

An Empirical Investigation of the Unified Theory of Acceptance and Use of Technology in E-Learning Adoption in Higher Education Institutions in the UAE

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ABSTRACT

E-Learning has been connected into many educational institutions to earn the advantages of the faster enhancements in technology that help in improving the learning experience and increase its effectiveness. As a result, many governments and educational institutions implement electronic learning in order to improve students' performance. Therefore, this paper aims to examine the direct effect of the main four elements of the UTAUT (i.e. performance expectancy, effort expectancy, social influence and facilitating condition) on behaviour intention to use of e-learning. The respondents of the study were Higher Colleges of Technology (HCT) Abu Dhabi (men and women campus). Retrieved questionnaires were 406 out of 490 with 82.9% respondent rate. The results show that with an overall average mean of 3.27, results shown that respondents are more inclined to use e-learning as part of their learning activities. Likewise, the results revealed that there is a strong relationship between performance expectancy, effort expectancy, social influence and facilitating condition on behavior intention to use of e-learning.

Keywords: E-learning; Unified theory of acceptance and use of technology (UTAUT); United Arab Emirates (UAE)

INTRODUCTION

More universities are now beginning to nurture the use of electronic learning across their studentship and staffs. E-Learning involves the use of electronic devices to promote online education using online platforms such as social media, including web-based training and technical delivery services. (Farah, 2011). According to Boateng *et al.* (2016) e-learning is the application of information and communication technologies (ICT) to improve access to the resources that facilitate teaching and learning. The adoption and diffusion of such technology by faculty members and use by students alike continues to be the main challenge

among higher education institutions, particularly in a developing region such as the Middle-East. The spread of e-learning in developed countries, unlike developing ones like the United Arab Emirates (UAE), is a well-researched phenomenon (Van Raaij & Schepers, 2008). Although this trend in the adoption of e-learning technologies has been felt at an international level, Middle Eastern countries such as the UAE continues to lag behind other Middle-Eastern countries despite immense procurement of the needed infrastructure and governmental intervention to adequately integrate e-learning into teaching and learning activities in higher education institutions (HEIs). This slow-paced

adoption of e-learning in higher education institutions is multifaceted especially from the perspectives of faculty members and students, and this has been hinged on issues such as language, culture, accessibility issues, support, as well as personal preferences (Raman *et al.*, 2014; Yakubu & Dasuki, 2019). Another possible exploration of the causes of this could be the fact that the pedagogical benefits of e-learning have been disputed or have not been fully embraced by students, educators as well as the university management (Boateng *et al.*, 2016; Suki & Suki, 2010; Yakubu & Dasuki, 2019).

Having outlined some of the notable benefits of e-learning, there is no doubt that e-learning is an innovative tool that should attract enormous attention from stakeholders. As developing countries like the UAE continues to improve on their infrastructure, the globalization of education will necessitate the adoption of e-learning technology for the primary goal of gaining and maximizing benefits, remaining competitive, and exposing students to some of the technologies that they might meet in the workplace. This hence requires an adapted model for e-learning adoption by considering student perspectives of the important determinants that foster e-learning adoption in HEIs (Mostafa *et al.*, 2016). Hence, the United Arab Emirates launched the transition from the country's largest national education system to e-learning, distributing approximately 14,000 electronic device computers to federal college students (Mostafa *et al.*, 2016). However, the students using smart electronic learning face issues such as interactivity and connectivity (Zahran Khaimah, & Pettaway, 2016). Recently, the solicitation of electronic technology in the ground of education has aroused great interest, although the technology is still developing (Kamali, 2013). According to Alhebsi *et al.* (2015) in the Gulf region, the UAE played a leading role in developing high-end electronic devices for students teaching (Ati & Guessoum, 2014). However, the

effectiveness of the e-learning system still not reached its expected position due to the lack of awareness on perusing students to adopt the e-learning in the education environment, and with the increasing integration of electronic learning in the community, there is a strong need for practical guidelines and recommendations to promote and provide an effective teaching and learning environment for income generation (Iran, 2011).

