public, but it is also a friendly tool for the academic users (Al-Emran & Malik, 2016; Al-Emran & Shaalan, 2015b). They pointed out several factors which have contributed to this global adaptation (Al-Mohammadi & Derbel, 2014). The increasing popularity of Facebook among students is one of the leading causes of the increased use of social media. This is due to the fact that Facebook serves various purposes of communication (Mhamdi, 2016, 2017c).

Many researches have raised concerns about the Facebook domination and have referred to it as 'Facebook Madness' since users tend to get overly engrossed in browsing (Mohammed Habes, Alghizzawi, Khalaf, Salloum, & Ghani, 2018; S. A. Salloum, Al-Emran, & Shaalan, 2018; S. A. Salloum & Shaalan, 2018a, 2018b). (Oche & Aminu, 2010) observed that Facebook was resulting in phenomenal distractions for

students as they tend to remain online round the clock. Regardless of their presence in classroom and lecture theatres, students are often found mentally pre-occupied with their hand-held devices for chatting and communication (Al-Emran, Mezhuyev, Kamaludin, & AlSinani, 2018a; Al-Emran & Shaalan, 2015b, 2015a, 2017). This sort of social media obsession has caused academic impediments for many students. The use of short forms of words, abbreviations, and skipping of many vowels have become common traits of typing and writing among users in these forums (Al-Mohammadi & Derbel, 2014; E. Derbel & Al-Mohammadi, 2015). This has obviously affected students' use of written language which makes it a serious concern as language is said to be the bearer of the history, values, ethics, and culture of any society (Al-Mohammadi, 2014b, 2014a; E Derbel, 2014; Emira Derbel, 2017). (Obi, Bulus, Adamu, & Sala'at, 2012) observed that, sub-consciously, students tend to use similar language and writing methods in the classroom (Mohammed Habes et al., 2018).

Nonetheless, they similarly argued that these forums served as an essential platform for learning, gaining general knowledge, acquiring awareness and creativity which are necessary for developing users' cognition by facilitating knowledge exchange (Al-Emran, Mezhuyev, & Kamaludin, 2018b; Al-Emran, Mezhuyev, Kamaludin, & Shaalan, 2018b; Al-Mohammadi, 2014b; Al Emran & Shaalan, 2014b). (Kaplan & Haenlein, 2010) stated that if put to good use, social media can be of great service for enhancing teaching methods and mediums (Mhamdi, Al-Emran, & Salloum, 2018; S. A. Salloum, Al-Emran, Abdallah, & Shaalan, 2017; S. A. Salloum, Al-Emran, Monem, & Shaalan, 2018; S. A. Salloum, Al-Emran, & Shaalan, 2017b; S. A. Salloum, Mhamdi, Al-Emran, & Shaalan, 2017). Additionally, it opens a variety of gateways for students to gather required knowledge and information which would augment their academic performance (Al-Qaysi & Al-Emran, 2017; Al-Qaysi, Mohamad-Nordin, & Al-Emran, 2018; Malik & Al-Emran, 2018). The current study will probe the subject of advantages and factors which influence the university students' acceptance of social media technologies. These factors mainly include performance expectancy, effort expectancy, social influence and facilitating conditions, in the light of social media.

2. Literature review

Surveying the literature is an essential step before conducting any research study (Al-Emran, 2015; Al-Emran, Mezhuyev, & Kamaludin, 2018c; Al-Emran, Zaza, & Shaalan, 2015; Al-Qaysi, 2018; Al Emran & Shaalan, 2014a; Zaza & Al-Emran, 2015). (Lotan, Graeff, Ananny, Gaffney, & Pearce, 2011) observed that information streaming and the quality of news work has significantly been altered due to the prevalent revolution of broadcasting traditional media into digital network media. (Salim, 2012) stated that government restricting the traditional media resulted in a hike of digital social network adoption and the users began to rely on sources such as Twitter, Facebook, and various other social media platforms to receive news and updates on a daily basis. Furthermore, this enabled these networks to expand and involve a larger number of audiences (Mhamdi, 2017a, 2017b). (Cottle, 2011) found that "As the world's news media and new social networks communicated these dramatic images of mass opposition from across much of the Arab world", The trend of social media acceptance increased rapidly amongst university students who use it for communication and cooperation (Hussain, 2012; Suksa-ngiam & Chaiyasoonthorn, 2015).

Researchers such as (Suksa-ngiam & Chaiyasoonthorn, 2015; Wodzicki, Schwämmlein, & Moskaliuk, 2012) recognized that social media was a beneficial source to create virtual formal and informal learning forums and to serve the educational purposes by facilitating the exchange of knowledge. University students in higher education environments have gained an advantage from social media in times of emergency by interfaces that facilitate information sharing, communication and collaboration activities (Mhamdi, 2017d). Although several researchers like (Hanson et al., 2011; Salim, 2012; Suksa-ngiam & Chaiyasoonthorn, 2015) have contributed their efforts to explore the issue generally, none of them has explicitly addressed the topic concerning the Arabian Gulf higher education context.

Numerous frameworks that clarify the acceptance and utilization of technology have been fused in the Unified Theory of Acceptance and Use of Technology (UTAUT) which represents the theoretical framework of the current study. (Figure 1 in the following section will illustrate the UTAUT). The most popular frameworks included in the UTAUT are Diffusion of Innovation, Theory of Reasoned Action (TRA), Technology Acceptance Model (TAM), Motivational Model, Theory of Planned Behaviour (TPB), Combined TAM-TPB, Model of PC Utilization, and Social Cognitive Theory (Viswanath Venkatesh, Morris, Davis, & Davis, 2003). With the help of six longitudinal field studies, the UTAUT content has been verified. According to (Viswanath Venkatesh et al., 2003), 70% of usage intention variance is included in the

UTAUT model. This model comprehensively covers and associates four integral constructs, i.e. performance expectancy, effort expectancy, social influence, and facilitating conditions. These constructs impact the actual use of technology and the intention to use technology.

