FACTORS AND CHALLENGES THAT INFLUENCE HIGHER EDUCATION STUDENTS' ACCEPTANCE OF E-LEARNING SYSTEM AFTER CORONAVIRUS PANDEMIC

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ABSTRACT

As the coronavirus pandemic continues to spread, and the world is now in a state of emergency, universities around the world are reacting with different and alternative ways of learning such as e-learning systems applications to slow the spread of this disease. However, the successful implementation of e-learning in higher education will be based on users' acceptance of this technology and on understanding the main challenges that face the current e-learning systems. Thus, the purpose of this paper is to study the factors that influence university students' intentions to accept e-learning after coronavirus pandemic where the e-learning became an obligatory system and to investigate the critical challenges of it. Based on the unified theory of acceptance and use of technology (UTAUT) this study proposes a model to identify the factors that influence the acceptance of web-based learning platform, Moodle in Faculty of Economics and Political Sciences, after coronavirus pandemic. Partial Least Square-Structural Equation Modelling (PLS-SEM) was used to analyze the data collected from 346 students' participants. The results indicated that behavioral intention and facilitating conditions have direct impacts on use behavior while performance expectancy, effort expectancy, social influence, price value, facilitating conditions and motivation to use were all significant factors that affect behavioral intention to use e-learning. In addition, the results indicated that there are many main challenges that obstruct the usage of e-learning system not related only to the technological challenges, but also culture challenges which must be taken under consideration. Overall, the respondents expressed unfavorable opinion concerning e-learning acceptance during the lockdown situation and its impacts on students' academic performance, they accept using the technology but as a complementary part in the education process, not as the alternative of the face to face educational process. It is believed that the findings will be useful for understanding challenges better and to help the universities policy makers, designers and developers to make superior decisions based on them as soon as possible.

Keywords: *E-learning, unified theory of acceptance and use of technology (UTAUT), behavioral intention, Challenges of E-learning, Coronavirus Pandemic*

1. INTRODUCTION

The sudden closure of university campuses across the world has required the virtual delivery of very large numbers of courses. In fact, e-learning tools are playing a vital role during this pandemic. E-learning is motivated by several benefits such as accessibility, flexibility, and management of course delivery and educational materials. However, the universities need to evaluate the success of e-learning system.

Egypt's Minister of Communications and Information Technology Amr Talaat said that during a phone interview with the "Ala Massoulity" (By My Responsibility, on 21st April 2020) TV show that Internet usage among citizens has increased due to the coronavirus. He noted that his ministry is providing electronic service packages online and is working to develop digitizing more Internet government services before the coronavirus pandemic ends. Talaat said that the websites for the ministries of education and higher education are now freely accessible and will not be counted towards home Internet package consumption. Educational content will be uploaded onto the sites as platforms

will be provided through which the ministries will host content that students can watch interactively with a teacher.

According to National Telecommunications Regulatory Authority (NTRA) on 21st April 2020), the rate of Internet using increased 131% in the second week of April compared to the rate in the second week of March. the rate of browsing the educational sites of the Ministry of Education and Technical Education, and the Ministry of Higher Education and Scientific Research increased 376.4% in the second week of April compared to the browsing rate in the second week of March.

The NTRA report found that the increase in usage of Internet has created some unprecedented challenges for operators and regulatory authorities. Before COVID-19, The peek Internet use was between 5PM and 12AM, now with students and employees using the Internet around the clock, prime time for the Internet in Egypt now runs 12PM to 3AM. 15 hours of peek Internet usage compared to the normal seven.

The conceptual framework of UTAUT was proposed as the foundation for this research. The study involved examining direct determinants; performance expectancy, effort expectancy, social influence, price value, facilitating conditions and motivations to use. Many studies of acceptance e-learning system can be found in developed country and as an optional system. This research depends case on developing country as the system became obligatory as a result of coronavirus spread.

The government financial support was strong to promote e-learning during the crisis. Therefore, the incorporation of technology acceptance model variables such as UTAUT in Egypt context is expected to reveal the drivers of student adoption of the e-learning system.

Previously most studies in the field of technology acceptance research have focused on developed countries [1]. Recently many developing and Arab countries focus on technology acceptance research field, for example; [2],[3] , [4], [5], [6], [7] and [8]

Today with coronavirus pandemic the situation is different, transformation into e-learning become important to keep social distance.

The objective of this study was to investigate the factors influencing university students' acceptance

of Moodle and the main obstacles and problems they face when e-learning becomes an obligatory way for learning and pass the academic year.