Nowadays the world is making speedy progress in the application of technology particularly in industrial and educational organizations. Hence, the rapid growth of information technology and the increasing dependence on it in every part of life has meant that it has become vital and important for people to gain competence in this field if they are to fully participate in their organizations. For instance, in the education sectors, the aim is to reduce the financial burden on university education by publishing textbooks electronically, free materials and improving the efficiency of the higher education performance. Therefore, most universities are nurturing using electronic learning. E-Learning refers to the use of electronic devices to promote online education using online devices such as social media platforms, including web-based training and technical delivery advice as well as sharing classes notes and conducting classes online (Smith, & Farah, 2011). In other words, e-learning is a modern method of learning across multiple situations using personal electronic devices through social and content interactions. In addition, this is a new type of distance learning approach where learners use electronic device education technology when they are convenient (Crescente and Lee, 2011; Smith, & Farah, 2011 and Crompton, 2013).

Although e-learning is highly implemented in developed countries such as the USA, UK, Singapore and many other well developed nations (Salloum & Shaalan, 2018). However, in developing countries especially the middle east countries it not

achieved its expectation level yet and it still in the early development (Suwaidi, 2019). Mostafa et al. (2016) highlighted that among the Middle East countries Oman is doing well in using e-learning platform. Oman has the highest growth rate in the region, at 19.6%, followed by Lebanon (16.0%), Turkey (12.9%), Kuwait (12.6%) and Qatar (11.3%). Meanwhile, the United Arab Emirates Higher Education sectors followed the technique of electronic learning as other Middle Eastern countries, like Oman. Nevertheless, students at the higher education in the UAE presently have low acceptance of e-learning according to Mostafa et al., (2016). Notwithstanding the UAE launched a nationwide mixed-learning program called "smart learning" in 2014, its intentions was limited to medium level rather than university level (Alhebsi, Khaimah, Pettaway, & Khaimah, 2015; Zahran et al., 2016; Alkaabi, Albion, & Childhood, 2016). Thus, this study aim to investigate the direct effect of the main four elements of the UTAUT (i.e. performance expectancy, effort expectancy, social influence and facilitating condition) on behaviour intention to use of e-learning. the respondents of the study were Higher Colleges of Technology (HCT) Abu Dhabi (men and women campus).

LITERATURE REVIEW

Concept and Definition of E-learning

Al-Homod and Shafi (2013) an innovative approach to education delivery via electronic forms of information that enhance the learner's knowledge, skills, or other performance. In addition, e-Learning as the delivery of learning or training using electronically based approaches, mainly through the Internet, intranet, extranet, or Web. "e-Learning involves the use of network technologies (such as Internet and business networks) for delivering, supporting, and assessing formal and informal instruction" (Rao, 2011). E-learning is defined in this research to mean, a web-based learning management system that provides different supplementary

educational tools including virtual school, e-tests and self-evaluation tool, e-homework assignments tool, question bank tool and lesson planning tool, for students and teachers (Tatweer 2014).

E-Learning has become a key success factor for organizations because of complexity and changing circumstances constantly require the development of new thinking Modeling and learning have become a core part of everyday work (Ruohotie 2012). Traditionally, learning in three ways: textbooks, Teachers and actual cases, but virtual tools may be used to take over at least a portion these learning functions (Tavangarian et al. 2010). In e-learning, the teacher is Instead, an online help system or performance support system is provided. Information is provided at the request of the learner or automatically (Jochems et al., 2009).

E-learning can be used to achieve learning similar to real life Simulations without time and place restrictions (such as projects or internships) (Jochems et al., 2009). Technological development has eliminated time and Space barriers, allowing knowledge to be acquired and transmitted at any time anywhere (Horton 2012). The limitations of e-learning have been so in the past Unable to create real and realistic input and output models based on technology (Jochems et al., 2009), but in recent years' technology has developed Ability to develop better tools, such as using virtual reality technology Create realistic simulations. For example, the possibility of E-Learning or moving as wireless training becomes more accessible, learning is increasing (Levis et al., 2012). E-learning has fundamentally changed the way training and learning are done (Ruohotie, 2012) considers this to be the biggest change in learning since the invention Alphabet. Consensus among practitioners (Coné & Robinson 2011; Rosset 2012).