The current study employs the Unified Theory of Acceptance and Use of Technology (UTAUT) to the e-learning setup of higher education in the United Arab Emirates in order to understand the factors which influence the use of social networking media. Data has been collected from a sample of instructors and students from two different higher education institutions in the United Arab Emirates. Abiding by the quantitative research method, survey questionnaires have been used to gather the required data for the investigation. The predictive behavior of the recommended factors in the research model was verified using the Structural Equation Modelling.

3. Research Model

A very comprehensive research in the subject of IT behavior has been compiled by (V Venkatesh, Morris, Davis, & Davis, 2003) which includes pertinent methods and UTAUT application. This research provided other researchers with foundations to further validate and test their respective models. Applying the UTAUT model enables us to assess the hindrances that occur while executing the social media context. According to (V Venkatesh et al., 2003), the UTAUT is the chief theoretical framework to examine the adaptive responses of social media handlers. The research model that we used to support our findings is illustrated in Figure 1 in the following section of the paper. This model covers certain aspects which were to be hypothesized as the factors of use behavioral (UB) for social media. This included performance expectancy (PE), effort expectancy (EE), social influence (SI), facilitating conditions (FC), and behavioral intention (BI). The anticipated hypotheses and constructs are in harmony with the previous context. In the following section, we will derive the hypotheses in light of the utilized theoretical framework.

3.1. Performance Expectancy

The term ‘performance expectancy’ refers to the degree to which an individual believes that s/he can have benefits realization in his/her job performance with the help of an information system” according to (V Venkatesh et al., 2003). By viewing performance expectancy parallel with social media setting, we discover that E-learners have an enhanced education skill and performance since learning activities are more facilitated and augmented. Several researches on information systems suggest that behavioral intentions supportively influence the performance expectancy (Hanson et al., 2011; Salim, 2012; S. A. Salloum & Shaalan, 2018b; Suksa-ngiam & Chaiyasoonthorn, 2015), which brings us to the following hypothesis:

H1: Performance expectancy (PE) has a positive effect on behavioral intention to use social media.

3.2. Effort Expectancy

(V Venkatesh et al., 2003), explained effort expectancy to be “the degree of ease related to the information systems and their usage”. The paradigms of effort expectancy will determine the factors of individual objectives in conformity with previous research studies (Hanson et al., 2011; Salim, 2012; S. A. Salloum & Shaalan, 2018b; Suksa-ngiam & Chaiyasoonthorn, 2015). Concerning the recent escalation of social media tools, assessing behavioral intention to use social media technology is incomplete without taking effort expectancy into consideration. The UTAUT explains that the convenience and ease of access that the social media technology dispenses, along with the impact that behavioral intention takes from effort expectancy will determine the extent of individual acceptance. We will, therefore, put the following hypothesis to test:

H2: Effort expectancy (EE) has a positive effect on behavioral intention to use social media.

3.3. Social Influence

Social influence, according to (V Venkatesh et al., 2003), is “the degree to which a person realizes how the others believe that a new information system should be used by him or her”. Earlier investigations suggest that social influence drives the individual’s intention for accepting and adapting to new technology. Together with content from UTAUT and earlier studies (Hanson et al., 2011; Salim, 2012; S. A.

Salloum & Shaalan, 2018b; Suksa-ngiam & Chaiyasoonthorn, 2015), we understand the ways in which behavioral intention to use social media technology is greatly impacted by social influence. Therefore, the following hypothesis is put to test:

H3: Social influence (SI) has a positive effect on behavioral intention to use social media.

3.4. Facilitating Conditions

The learners' keenness to continue performing a responsibility is influenced by their behavior physical setting or the work environment which is referred to as 'Facilitating conditions'. This construct happens to be the basic foundation of UTAUT. The founder of the UTAUT model found that information systems are fundamentally dependent on FC (V Venkatesh et al., 2003) which is confirmed in the most recent findings (Hanson et al., 2011; Salim, 2012; S. A. Salloum & Shaalan, 2018b; Suksa-ngiam & Chaiyasoonthorn, 2015). The latest established definition of FC in the existing research is "the degree to which individuals are of the view that technical and organizational infrastructures endure to strengthen them". Thus students and instructors are influenced into adopting social media to achieve certain aims and objectives which may vary according to the educational context, especially when dealing with mixed-ability classes (Al-Mohammadi, 2015). The capacities which are integrally assessed for this purpose include instructions, support, and availability of resources for learning and social media accessibility. This leads us to the hypothesis underneath:

H4: Facilitating conditions (FC) will significantly and positively influence student to use social media.

3.5. Behavioral Intention to Use

In regards to social media technology utilization (Hanson et al., 2011) described Behavioral Intention (BI) as the objective of learners to employ social media technology and integrate it throughout the progression of learning. The BI items revolve around assessing the desire of learners for accepting social media technology and adopting it (Suksa-ngiam & Chaiyasoonthorn, 2015). (Suksa-ngiam & Chaiyasoonthorn, 2015) and several other researchers in this field have proven behavioral intention to be influenced by the actual system use of social media technology and particularly the behavior or actual use of social media (Hanson et al., 2011; Salim, 2012; S. A. Salloum & Shaalan, 2018b; Suksa-ngiam & Chaiyasoonthorn, 2015). Both constructs demonstrated a significant positive correlation, which brings us to the following hypothesis:

H5: The Intention to use the e-learning system (BI) has a positive effect on the Actual use (AU) of the social media.

In the light of the above-derived hypotheses, we have validated the research model below, establishing our framework on the UTAUT as illustrated in figure 1.