This paper is divided into 7 sections. After this introduction, Section 2 includes a brief literature review. Section 3 introduces the research model and hypotheses. Section 4 presents the methodology adopted in this research. Section 5 presents the data analysis and results. Section 6 discusses the research. Finally, Section 7 concludes and discusses limitations and future research.

2. LITERATURE REVIEW

Understanding individual acceptance and use of information technology is one of the most developed issues of information. There have been several theoretical models, primarily developed from theories in psychology and sociology [9].

The UTAUT model, which (Venkatesh et al., 2003) developed, is the result of a combination of eight information technology acceptance models. These models include the theory of reasoned action (TRA), technology acceptance model (TAM), the theory of planned behavior (TPB), the motivational model (MM), the model of PC utilization (MPCU), the innovation diffusion theory (ID), the combined TPB/TAM, and social cognitive theory (SCT). Considering the previous models, the UTAUT model was more appropriate in the context of the current research study. This is because it is a comprehensive model that combines all previous acceptance models. In addition, the UTAUT was proposed to explain technology acceptance from an organizational perspective, which is what was needed in this study. In brief, UTAUT has purified the critical factors and possibilities related to the prediction of behavioral intention to use a technology and technology. Furthermore, the UTAUT has been used to examine the acceptance of e-learning systems in many studies as follows.

2.1 Review of the UTAUT Model and its Implementation in E-Learning Acceptance

The success of any information system depends on the usage of the system by users. Thus, in the context of e-learning system, student's acceptance of e-learning is considered as one of the main criteria for the success e-learning system. Several studies in the literature have addressed issues related to e-learning adoption in many countries all over the world. Several models have been developed to examine individuals' acceptance and intention to adopt new technologies in the world of information systems. Davis (1989) tried to determine what

reasons people to accept or reject information technology [10].

UTAUT was proposed by Venkatesh et al. (2003) and attempts to mix and empirically compare elements from different technology acceptance models in technology acceptance. UTAUT has four key constructs (i.e., performance expectancy, effort expectancy, social influence, and facilitating conditions) that influence behavioral intention to use technology [9].

Venkatesh et al. extends the UTAUT to study acceptance and use of technology in a consumer context by UTAUT2. UTAUT2 incorporates three constructs into UTAUT; hedonic motivation, price value, and habit [11].

Performance expectancy is defined as the degree to which an individual believes that using the system will help him to reach improvements in job performance.

Effort expectancy is defined as the degree of ease related with the use of the system.

Social influence is defined as the degree to which an individual perceives that important others believe he should use the new system.

Facilitating conditions are defined as the degree to which an individual believes that an organizational and technical infrastructure exists to support use of the system.

Hedonic motivation is defined as the enjoyable or pleasure derived from using a technology, and it has been shown to play an important role in determining technology acceptance and use.

Price value is defined as person reasonable tradeoff between the perceived benefits of the applications and the financial cost for using them. The price value is positive when the benefits of using a technology are perceived to be greater than the monetary cost and such price value has a positive impact on intention.

Habit has been defined as the extent to which people tend to perform behaviors automatically because of learning [11]

Also, according to UTAUT model there were moderating variables (gender, age, experience, and voluntariness of use) which are used in understanding the characteristics of different user groups.

Experience reflects an opportunity to use a target technology and is typically operationalized as the passage of time from the initial use of a technology by an individual. [11]

Several studies addressed the factors that affect students' acceptance of e-learning.

Table I provides some studies on e-learning acceptance using UTAUT. And table II provides some studies on e-learning acceptance in Egypt. The results indicated that performance expectancy, effort expectancy, social influence with other factors according to each model were all significant determinants of behavioral intention of e-learning acceptance. One other important point that computer skills training was very important factor that affect students' acceptance of e-learning

Table I: Studies on E-Learning Acceptance

Author	Application	Samples	Results
Fatema Akbar 2013 [3]	e-learning	373 university students	The UTAUT model was found to be applicable to some extent in the educational setting. The study provided recommendations to help prepare the appropriate environment and training before a new technology is introduced for students
Paul Juinn Bing Tan 2013 [12]	English e-learning websites	176 Taiwanese college students	The Study suggested that web designers must improve knowledge management functions and make user interfaces easier to operate. Furthermore, students should be notified that the websites can be supported by facilitating conditions.
Echeng, Usoro 2014 [13]	Conceptual model	317 from Nigeria and 279 from Scotland	This research examined user acceptance and adoption of Web 2.0 technology tools for learning among populations in Nigeria and Scotland. It aimed to give insight into the very low use of these tools and to offer key related factors that should be in mind by policy makers and system developers who aim to encourage increased use of