The Unified Theory of Acceptance and Use of Technology Model (UTAUT)

Unified Theory of Acceptance and Use of Technology (UTAUT) concept attempts to clarify the intention of using information systems follow-up use behavior. The theory believes that the performance of key structures expected value, expected workload, social inspiration and favorable environments are all through to the elements of purpose and use performance of information systems (Venkatesh et.al. 2003). Venkatesh et al. (2003) proposed sex, age, involvement and age voluntary procedure mitigates the influence of the four key structures on use intentions and performance.

UTAUT is meant to be adjusted to fit the technology being queried. Therefore, a certain amount of rewording is expected. Behavioral intention is defined as the person's subjective probability that he or she will perform the behavior in question (Chang, 2013). In addition, the UTAUT model focuses on how to explain the user's intention to use an information system and subsequent behavioral intention and identifies four key drivers of the adoption of information systems which are performance expectancy, effort expectancy, social influence, and facilitating conditions. However, explaining mobile banking usage (Zhou et al., 2010) This paper takes a similar approach as past studies in adapting the UTAUT model to introduce the concept and characteristics of mobile applications and to discuss the usage of mobile applications in university libraries. According to Lu, (2014) UTAUT were tested in staged longitudinal studies and yielded strong empirical evidence of support in IS field. Due to this model's functionality, the fundamental elements have been integrated into the famous expectation confirmation theory.

The UTAUT dependency structure is behavior intent and procedure behavior. The autonomous structure is the performance expectation, hard expectation, and society Influence, promotion environments, sex, age, involvement and voluntary custom. The four main determinants of the use of intent

and behavioral intentional use are performance expectations, job expectations, social impact and convenience. The authors propose that the determinants of performance expectations, efforts to expect, social influence, and promotion conditions directly determine the intentions of individuals to use and use performance. The gender, age, involvement and voluntary use of the structure intercede their influence on personal use intentions and behavior (Venkatesh et al., 2003).

Performance expectancy

Venkatesh *et al.* (2003) defined performance expectancy as the extent to which an individual believes that using a system will help him or she attains gains in job performance. In the context of this study, performance expectancy refers to the student's belief that using e-learning will be beneficial and interesting in achieving high performance in learning.

Effort Expectancy

Venkatesh *et al.* (2003) defined effort expectancy as the "degree of ease associated with the use of a system. In the context of this study, effort expectancy refers to students' belief that using e-learning in facilitating their learning will be easy for them, i.e. it will require little effort.

Social influence

According to Venkatesh *et al.* (2003), social influence is the extent to which an individual perceives that important social groups or elements believe that such individual should use the new system. In this study, social influence refers to the influence and support from people such as friends, peers, social cycle, educators, management of universities as well as academic administrators to use e-learning as part of their learning tools.

Facilitating conditions

Defined as the degree to which an individual believes that organizational and technical infrastructure exists to support the use of a system (Venkatesh *et al.*, 2003).

Hence, in this study, facilitating conditions is regarded as the accessibility of an appropriate learning environment and infrastructure within the university that can foster the use of the technologies being considered. Such conditions include individuals' knowledge and skills and an environment that stimulates and supports students' willingness to use e-learning (Venkatesh, *et al.*, 2003).

Behavioural intention:

Defined as a person's subjective probability that he or she will perform the behaviour in question (Venkatesh *et al.*, 2003). In the context of this study, the behavioural intention was conceptualized as

the subjective probability that students will use e-learning as part of their learning.

Hypothesis development

H1: Performance expectancy has a positive effect on student's behavioural intention to use e-learning.

H2: Effort expectancy has a positive effect on student's behavioural intention to use e-learning.

H3: Social influence has a positive effect on student's behavioural intention to use e-learning.

H4: Facilitating condition has a positive effect on student's behavioural intention to use e-learning.