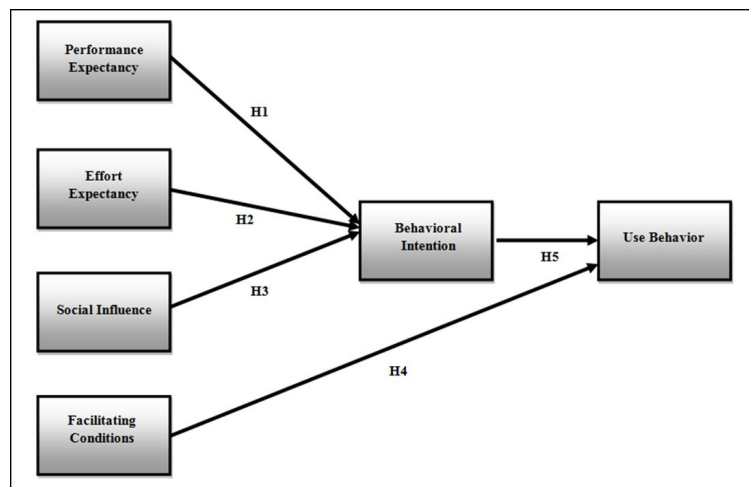


Figure 1. Research Model.

4. Research Methodology

4.1. Procedure

The sample for data collection is comprised of postgraduate and undergraduate students from the University of Fujairah (UOF) and The British University in Dubai (BUiD) in the United Arab Emirates. For the quantitative data collection, questionnaires were issued to examine the assumed research hypotheses and to understand the impact of factors under investigation (Al-Emran, 2014; Al-Emran, Mezhuyev, & Kamaludin, 2018a; Mezhuyev, Al-Emran, Fatehah, & Hong, 2018). The questionnaires were divided over 24 items addressing important factors like performance expectancy (PE), effort expectancy (EE), social influence (SI), facilitating conditions (FC), and behavioral intention (BI). The researchers managed to gather 370 respondents for the survey, out of which 37 submitted incomplete responses that were thus deemed useless and, hence, discarded. The research is based on 90% response rate from 333 fully-completed questionnaires. The sample size was acquired from the 333 approved and considered responses, as per (Krejcie & Morgan, 1970). These responses were analyzed using the conceptual model. The researchers arrived at a sample size by examining the data with respect to the structural equation model. The requirements used for the analysis of hypotheses were negligible as compared to the huge sample of 408 participants (Chuan & Penyelidikan, 2006).

4.2. Participants

Several demographics were adopted to classify the participants in the survey questionnaire. These included age, gender and the frequency of social media use. The sample size for this purpose consisted of 210 females and 123 males out of a total of 333 students representing 63% and 37%, respectively. The majority of these students, i.e., 69% were aged between 18 and 29. The remaining 31% were at the age of 30. 96% of the overall participants; that is 320 out of 333 students, claimed to be highly proficient in computer skills. 86% confessed to use social media on a daily basis. According to the survey findings, the most popular social media platforms were Facebook (followed by 183 students), Twitter and Instagram followed by 109 and 102 students respectively. The most popular use of these social media networks was communication and online chat (225 students), sharing videos, photos and status and profile updates (211 students) and educational purposes (118 students).

5. Findings and Discussion

5.1. Questionnaire Pilot Study

To verify and assess the reliability of the questionnaire items before including them in the final survey, a preliminary study was conducted. For this purpose, 40 participants from the target population were randomly selected. The construct items were tested for internal reliability using the Cronbach's alpha. An acceptable reliability coefficient is set at 0.70 or higher as per (Alrawashdeh, Firstauthor, & Secondcoauthor, n.d.). All the constructs had Cronbach's alpha values above 0.7 as is shown in (Table 1). The researchers decided to conduct the final study since all the constructs could be regarded as reliable.

Construct	Cronbach's alpha
Behavioral Intention	0.894
Effort Expectancy	0.827
Facilitating Conditions	0.864
Performance Expectancy	0.816
Social Influence	0.879
Use Behavior	0.710

Table 1. Questionnaire relies on survey measurement scale Cronbach's alpha.

With respect to the table illustrated above, the six measurement scales of the questionnaire can be used in the current study since they are proven to be reliable

5.2. Measurement Model Analysis

The most commonly used software by (Ringle, Wende, & Will, 2005) for the Partial Least Squares-Structural Equation Modelling (PLS-SEM) is Smart PLS. This study focuses on PLS-SEM for the

examination of structural models and measurement (Chin, 1998). The measurement model (outer model) is defined as the connection between indicators themselves, while the structural model refers to the connection between latent constructs themselves. According to (Anderson & Gerbing, 1988), the highest probability approach was implemented to utilize SEM-PLS for the measurement of the proposed model. Reliability and convergent validity were ascertained by various measurements such as Factor Loadings, Average Variance Extracted and Composite Reliability. Factor loadings were used to represent the weight and each questionnaire variable's correlation value like a perceived indicator. The factors' dimensionality is signified with the aid of larger load value. The Composite Reliability (CR) measure is a useful method for measuring reliability. CR serves a similar function by presenting an accurate value through factor loadings in the constructed formula. The term Average Variance Extracted (AVE) is defined as the average quantity of variance present in a specific variable describing the latent construct. AVE can be used to evaluate each factor's convergence when the discriminate validity is larger than one factor. Table 1 reveals that our experiment's result for the convergent validity and questionnaire reliability has gone beyond the requirement for convergent validity and reliability. Table 2 presents summarized reliability and validity of the questionnaire, along with the evaluation results of each factor through variable acquired from the questionnaire.

5.2.1 Assessment of the measurement model (Outer model)

5.2.1.1 Convergent validity

The comparative amount of convergent validity is determined by the implementation of indicators that include factor loadings, variance extracted and reliability that consists of Cronbach's Alpha and composite reliability (Hair, Black, Babin, Anderson, & Tatham, 1998). According to (Hair et al., 1998), when all constructs' reliability coefficient and composite reliability (CR) transcend 0.7 then it shows the internal consistency between numerous measurements of a construct. This is apparent in Table 2 in which Cronbach's alpha scores are higher than 0.7 (Gefen, Straub, & Boudreau, 2000; Nunnally & Bernstein, 1978) and constructs' composite reliabilities range between 0.748 to 0.881. Moreover, all average variance extracted (AVE) values that are between 0.613 and 0.721 are fulfilling the standard of describing at least half of the variance extracted from a group of items (Falk & Miller, 1992) that are fundamentals of the latent construct. Hence, the range used to assess the constructs is believed to attain convergent validity.