			these tools in teaching and learning.
Dima and et al. [14]	Animation usage on e-learning	370	The research extended UTAUT2 in the field of animation usage by integrating the constructs of learning value and students' innovativeness to the model.
Eli Fianu et al. 2018 [6]	MOOC	204 Ghanaian Universities Students	Findings of the study show that MOOC usage intention is influenced by computer self-efficacy, performance expectancy, and system quality. Computer skills training should also be part of the educational curriculum at all levels.
Ahmed Alshehri et al. 2019 [8]	Blackboard system	171 Saudi Arabia Students	The empirical results found that technical support is fundamental in determining the acceptance and use of e-learning systems
Manaf Al et al. 2020[15]	Distance Learning	587 Jordon Students	This study results confirmed the significant effects of subjective norm on e-learning acceptance and intention to use.

Table II: Studies on E-Learning Acceptance in Egypt

Author	Application		Sample	Results
Taher Farahat 2012 [2]	TAM	Online learning	153	The results expose that students' perception of ease of use, usefulness, attitudes towards online learning, and the social influence of students' group were identified as significant determinants of students' intention to practice online learning.
Abou El-Seoud 2013 [4]		Moodle	85	The use of web-based education through cloud computing is presented. The evaluation showed that it has strongly contributed to the effectiveness of e-

			learning by improving the quality of students' knowledge.
Ali and Arshad 2016 [5]	TAUT	Conceptual Model	The research extended UTAUT with three new factors mobility, interactivity, and enjoyment

2.2 Review studies on E-leaning challenges

E-learning usage and adoption among users is a challenging issue for many universities, both in developed and developing countries, but it is expected to be less of a concern in developed countries over the willingness of their students to accept and use the e-learning system [16] indicated that the challenges of accepting e-learning system in developing countries due to the digital divide with the developing countries.

According to the literature review these challenges could be classified into 3 types (1) technological challenges, (2) cultural challenges and (3) course challenges. And these challenges are very different from one country to another country [17][18] [19] [20] [21] [22] [23]. Table III provides some studies on e-learning challenge

Table III: Previous studies on E-Learning Challenges

Challenge	Description	literature
Technological Challenges	- Students facing technological difficulty in using e-learning system - Slow speed of Internet and high Internet traffic during e-learning experience	[24][23] [25]
Culture Challenges	- Students lacking awareness of Internet skills - ICT literacy and skills of e-learning users	[26][27] [23] [25]
Course Challenges	- Course content having less quality in terms of interactivity	[25] [24][28]

By focusing on higher education students in Egypt, and by using the UTAUT model with elimination the moderators, this study explored an area where no exhaustive studies exist and where exploration is still needed (influence of coronavirus pandemic). In addition, this research study adds to studies about the applicability of the UTAUT in the education environment and explored the challenges

3. RESEARCH MODEL AND HYPOTHESES

The e-learning system becomes an obligatory fact around the world after coronavirus pandemic. Since mid-March, schools and universities in Egypt are closed. Thousands of lecturers and millions of students suddenly find themselves in a challenging situation in order to avoid gatherings among students. But they must communicate, lecturers miss the students' feedback, they miss their questions and comments which show what is not understood yet, they miss discussing an example or doing a unplanned brainstorming with them. In the end of March the lecturers began to communicate with the students through different Internet applications and everybody is suddenly talking about the advantages and disadvantages of Zoom, Skype, Moodle, Edmodo, Google Classroom and …..

It June, Egyptian President Abdel Fattah El Sisi has directed the government to develop and expand the system of e-learning as part of the state's strategy to deal with the next academic years. Minister of Higher Education and Scientific Research has suggested implementing what is known as hybrid education or courses, which merge between traditional classrooms and online learning activities.

In this paper, the UTAUT is used as a base framework for examining factors that influence the acceptance of web-based learning platform, Moodle in Faculty of Economics and Political Sciences, after coronavirus pandemic. The UTAUT model examines the technology acceptance factors, which are as follows: performance expectancy, effort expectancy, social influence, price value, facilitating conditions and motivation to use

Hypotheses

Performance Expectancy (PE)

Applying performance expectancy to an e-learning context proposes that students will find e-learning useful because they learn at their convenience and quickly. It will also improve their learning productivity [29]. This research attempted to study which performance expectancy of Moodle will influence student behavioral intention to use Moodle. This led to testing the following hypothesis:

H1: Performance expectancy will have a positive effect on behavioral intention to use Moodle.