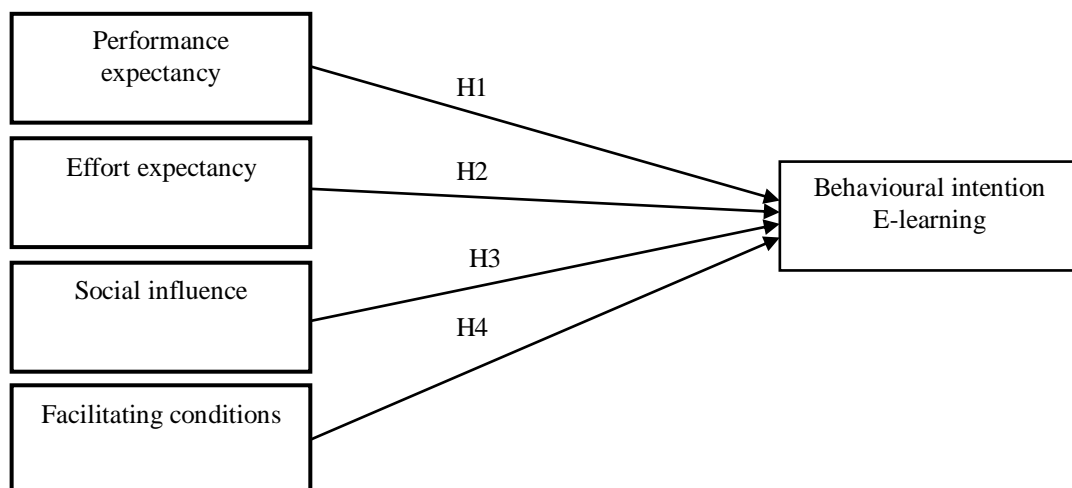


Figure 1: Framework of the study

METHODOLOGY

There are three research main research approaches used in social science research; they are quantitative, qualitative and mixed methods. This study utilized a quantitative approach; a quantitative approach is an approach that is dominant in the field of social science. It deals with the use of statistical and numerical summaries to make inference regarding the factors that influence an outcome or in understanding the best predictors of outcomes (Bryman, 2017). Likewise, the quantitative approach employs logical positivism, quantitative measures and uses experimental methods to test hypothetical generalizations. Thus, the

purpose of this study was to ascertain student's perspectives of the determinants of e-learning adoption in higher education institutions in the UAE, by examining the direct effects the four determinants of technology adoption on behavioural intention to use e-learning. Thus, the survey strategy was adopted in this study to afford the researcher the flexibility and means to obtain precise data from students regarding their perspectives on e-learning adoption in HEIs in the UAE. This survey research design also allows the researcher to make valid and useful conclusions and generalizations regarding the outcomes from the empirical investigation. Therefore,

retrieved questionnaires were 406 out of 490 with 82.9% respondent rate.

FINDINGS

Response rate

Given that a convenience sample of 490 respondents was selected for the study, a total of 490 questionnaires were also distributed to HCT students for a duration of six months. A total of 406 questionnaires were retrieved from the respondents, thus accounting for 82.9% of the response rate. Experts recommend that a response rate of up to 50% and above is considered satisfactory and useable for empirical research purposes (Fosnacht et al., 2017). Hence, the data retrieved from respondents is considered useable and useful for this study. Table 1 shows a breakdown of the response rate for the study.

Table 1: Response rate for the study

SN	Distribution	Frequency	Percentage
1	The total Number of HCT students (Abu Dhabi men and women campus)	5,382	
2.	Selected Sample	490	
3	Retrieved questionnaires	406	
4	Response rate 406/490 =		82.9%

Demographic Characteristics of Respondents

The questionnaire used for data collection in this study was divided into two main sections. Section A sought respondents' demographic information so as to accurately describe the demographic profile of respondents in this study, while Section B corresponds to scales measuring the distinct variables of the study. A convenience sample of 490 students was selected to participate in the study. However, after data collection, a response rate of 82.9 percent was reported, corresponding to a total of 406 respondents that participated in the study. Table 2 shows the distribution of respondents by gender. The results from the analysis show that 53% of respondents were males, while the 47 percent were females.

Table 1: Percentage distribution of respondents by Gender

Gender	Frequency	Percent	Valid Percent	Cumulative Percent
Male	216	53.2	53.2	53.2
Female	190	46.8	46.8	100.0
Total	406	100.0	100.0	

Similarly, the researcher also sought to determine the distribution of respondents according to their distinct nationality. Table 3 shows the distribution of respondents that according to their nationality that participated in the study. The bulk of the respondents were from the UAE, with a total of 59.4 percent of the total sample. Furthermore, respondents from the Middle East represented a total of 15.5 percent, while those from European countries accounted for 19.5 percent, respondents from African and Asian countries also accounted for 2.5 percent and 3.2 percent respectively of the total sample. Hence it can be concluded that more than half of the total number of respondents from this study were from the UAE, followed by those from European countries and the Middle East, respectively.