5.3.1.2 Discriminate validity

Table 2 shows that as all AVE values are higher than the squared correlation among constructs in the measurement model, all conditions for the discriminate validity are fulfilled. If an AVE value is larger than 0.5, then the construct should find at least 50% of the measurement variance (Fornell & Larcker, 1981; Hair et al., 1998). Discriminant value was determined by Partial Least Squares (SmartPLS). The loadings and cross-loadings are shown in Table 2, and a thorough examination of loadings and cross-loadings reveal that all measurement items are broadly loaded on their own latent constructs, rather than loading on other constructs. AVE analysis is illustrated in Table 3. The AVE scores' square root is represented by the bold diagonal elements in the table. On the contrary, the correlation between constructs is indicated by off-loading diagonal elements. The table clearly shows that the AVE values' square root is present between the ranges of 0.787 and 0.981, which is greater than the standard value of 0.5. In contrast to all other correlations for every construct, the AVE is apparently greater, which demonstrates that there is a larger variance of all constructs with their own measures, as compared to the model's other constructs that highlight the discriminate validity.

Constructs	Items	Factor Loading	Cronbach's Alpha	CR	AVE
Behavioral Intention	BHI_1	0.761	0.736	0.777	0.721
	BHI_2	0.774			
	BHI_3	0.774			
	BHI_4	0.876			
Effort Expectancy	EFF_1	0.759	0.816	0.871	0.701
	EFF_2	0.833			
	EFF_3	0.862			

	EFF_4	0.888			
Facilitating Conditions	FAC_1	0.905	0.817	0.770	0.671
	FAC_2	0.887			
	FAC_3	0.755			
	FAC_4	0.714			
Performance Expectancy	PER_1	0.864	0.851	0.881	0.652
	PER_2	0.773			
	PER_3	0.790			
	PER_4	0.750			
Social Influence	SOL_1	0.717	0.743	0.844	0.715
	SOL_2	0.778			
	SOL_3	0.799			
	SOL_4	0.877			
Use Behavior	UB_1	0.822	0.891	0.748	0.613
	UB_2	0.829			
	UB_3	0.734			
	UB_4	0.749			

Table 2. Convergent validity results which assures acceptable values (Factor loading, Cronbach's Alpha, composite reliability ≥ 0.70 & AVE > 0.5).

	Behavioral Intention	Effort Expectancy	Facilitating Conditions	Performance Expectancy	Social Influence	Use Behavior
Behavioral Intention	0.981					
Effort Expectancy	0.681	0.820				
Facilitating Conditions	0.366	0.581	0.826			
Performance Expectancy	0.690	0.571	0.511	0.787		
Social Influence	0.293	0.371	0.444	0.524	0.799	
Use Behavior	0.149	0.280	0.488	0.530	0.443	0.844

Table 3. Fornell-Larcker Scale.

5.2.2 Assessment of structural model (Inner model)

5.2.2.1 Coefficient of determination -R²

The coefficient of determination (R² value) measure is basically used to examine the structural model (Y.-C. Lin, Chen, & Yeh, 2010) and this coefficient also aids in determining the model's predictive accuracy (S.-C. Lin, Persada, & Nadlifatin, 2014). It is dealt with as the squared correlation between a particular endogenous construct's actual and predicted values. The coefficient signifies exogenous latent variables' combined influence on an endogenous latent variable. As the squared correlation between the actual and predicted values of the variables is presented by the coefficient, therefore, it entails that the extent of endogenous constructs' variance is protected by every exogenous construct recognized with it. According to (Chin, 1998), values more than 0.67 are indications of high value while the qualities in the range of 0.33 to 0.67 are direct and the qualities that range between 0.19 and 0.33 are weak values. Values lower than 0.19 are considered inadmissible (Liu, Liao, & Peng, 2005). In Figure 3, the model shows a Moderate predictive power, which supports almost 63.6 percent. According to Table 4, it can be seen that the model has high predictive power, which supports almost 69% and 59% of the variance in the Behavioral Intention and Use Behavior, respectively.

Constructs	R ²	Results
Behavioral Intention	0.692	High
Use Behavior	0.587	Moderate

Table 4. R² of the endogenous latent variables.

5.2.2.2 Test of the hypotheses - Path coefficient

To test the association between the theoretical constructs for the structural model, implementation of a structural equation model using (Smart PLS ver. 3.2.6) with the highest probable estimation was done as to perform the analyses of the proposed hypotheses (M. Habes, Alghizzawi, Salloum, & Ahmad, 2018; S. A. Salloum, Al-Emran, Shaalan, & Tarhini, 2018; S. A. S. Salloum & Shaalan, 2018). Table 5 and Figure 2 present a summary of the findings, and it can be seen that all hypotheses are found to be significant. Based on the data analysis hypotheses H1, H2, H3, H4, and H5 were supported by the empirical data. Performance Expectancy (PE), Effort Expectancy (EE), Social Influence (SI), and Facilitating Conditions (FC) have significant effects on Behavioral Intention (BI) ($b = 0.176$, $P < 0.00$), ($b = 0.228$, $P < 0.01$), ($b = 0.161$, $P < 0.00$), and ($b = -0.132$, $P < 0.01$) respectively, hence, H1, H2, H3 and H4 are supported. Behavioral Intention (BI) has also significant effects on Use Behavior (AU) ($b = 0.371$, $P < 0.05$), ($b = 0.483$, $P < 0.001$), hence, H5 is supported. A summary of the hypotheses testing results is shown in Table 5.