Effort Expectancy (EE)

Based on UTAUT, it was expected that students' acceptance of a Moodle system would depend on whether it is easy to use. Therefore, this led to testing the following hypothesis:

H2: Effort expectancy will have a positive effect on behavioral intention to use Moodle.

Social Influence (SI)

Previous studies indicate that social influence is a direct determinant of an individual's behavioral intention to use new technology [30], [31], [9].

Social influence is an important hypothesis to encourage students to adapt new technologies in their learning setting. This led to testing the following hypothesis:

H3: Social Influence has a positive effect on behavioral intention to use Moodle.

Price Value (PV)

The cost and pricing structure may have a significant impact on students' technology use. This led to testing the following hypothesis:

H4: Price Value has a positive effect on behavioral intention to use Moodle.

Facilitating Conditions (FC)

Facilitating Conditions is the available organizational support towards the system, including training and development, available resources and ICT infrastructure [9]. In this context, it is the individual perception of how well the university provides support in using the e-learning system and government in support home Internet infrastructure.

It measures whether individuals have the personal knowledge and institutional resources available to use the system. Although the original UTAUT shows the effect of FC on actual usage only, other meta-analysis studies of UTAUT revealed that FC also has a significant influence on behavioral intention [32], [33] and [34]. It is believed that high performance outcomes from both students and educators result from university support for the technology. Based on the literature, the following hypotheses are proposed:

H5a: Facilitating condition will have a significant influence on students' behavioral intention to use Moodle.

H5b: Facilitating condition will have a significant influence on students' actual use of Moodle.

Motivation to use (MU)

Several studies proposed the positive relation between motivation construct and behavioral intention to use new technology [35], [14]. Based on the literature, the following hypothesis is proposed:

H6: Motivation to use will have a significant influence on students' behavioral intention to use Moodle.

Behavioral Intention (BI)

BI is proposed to be a direct antecedent of the actual use. In fact, behavioral intention plays a central role in predicting an individual's actual use of an information system [10]. There is a large volume of published studies confirming the significant positive relationship between BI and usage behaviour [10]; [36]; [9]; [11]. Based on the findings in the literature, the following hypothesis is proposed:

H7: Behavioral Intention will have a significant influence on students' Moodle usage behaviour.
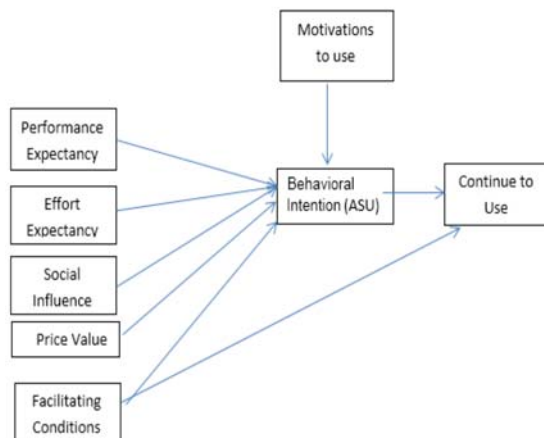
4. CONCEPTUAL MODEL AND METHODOLOGY

Fig. 1. Conceptual Model

Conceptual model of the study is shown in Fig.1.

4.1 Research Instrument Development

The measurement items of this study were adopted from well-established prior research [11] .

The questionnaire is composed of two parts. The first part is about demographic information and the second part is composed of 30 measurement items measuring eight constructs of model under study. Measurement items of this study have been listed in Appendix-A.

4.2 Data Collection and Sample

The target sample of the study are the university students of Faculty of Economics and Political Sciences, Cairo University. According to [37] and by following the rule of 15 cases per predictor as suggested to determine the minimum sample size, we needed at least 135 samples. Another way to identify the minimum sample size is based on the ratio of the sample size to the number of items in a model, the ratio should be at least 5:1 [38], which means we needed at least 150 samples. A structured questionnaire was developed using Google form. Pre-testing was conducted to ensure the clarity and understandability of the survey. To prevent multiple responses, the questionnaire was sent through the official electronic mail of the faculty of Economic and Political Science to undergraduate students' database. The questionnaire had closed questions: Section 1 requested sociodemographic information, and Section 2 contained 30 measurement items that tested the factors affecting the students' behavior intention of Moodle using a 5-point Likert scale varying from strongly disagree (1) to strongly agree (5). A research survey was prepared in the English language and translated into Arabic. A cover letter was added to each survey to ensure the confidentiality of the responses. The survey was sent in May 2020, and it was left open for four months. In total, 326 respondents answered the questionnaire from a total of 2950. The response rate is 11.5 per cent. The author tried to improve the response rate by following several methods suggested by [39] starting the survey with its purpose, and emphasizing the privacy of the respondents. Also, several gentle reminders were sent.