Table 3: Percentage distribution of respondents by Nationality

Nationality	Frequency	Percent	Valid Percent	Cumulative Percent
UAE	241	59.4	59.4	59.4
Middle East	63	15.5	15.5	74.9
European	79	19.5	19.5	94.3
African	10	2.5	2.5	96.8
Asian	13	3.2	3.2	100.0
Total	406	100.0	100.0	

The researcher also sought to describe respondents according to their age distribution. Table 4 shows the age distribution of respondents in this study. Results show that the majority of respondents in this study were aged between 18-25 years corresponding to 71.2 percent of the sample for this study, followed by those aged between 26-35 years with 25.6 percent of the total sample. Similarly, respondents aged between 36-45 years accounted for 2.2 percent of the sample in this study, while those aged from 45 years and above accounted for only 1 percent of the sample.

Table 4: Percentage distribution of respondents by Age

Age	Frequency	Percent	Valid Percent	Cumulative Percent
18 - 25	289	71.2	71.2	71.2
26 - 35	104	25.6	25.6	96.8
36 - 45	9	2.2	2.2	99.0
45 - Above	4	1.0	1.0	100.0
Total	406	100.0	100.0	

Descriptive statistics for the variables

Descriptive statistic was used to describe respondents' views regarding the measured variables in the study. The variables performance expectancy, effort expectancy, social influence and facilitating conditions are the independent variables of the study while the dependent variable of the study was the behavioural intention to use e-learning.

Table 5: Descriptive Statistics for Performance Expectancy

items	N	Minimum	Maximum	Mean	Std. Deviation
SS1	406	1	5	3.75	1.160
SS2	406	1	5	3.35	1.329
SS3	406	1	5	3.67	1.280
SS4	406	1	5	3.55	1.321
SS5	406	1	5	3.16	1.411
Aggregate				3.27	
FC1	406	1	5	3.11	1.312
FC2	406	1	5	3.47	1.356
FC3	406	1	5	3.81	1.231
FC4	406	1	5	3.52	1.266
FC5	406	1	5	3.00	1.162
FC6	406	1	5	3.37	1.301
Aggregate				3.29	
PE1	406	1	5	3.04	1.248
PE2	406	1	5	2.83	1.338
PE3	406	1	5	3.38	1.241
PE4	406	1	5	3.26	1.312
PE5	406	1	5	3.18	1.360
Aggregate				3.19	
EE1	406	1	5	3.17	1.304
EE2	406	1	5	3.23	1.320
EE3	406	1	5	3.18	1.325
EE4	406	1	5	3.13	1.429
EE5	406	1	5	3.02	1.350
Aggregate				3.30	
BIU1	406	1	5	3.51	1.245
BIU2	406	1	5	3.22	1.359
BIU3	406	1	5	3.02	1.366
BIU4	406	1	5	3.04	1.349
BIU5	406	1	5	2.98	1.323
Overall				3.27	

Table 5 shows the descriptive summary (i.e. the mean and standard deviation) for each of the measured variable. The average means for social influence as 3.27, indicating that students believe that they received support from relevant management and academic groups, peers, educators etc., on using e-learning as part of their learning process. Similarly, the average mean score for facilitating conditions is 3.29, indicating that respondents perceive that the organizational and technical infrastructure including the knowledge and skills as well as the enabling environment that supports and stimulates students' willingness to use e-learning was

provided. Furthermore, an average mean score of 3.19 for performance expectancy indicates that students have a positive view and the belief that e-learning will be beneficial and interesting to them in yielding high performances in learning. in addition, the average mean for effort expectancy is 3.30, indicating that students perceive that using e-learning in their learning will require little effort. Hence, with an average mean of 3.30, results show that respondents are more inclined to use e-learning as part of their learning activities.