H	Relationship	Path	t-value	p-value	Direction	Decision
H1	Performance Expectancy ->Behavioral Intention	0.176	23.211	0.000	Positive	Supported**
H2	Effort Expectancy ->Behavioral Intention	0.228	9.533	0.002	Positive	Supported**
H3	Social Influence -> Behavioral Intention	0.161	11.422	0.000	Positive	Supported**
H4	Facilitating Conditions -> Behavioral Intention	-0.132	6.985	0.001	Negative	Supported*
H5	Behavioral Intention -> Use Behavior	0.371	1.416	0.012	Positive	Supported*

Table 5. Results of structural Model - Research Hypotheses Significant at $p^{**} < 0.01$, $p^* < 0.05$.

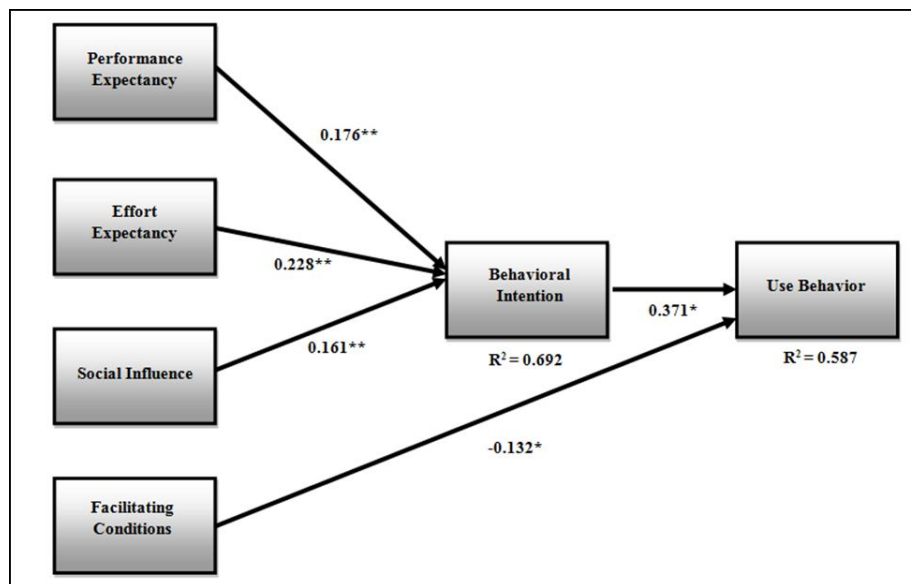


Figure 2. Path coefficient results (significant at $p^{**} < 0.01$, $p^* < 0.05$).

6. Conclusion and future work

By adopting the UTAUT model, this current study explored the Emirati students' perceptions of adopting social media technology. The factors that determine the use of social networking media by United Arab Emirates higher education for e-learning were examined by using the unified theory of acceptance and use of technology (UTAUT). Through the application of the survey method, data has been collected for a quantitative research outcome. Instructors and learners from two universities in the United Arab Emirates were involved in this study dealing with the higher education context. The anticipated stimulants of the research model were tested for their predictive behavior with the help of Structural

Equation Modelling. Performance expectancy (PE), effort expectancy (EE), social influence (SI), and facilitating conditions (FC) are driven by the influential factors. Behavioral intentions are impacted by all the factors. The reason for this can be the flexibility that UTAUT offers for the social media technology in this context. The Emirati students have statistically proven to be influenced the most by Facebook.

This research aimed at comprehending the factors that drive the UAE students to hold certain opinions about social media technology. The behavioral intention can be analyzed to use social media technology in the UAE where the proposed hypotheses and research model are suitable choices for this purpose. With the help of structural equation modeling (PLS-SEM), the research hypotheses were examined. The variance explained (R-squared value), structural paths and t-statistics were scrutinized using performance analysis to examine the structural model. Figure 2 represented the structural model while Table 5 referred to the outcomes of this data analysis. Every hypothesis in the research model was comprised of a path significance and variance explained (R^2), each of which was analyzed to support all the proposed hypotheses.

In the course of this study, it was found that the students' behavioral intention to utilize social media technology augmented and took positive influence from performance expectancy (PE), effort expectancy (EE), social influence (SI), and facilitating conditions (FC). This outcome is in harmony with H1, H2, H3, H4, and H5. These findings are clear indicators of the ability and reliance that students have in utilizing social media technology. This positive effect on students' behavioral intentions to utilize social media technology has also been observed in previous studies (Hanson et al., 2011; Salim, 2012; S. A. Salloum & Shaalan, 2018b; Suksa-ngiam & Chaiyasoonthorn, 2015). This effect is noticed from factors like performance expectancy (PE), effort expectancy (EE), social influence (SI), and facilitating conditions (FC).

An eminent variance R-squared was measured for behavioural intention i.e. 69% ($R^2 = 0.692$) which validated the variance for the students' behavioral intention to employ social media technology. The study employed performance expectancy (PE), effort expectancy (EE) and social influence (SI) to predict the two variables. A nominal R-squared value was measured for user behavior with the help of facilitating conditions (FC) and students' behavioral intention. The combined variance of these factors was 58.7% ($R^2 = 0.587$). The following important inferences can be deduced from this research: Students' behavioral intentions augment with performance expectancy (PE), effort expectancy (EE), social influence (SI), and facilitating conditions (FC). The focus of managers and developers in the learning field of social media technology should, therefore, be targeted towards factors which open platforms for learning and consequently boost students' competence in social media applications for optimum implementation.

Correspondingly with Facebook, the study undertook general social media platforms too to understand if the social media technology application varied accordingly. For this purpose, the researchers studied Google+, Twitter and Instagram. Apparently, the UAE users prefer to use Facebook more than any other social media application, which is the most popular choice in the UAE market. The researchers were, therefore, unable to generalize the investigation for all the available social media applications. Furthermore, the sample population was very small, i.e. students from two UAE universities, which is not a fair representation of the UAE population. However, this research can be deemed good enough to represent the UAE university students and hence can be applied to understand their approach. The researchers recommend extensive study with respect to the UTAUT model, encompassing governmental higher education institutions also, so as to reach and understand the parallels of factors which impact students' behavior in governmental as well as non-government universities.