Convergent validity and reliability

Reliability is the extent to which an instrument is free from random errors and the extent to which such instrument produces consistent results if repeated in other settings or context (David & Sutton, 2011; Pallant, 2011b). This implies that reliability and error are related, in the sense that the higher the error, the less reliable an instrument is and vice versa. In this study, the internal consistency reliability test and composite reliability were used to determine the reliability of the scales. Table 6 shows the composite reliability scores and Cronbach alpha values for each of the measured variables. All constructs had composite reliability ranging from 0.840 to 0.859 and Cronbach alpha values ranging from 0.774 to 0.798, respectively. According to George and Mallery (2003), scales with Cronbach's Alpha value are considered poor when the alpha value is < 0.60, fairly reliable when the alpha value is between 0.60 to 0.69, good when it falls between 0.70 to 0.79 and excellent when the value is 0.80 and above. While composite

reliability scores of 0.6 and above is considered acceptable, especially (Bagozzi & Yi, 1988; Hair et al., 2014b). Hence, given that the Cronbach alpha reliability scores and composite reliability scores exceeded the minimum threshold values as reported by experts in the field, then reliability of the scales have been established.

Table 6: Convergent Validity and Reliability

Construct	AVE	CR	Cronbach's alpha
Performance expectancy	0.546	0.855	0.788
Effort expectancy	0.552	0.859	0.795
Social influence	0.514	0.840	0.798
Facilitating conditions	0.505	0.859	0.774
Behavioural intention	0.532	0.849	0.776

In addition, Discriminant validity is established from the Fornell and Lacker Criterion since the square root of the AVEs for the constructs actual use, behavioural intention, effort expectancy, facilitating conditions, performance expectancy and social influence is higher than their respective highest correlation as shown in each column in Table 7 below.

Table 7: Discriminant validity using Fornell and Lacker Criterion

	Behavioural Intention	Effort Expectancy	Facilitating Conditions	Performance Expectancy	Social Influence
Behavioural Intention	0.730				
Effort Expectancy	0.507	0.723			
Facilitating Conditions	0.422	0.148	0.711		
Performance Expectancy	0.542	0.244	0.337	0.719	
Social Influence	0.363	0.186	0.477	0.183	0.717

Collinearity Assessment

In the initial assessment of the structural model, it is important to address lateral collinearity issues. Although, Kock and Lynn (2012) assert that with discriminant validity, the assessment of vertical collinearity would have been met, however lateral collinearity issues (i.e. the predictor criterion collinearity) may sometimes misrepresent the findings in a stealthy way since it can mask the strong causal effect in the model. Lateral collinearity typically occurs when two variables that are hypothesized to be causally related measure the same construct (Ramayah et al., 2016). Hence, the importance of collinearity assessment in a

structural model should not be underestimated. If the variables in a structural model are subjected to collinearity issues, then it means that such variables are redundant, and redundant variables ought to be identified and excluded from the structural model in order to preserve the integrity of the statistical analysis (Hair et al., 2016). The Variance Inflation Factors (VIF) was used to evaluate collinearity. Hair et al. (2016) propose that a VIF value of 5 or higher indicates a potential collinearity issue. Similarly, Diamantopoulos and Siguaw (2006) recommended more stringent criteria using VIF values moOf 3.3 and above as a possible indication of collinearity. Hence, in this study, both Hair

et al. (2016) and Diamantopoulos and Siguaw (2006) recommendations were used. All the inner VIF values for the variables, as

shown in Table 8 are less than 5 and 3.3, indicating that multicollinearity was not a concern.

Table 8: Evaluation of Collinearity based on the Variance inflation factor (VIF)

	Behavioural Intention	Effort Expectancy	Facilitating Conditions	Performance Expectancy	Social Influence
Behavioural Intention	1.217				
Effort Expectancy		1.087			
Facilitating Conditions	1.217	1.412			
Performance Expectancy		1.179			
Social Influence		1.318			

Path coefficients

In PLS-SEM, the path coefficient is also used to assess the structural model. The path coefficient or estimates from the structural model relationship have standardized values that typically ranges between -1 and +1, with path coefficient close to +1 representing a strong positive relationship while those close to -1 represents a strong negative relationship

(Hair et al., 2016). Ramayah et al. (2016) assert that the closer the values are to 0, the less significant they may be. Hence, the path coefficients were determined by using bootstrapping of 500 subsamples to ascertain the t-values for 0.05 significance level. Table 9 shows the results of the bootstrapping significance analysis for the structural path model coefficients, t-statistics and p-values.

Table 9: Significance test for the Structural model path coefficient, t-value and p-values

Paths	Std β	Std Error	t Statistic	p Value	Decision
Effort Expectancy -> Behavioural Intention use of E-learning	0.365	0.036	10.131	0.000	Supported
Facilitating Conditions -> Behavioural Intention use of E-learning	0.176	0.047	3.752	0.000	Supported
Performance Expectancy -> Behavioural Intention use of E-learning	0.367	0.046	7.943	0.000	Supported
Social Influence -> Behavioural Intention use of E-learning	0.145	0.037	3.911	0.000	Supported

From Table 9, it can be seen that there are 5 direct path coefficients of which all were significant with t-values exceeding the t-critical value of 1.96 and p-values value less than 0.05. All of the direct effect had a strong positive relationship on behaviour intention to use e-learning.

Coefficient of Determination (R²)

The adjusted coefficient of determination (R²) was used to estimate the model's predictive power. According to Hair et al. (2016), R² represents the combined effects of the exogenous variables (i.e. the independent constructs within the model), on the endogenous variables (i.e. the dependent constructs within the model) (Hair et al., 2016). R² is calculated as the squared correlation between the actual and predicted values for a given endogenous construct and ranges from 0 to 1, with higher levels of R² indicating greater predictive accuracy. Research literature has

shown that there is no general consensus on the acceptable value of the coefficient of determination R². It has been argued that an R² may be considered high in one field and considered weak in another field. For instance, Hair et al. (2014b) stressed that in the field of consumer behaviour, an R² of 0.2 is considered high, while in other fields, an R² value of 0.25 is considered weak, 0.5 as moderate and 0.75 and above as substantial.

Table.10: Adjusted coefficient of determination (R²)

Endogenous constructs	Exogenous Constructs	Adjusted R ²
Behavioural Intention	Performance expectancy	0.505
	Effort expectancy	
	Social influence	
	Facilitating conditions	

Table 10 shows the adjusted R² of Actual use of e-learning and Behavioural intention. Actual use has an R² of 0.507, indicating that about 50.7 % of the variance in the actual use of e-learning is explained by

behavioural intention. Behavioural intention, on the other hand, has an R^2 of 0.505 indicating that about 50.5 percent of the variance in Behavioural intention is explained by the exogenous constructs performance expectancy, effort expectancy, social influence and facilitating conditions.

DISCUSSION AND CONCLUSION

The researcher first attempts to investigate the level of each elements of the UTAUT (performance expectancy, effort expectancy social influence and facilitating condition) toward using e-learning. The results show that the cumulative mean score of respondents' performance expectancy towards e-learning is 3.19, indicating a mean score above the average mean on a 5-point Likert scale. Venkatesh *et al.* (2003) defined performance expectancy as the extent to which an individual believes that using a system will help him or her attains gains in job performance. In the context of this study, performance expectancy refers to the student's belief that using e-learning will be beneficial and interesting in achieving high performance in learning. Thus, an average mean score of 3.19 for performance expectancy indicates that students have a positive view and the belief that e-learning will be beneficial and interesting to them in yielding high performances in learning. likewise, the mean and standard deviation of respondents' effort expectancy towards e-learning showed. Venkatesh *et al.* (2003) defined effort expectancy as the "degree of ease associated with the use of a system. In the context of this study, effort expectancy refers to students' belief that using e-learning in facilitating their learning will be easy for them, i.e. it will require little effort. Results show that the average mean for effort expectancy is 3.30, indicating that students perceive that using e-learning in their learning will require little effort.

Additionally, facilitating conditions is defined as the degree to which an individual believes that organizational and technical infrastructure exists to support the use of a system (Venkatesh *et al.*, 2003).

Hence, in this study, facilitating conditions is regarded as the accessibility of an appropriate learning environment and infrastructure within the university that can foster the use of the technologies being considered. Such conditions include individuals' knowledge and skills and an environment that stimulates and supports students' willingness to use e-learning. it also shows that the average mean score for facilitating conditions is 3.29, indicating that respondents perceive that the organizational and technical infrastructure including the knowledge and skills as well as the enabling environment that supports and stimulates students' willingness to use e-learning was provided. Hence, social influence, according to Venkatesh *et al.* (2003) is the extent to which an individual perceives that important social groups or elements believe that such individual should use the new system. In this study, social influence refers to the influence and support from people such as friends, peers, social cycle, educators, management of universities as well as academic administrators to use e-learning as part of their learning tools. It shows that the average means for social influence as 3.27, indicating that students believe that they received support from relevant management and academic groups, peers, educators etc., on using e-learning as part of their learning process.