References

- Al-Emran, M. (2014). *Investigating Students' and Faculty members' Attitudes Towards the Use of Mobile Learning in Higher Educational Environments at the Gulf Region*. The British University in Dubai (BUiD).
- Al-Emran, M. (2015). Hierarchical Reinforcement Learning: A Survey. *International Journal of Computing and Digital Systems*, 4(2), 137-143.
- Al-Emran, M., & Malik, S. I. (2016). The Impact of Google Apps at Work: Higher Educational Perspective. *International Journal of Interactive Mobile Technologies*, 10(4), 85-88. <https://doi.org/10.3991/ijim.v10i4.6181>

- Al-Emran, M., Mezhuyev, V., & Kamaludin, A. (2018a). PLS-SEM in Information Systems Research: A Comprehensive Methodological Reference. In *4th International Conference on Advanced Intelligent Systems and Informatics (AISIS 2018)* (pp. 644–653). Springer.
- Al-Emran, M., Mezhuyev, V., & Kamaludin, A. (2018b). Students' Perceptions towards the Integration of Knowledge Management Processes in M-learning Systems: A Preliminary Study. *International Journal of Engineering Education*, *34*(2), 371–380.
- Al-Emran, M., Mezhuyev, V., & Kamaludin, A. (2018c). Technology Acceptance Model in M-learning context: A systematic review. *Computers & Education*, *125*, 389–412.
- Al-Emran, M., Mezhuyev, V., Kamaludin, A., & AlSinani, M. (2018a). Development of M-learning Application based on Knowledge Management Processes. In *2018 7th International conference on Software and Computer Applications (ICSCA 2018)* (pp. 248–253). Malaysia: ACM.
- Al-Emran, M., Mezhuyev, V., Kamaludin, A., & Shaalan, K. (2018b). The impact of knowledge management processes on information systems: A systematic review. *International Journal of Information Management*, *43*, 173–187.
- Al-Emran, M., & Salloum, S. A. (2017). Students' Attitudes Towards the Use of Mobile Technologies in e-Evaluation. *International Journal of Interactive Mobile Technologies (IJIM)*, *11*(5), 195–202. <https://doi.org/10.3991/ijim.v11i5.6879>
- Al-Emran, M., & Shaalan, K. (2015a). Attitudes towards the use of mobile learning: A case study from the gulf region. *International Journal of Interactive Mobile Technologies*, *9*(3), 75–78. <https://doi.org/10.3991/ijim.v9i3.4596>
- Al-Emran, M., & Shaalan, K. (2015b). Learners and educators attitudes towards mobile learning in higher education: State of the art. In *2015 International Conference on Advances in Computing, Communications and Informatics, ICACCI 2015* (pp. 907–913). IEEE. <https://doi.org/10.1109/ICACCI.2015.7275726>
- Al-Emran, M., & Shaalan, K. (2017). Academics' Awareness Towards Mobile Learning in Oman. *International Journal of Computing and Digital Systems*, *6*(1), 45–50. <https://doi.org/10.12785/IJCDS/060105>
- Al-Emran, M., Zaza, S., & Shaalan, K. (2015). Parsing modern standard Arabic using Treebank resources. In *2015 International Conference on Information and Communication Technology Research, ICTRC 2015*. <https://doi.org/10.1109/ICTRC.2015.7156426>
- Al-Marroof, R. A. S., & Al-Emran, M. (2018). Students Acceptance of Google Classroom: An Exploratory Study using PLS-SEM Approach. *International Journal of Emerging Technologies in Learning (IJET)*, *13*(6), 112–123.
- Al-Mohammadi, S. (2014a). Foreign Labor in the Arab Gulf and Its Impact on Language, Culture, and Identity. In *Who Defines me: Negotiating Identity in Language and Culture* (pp. 138–151).
- Al-Mohammadi, S. (2014b). Integrating Reading and Writing in ELT. In *Focusing on EFL Reading: Theory and Practice* (pp. 260–274). Cambridge Scholars Publishing.
- Al-Mohammadi, S. (2015). Mixed Ability Classes in English Language Teaching: Challenges and Opportunities. In *Issues in English Education in the Arab World* (pp. 110–124). Cambridge Scholars Publishing.
- Al-Mohammadi, S., & Derbel, E. (2014). The effects of embedding information technologies within ELT on EFL learners' motivation and interest. *International Journal of Applied Linguistics and English Literature*, *3*(1), 181–186.
- Al-Qaysi, N. (2018). The Impact of Child Protection Policy on Omani Classrooms. *International Journal of Information Technology and Language Studies*, *2*(1), 1–11.
- Al-Qaysi, N., & Al-Emran, M. (2017). Code-switching Usage in Social Media: A Case Study from Oman. *International Journal of Information Technology and Language Studies*, *1*(1), 25–38.
- Al-Qaysi, N., Mohamad-Nordin, N., & Al-Emran, M. (2018). A Systematic Review of Social Media Acceptance from the Perspective of Educational and Information Systems Theories and Models. *Journal of Educational Computing Research*. <https://doi.org/https://doi.org/10.1177/0735633118817879>
- Al Emran, M., & Shaalan, K. (2014a). A Survey of Intelligent Language Tutoring Systems. In *Proceedings of the 2014 International Conference on Advances in Computing, Communications and Informatics, ICACCI 2014* (pp. 393–399). IEEE. <https://doi.org/10.1109/ICACCI.2014.6968503>
- Al Emran, M., & Shaalan, K. (2014b). E-podium Technology: A medium of managing Knowledge at Al Buraimi University College via M-learning. In *BCS International IT Conference* (pp. 1–4). UAE. <https://doi.org/10.14236/ewic/bcsme2014.14>

- Alrawashdeh, T. A., Firstauthor, A. B., & Secondcoauthor, D. E. (n.d.). Extended UTAUT to examine the acceptance of web based training system by public sector's employees.
- Anderson, J. C., & Gerbing, D. W. (1988). Structural equation modeling in practice: A review and recommended two-step approach. *Psychological Bulletin*, 103(3), 411.
- Chin, W. W. (1998). The partial least squares approach to structural equation modeling. *Modern Methods for Business Research*, 295(2), 295–336.
- Chuan, C. L., & Penyelidikan, J. (2006). Sample size estimation using Krejcie and Morgan and Cohen statistical power analysis: A comparison. *Jurnal Penyelidikan IPBL*, 7, 78–86.
- Cottle, S. (2011). Media and the Arab uprisings of 2011. *Journalism*, 12(5), 647–659.
- Derbel, E. (2014). Constructing Afro-Caribbean Identity through Memory and Language in Grace Nichols's *I Is Along Memored Woman*. In *Selim. Y.F and Mohamed,E (Eds). Who Defines Me: Negotiating Identity in Language and Literature*, Pp 63-76. UK: Cambridge Scholars Publishing.
- Derbel, E. (2017). *Iranian Women in the Memoir: Comparing Reading Lolita in Tehran and Persepolis (1) and (2)*. Cambridge Scholars Publishing.
- Derbel, E., & Al-Mohammadi, S. (2015). CHAPTER TEN INTEGRATION OF LANGUAGE SKILLS AND CULTURE IN ENGLISH LANGUAGE TEACHING: RATIONALE AND IMPLICATIONS FOR PRACTICE. In *Issues in English Education in the Arab World*.
- Falk, R. F., & Miller, N. B. (1992). *A primer for soft modeling*. University of Akron Press.
- Fornell, C., & Larcker, D. F. (1981). Evaluating Structural Equation Models With Unobservable Variables and Measurement Error. *Journal of Marketing Research*, 18(1), 39–50. <https://doi.org/10.2307/3151312>
- Gefen, D., Straub, D., & Boudreau, M.-C. (2000). Structural equation modeling and regression: Guidelines for research practice. *Communications of the Association for Information Systems*, 4(1), 1–77. <https://doi.org/10.1.1.25.781>
- Habes, M., Alghizzawi, M., Khalaf, R., Salloum, S. A., & Ghani, M. A. (2018). The Relationship between Social Media and Academic Performance: Facebook Perspective. *International Journal of Information Technology and Language Studies*, 2(1).
- Habes, M., Alghizzawi, M., Salloum, S. A., & Ahmad, M. (2018). The Use of Mobile Technology in the Marketing of Therapeutic Tourist Sites: A Critical Analysis. *International Journal of Information Technology and Language Studies*, 2(2).
- Hair, J. F., Black, W. C., Babin, B. J., Anderson, R. E., & Tatham, R. L. (1998). *Multivariate data analysis* (Vol. 5). Prentice hall Upper Saddle River, NJ.
- Hanson, C., West, J., Neiger, B., Thackeray, R., Barnes, M., & McIntyre, E. (2011). Use and acceptance of social media among health educators. *American Journal of Health Education*, 42(4), 197–204. <https://doi.org/10.1080/19325037.2011.10599188>
- Hussain, I. (2012). A study to evaluate the social media trends among university students. *Procedia-Social and Behavioral Sciences*, 64, 639–645.
- Kaplan, A. M., & Haenlein, M. (2010). Users of the world, unite! The challenges and opportunities of Social Media. *Business Horizons*, 53(1), 59–68.
- Krejcie, R. V., & Morgan, D. W. (1970). Determining Sample Size for Research Activities. *Educational and Psychological Measurement*, 30(3), 607–610. <https://doi.org/10.1177/001316447003000308>
- Lin, S.-C., Persada, S. F., & Nadlifatin, R. (2014). A study of student behavior in accepting the Blackboard Learning System: A Technology Acceptance Model (TAM) approach. In *Computer Supported Cooperative Work in Design (CSCWD), Proceedings of the 2014 IEEE 18th International Conference on* (pp. 457–462). IEEE.
- Lin, Y.-C., Chen, Y.-C., & Yeh, R. C. (2010). Understanding college students' continuing intentions to use multimedia e-learning systems. *World Transactions on Engineering and Technology Education*, 8(4), 488–493.
- Liu, S.-H., Liao, H.-L., & Peng, C.-J. (2005). Applying the technology acceptance model and flow theory to online e-learning users' acceptance behavior. *E-Learning*, 4(H6), H8.
- Lotan, G., Graeff, E., Ananny, M., Gaffney, D., & Pearce, I. (2011). The Arab Spring| the revolutions were tweeted: Information flows during the 2011 Tunisian and Egyptian revolutions. *International Journal of Communication*, 5, 31.
- Malik, S. I., & Al-Emran, M. (2018). Social Factors Influence on Career Choices for Female Computer Science Students. *International Journal of Emerging Technologies in Learning (IJET)*, 13(5), 56–70.