Furthermore, the mean and standard deviation of students' behavioural intention towards e-learning. An average mean score of 3.30 was recorded for student's behavioural intention towards e-learning. Behavioural intention, according to Venkatesh *et al.* (2003), is defined as a person's subjective probability that he or she will perform the behaviour in question. In the context of this study, behavioural intention was conceptualized as the subjective probability that students will use e-learning as part of their learning. Hence, with an average mean of 3.30, results show that respondents are more inclined to use e-learning as part of their learning activities.

Researcher also sought to determine the effect of performance expectancy, effort expectancy, social influence, and facilitating condition on HCT student's behavioural intention to use e-learning. Thus, findings from the analysis support all the four hypothesis. Thus, it is concluded that performance expectancy has a positive effect on student's behavioural intention to use e-learning. Similarly, it was also concluded that effort expectancy has a positive effect on student's behavioural intention to use e-learning. Furthermore, findings from the analysis support the hypothesis; it was hence concluded that social influence has a positive effect on student's behavioural intention to use e-learning. The study also examined the effect of facilitating conditions on student's behavioural intentions to use e-learning. Findings reveal that facilitating conditions positively influences student's behavioural intention to use e-learning. These results, in line with the finding of Salloum & Shaalan, (2018) who studied on the factors affecting students' acceptance of e-learning system in Higher Education used four elements from UTAUT model. They (Salloum & Shaalan) concluded that all important factors of behavioral intention to use e-learning system were reportedly found as the social influence, performance expectancy and facilitating conditions of learning. However, a significant impact on students' intention towards e-learning system was not suggested by the effort expectancy.

Contributions

This study was driven by the need to address the issues surrounding the adoption of e-learning by students in UAE HEIs. The literature of e-learning is still an emerging one, and prior studies have investigated issues relating to e-learning adoption in general business setting as well in a western and developed country context, but there is need to focus on aspects such as higher education and in a developing nation context. Hence, the overall contribution of this study is to provide a clearer

understanding of the determinants that influence the acceptance of e-learning technology from a student's perspective faculty in selected HEIs in the UAE. The findings will be an addendum to the body of literature by reporting the direct effects of the determinants of e-learning adoption and behavior intention to use of the technology as well as provide a strong foundation that can be used to develop strategies for management and other stakeholders who are interested in successful implementation of e-learning that students can easily adopt and use. Hence, this research will also be of significance to the field of information systems and educational management as insights into the direct effect of the determinants e-learning adoption and the behavioural intention to use e-learning. This will enable the development of an adapted model of acceptance and use of technology, which in turn can be used to better enhance the deployment and implementation of e-learning systems across HEIs in the UAE.

The study will also be beneficial to higher education stakeholders, university management and faculty members in providing the feedback needed to design efficient e-learning systems that curb the inhibiting role of language, culture, improperly designed user interfaces as well as accessibility issues. With this, effective e-learning systems can be created to allow student to tap into the enormous potentials and benefits it has to offer. It can provide university management with the necessary insights needed to formulate e-learning policies and standards for more efficient implementation. On the part of faculty members, findings from the study can be used to plan for effective integration of e-learning and contemporary teaching and learning, taking note of the major determinants of e-learning adoption from student's perspective.

Limitations

Findings from this study were established using a quantitative research approach, which uses numerical data to

make an inference from a sample to a population. While quantitative approaches are in themselves important research methodologies, they are limited in terms of providing deeper insights and understanding regarding the variables studied. Therefore, future studies can use mixed-methodology approaches in weighing the perceptions, ideas, and views of students and faculty members alike in understating the factors that affect e-learning adoption. The instruments used in the study were self-reported instruments that measured students' perceptions of the variables of the study. self-reported instruments could be argued to be proxy measures of perception and may introduce threats to the internal validity of the study. Perhaps a cross-validated instrument could be used in future studies where two categories of the respondent are surveyed to provided perceptions regarding the variables measured. Another approach could be the use of experimental approaches to study firsthand the performance of participants regarding the measured variables.

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