- Mezhuyev, V., Al-Emran, M., Fatehah, M., & Hong, N. C. (2018). Factors affecting the Metamodelling Acceptance: A Case Study from Software Development Companies in Malaysia. *IEEE Access*, 6, 49476–49485.
- Mhamdi, C. (2016). Transgressing media boundaries: News creation and dissemination in a globalized world. *Mediterranean Journal of Social Sciences*, 7(5), 272.
- Mhamdi, C. (2017a). Framing “the Other” in Times of Conflicts: CNN’s Coverage of the 2003 Iraq War. *Mediterranean Journal of Social Sciences*, 8(2), 147–153.
- Mhamdi, C. (2017b). Interpreting Games: Meaning Creation in the Context of Temporality and Interactivity. *Mediterranean Journal of Social Sciences*, 8(4).
- Mhamdi, C. (2017c). The use of political cartoons during popular protests: the case of the 2011 Tunisia uprising. *Journal of English Studies*, 15, 193–220.
- Mhamdi, C. (2017d). What Can Video Add to the Learning Experience? Challenges and Opportunities. *International Journal of Information Technology and Language Studies*, 1(1), 17–24.
- Mhamdi, C., Al-Emran, M., & Salloum, S. A. (2018). *Text mining and analytics: A case study from news channels posts on Facebook*. *Studies in Computational Intelligence* (Vol. 740). https://doi.org/10.1007/978-3-319-67056-0_19
- Nunnally, J. C., & Bernstein, I. H. (1978). Psychometric theory.
- Obi, N. C., Bulus, L. D., Adamu, G. M., & Sala’at, A. B. (2012). The need for safety consciousness among Youths on social Networking Sites. *Journal of Applied Science and Management (JASM)*, 14(1).
- Oche, M., & Aminu, A. (2010). Nigeria: Social Networking and the Future of Students 3RD October 2010. *Leadership Newspaper (ABUJA)* <Http://Allafrica.Com/Stories/201010040385>. *Html r Etrieved*, 21(05), 2013.
- Ringle, C. M., Wende, S., & Will, A. (2005). SmartPLS 2.0 (Beta). Hamburg. Available in <Http://Www.Smartpls.De>.
- Salim, B. (2012). An application of UTAUT model for acceptance of social media in Egypt: A statistical study. *International Journal of Information Science*, 2(6), 92–105.
- Salloum, S. A., Al-Emran, M., Abdallah, S., & Shaalan, K. (2017). Analyzing the Arab Gulf Newspapers Using Text Mining Techniques. In *International Conference on Advanced Intelligent Systems and Informatics* (pp. 396–405). Springer. https://doi.org/10.1007/978-3-319-64861-3_37
- Salloum, S. A., Al-Emran, M., Monem, A. A., & Shaalan, K. (2018). Using text mining techniques for extracting information from research articles. In *Studies in Computational Intelligence* (Vol. 740). Springer. https://doi.org/10.1007/978-3-319-67056-0_18
- Salloum, S. A., Al-Emran, M., Monem, A., & Shaalan, K. (2017). A Survey of Text Mining in Social Media: Facebook and Twitter Perspectives. *Advances in Science, Technology and Engineering Systems Journal*, 2(1), 127–133. Retrieved from <http://astesj.com/archive/volume-2/volume-2-issue-1/survey-text-mining-social-media-facebook-twitter-perspectives/>
- Salloum, S. A., Al-Emran, M., & Shaalan, K. (2016). A Survey of Lexical Functional Grammar in the Arabic Context. *International Journal of Computing and Network Technology*, 4(3), 141–147.
- Salloum, S. A., Al-Emran, M., & Shaalan, K. (2017a). Mining Social Media Text: Extracting Knowledge from Facebook. *International Journal of Computing and Digital Systems*, 6(2), 73–81. <https://doi.org/10.12785/ijcds/060203>
- Salloum, S. A., Al-Emran, M., & Shaalan, K. (2017b). Mining Text in News Channels: A Case Study from Facebook. *International Journal of Information Technology and Language Studies*, 1(1), 1–9.
- Salloum, S. A., Al-Emran, M., & Shaalan, K. (2018). The Impact of Knowledge Sharing on Information Systems: A Review. In *13th International Conference, KMO 2018*. Slovakia.
- Salloum, S. A., Al-Emran, M., Shaalan, K., & Tarhini, A. (2018). Factors affecting the E-learning acceptance: A case study from UAE. *Education and Information Technologies*. <https://doi.org/https://doi.org/10.1007/s10639-018-9786-3>
- Salloum, S. A., AlHamad, A. Q., Al-Emran, M., & Shaalan, K. (2018). A survey of Arabic text mining. In *Studies in Computational Intelligence* (Vol. 740). Springer. https://doi.org/10.1007/978-3-319-67056-0_20
- Salloum, S. A., Mhamdi, C., Al-Emran, M., & Shaalan, K. (2017). Analysis and Classification of Arabic Newspapers’ Facebook Pages using Text Mining Techniques. *International Journal of Information Technology and Language Studies*, 1(2), 8–17.
- Salloum, S. A. S., & Shaalan, K. (2018). Investigating students’ acceptance of E-learning system in Higher

- Educational Environments in the UAE: Applying the Extended Technology Acceptance Model (TAM). The British University in Dubai.
- Salloum, S. A., & Shaalan, K. (2018a). Adoption of e-book for university students. In *International Conference on Advanced Intelligent Systems and Informatics* (pp. 481–494). Springer.
- Salloum, S. A., & Shaalan, K. (2018b). Factors affecting students' acceptance of e-learning system in higher education using UTAUT and structural equation modeling approaches. In *International Conference on Advanced Intelligent Systems and Informatics* (pp. 469–480). Springer.
- Suksa-ngiam, W., & Chaiyasoonthorn, W. (2015). The adoption of social media by Thai university students: Multiple group moderating effects. *Information Development*, 31(1), 69–82.
- Venkatesh, V., Morris, M., Davis, G., & Davis, F. (2003). User Acceptance of Information Technology: Toward a Unified View. *MIS Quarterly*, 425–478. <https://doi.org/10.2307/30036540>
- Venkatesh, V., Morris, M. G., Davis, G. B., & Davis, F. D. (2003). User Acceptance of Information Technology: Toward a Unified View. *MIS Quarterly*, 27(3), 425–478. <https://doi.org/10.2307/30036540>
- Wodzicki, K., Schwämmlein, E., & Moskaliuk, J. (2012). “Actually, I wanted to learn”: study-related knowledge exchange on social networking sites. *The Internet and Higher Education*, 15(1), 9–14.
- Zaza, S., & Al-Emran, M. (2015). Mining and exploration of credit cards data in UAE. In *Proceedings - 2015 5th International Conference on e-Learning, ECONF 2015* (pp. 275–279). IEEE. <https://doi.org/10.1109/ECONF.2015.57>