The author believes that this response rate is very low, during this time the learning is obligatory online, and most people stay at home as a result of coronavirus pandemic.

As most students fall within the same age and a high percentage of them are females (according to our case study) we did not test for the effect of age and gender. Habit and experience conditions were not investigated in the study since only 9% of the sample used e-learning website/application before the coronavirus pandemic. Also, we didn't investigate the acceptance of e-learning in a

voluntary usage context because the system became obligatory.

5. DATA ANALYSIS AND RESULTS

5.1 Demographics and descriptive statistics

The sample characteristics are presented in table IV, which shows that the respondents include (24.8%) males and (75.2%) females, which are the same percentages of enrolled students in this faculty. Around 60% of them were Arabic section and coming from governmental high school, while (40%) were English and French sections from experimental, private and international schools.

Table IV. Demographic Information of the Sample

Characteristics	Percent
Gender	
Male	24.8
Female	75.2
Section	
Arabic	60.9
English	37.2
French	1.8
Secondary School	
High school (Government)	61
Experimental	9.8
High School (Private)/ Arabic	11.3
High School (Private)/ English	10.1
International	4
Foreigners	4

Around eighty-four percent 83.5% of the respondents used the Internet in general for more than three years, while 16.4% only used the Internet from one to three years. 62.5% of the respondents spent more than three hours a day using the Internet before Corona pandemic and 29.6% used the Internet from one to three hours a day. In addition, 73.5% of the respondents stated that they have already used the Internet to study before the pandemic.

During the pandemic the lectures tried to use different programs/websites to contact the students. The percentages of using are as following figure
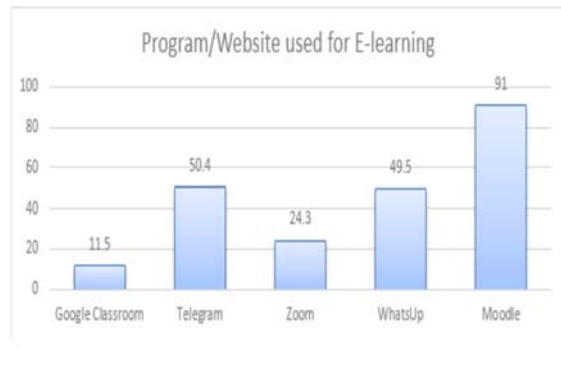

Fig. 2: Program/Website used for E-learning

Moodle is the standard web-based learning system in Faculty of Economic and political sciences, and it has already used before the pandemic and still the main system used during the pandemic. But after coronavirus pandemic only 45% of students stated that e-learning system is a good solution for this pandemic. The other prefer to use Moodle as a complementary part in the education process, not as the alternative of the face to face educational process.

Sixty-seven percent (67%) and (30%) of student respondents interacted with lectures and peers through Moodle, respectively. Over 90% of the respondents had good experiences in using a laptop and surfing the web. Forty-seven percent (47%) of the respondents' access Moodle through the laptop and (48.4%) through the mobile. The challenge problems percentages using e-learning are as follow

Table V: E-Learning Challenges

Challenge	Problem	Percent
Technological Challenges	Bad Internet Service	78.2
	Bad Internet infrastructure	61.3
	Losing connection and reconnecting again in the e-learning system	41.4
	Cost of the Internet	26.1
Culture Challenges	Insufficient ICT skills	27
	Insufficient Internet skills	23
Course Challenges	Number of lectures is very huge	79.8
	The lack of a schedule regulating the functional timings for e-learning	64.7

Based on the results, the respondents stated that the most challenges and problems that affect the usage of e-learning system during the pandemic and should universities take them into the future were: (1) course problems, (2) technological problems and

(3) culture problems. Slow Internet connections or limited access from homes especial for country areas can contribute to e-learning challenges. The students complained about Internet connection, as the network in Egypt is overloaded. During lessons, 41.4 % of students face connection issues, which make them miss some parts of the lecture. Changing the system suddenly, from face to face in the faculty to online learning, without arranging time for the lectures upload was a big challenge for the student this semester. Around 25% have insufficient ICT and Internet skills.

5.2 Measurement Model Analysis

Partial Least Square-Structural Equation Modelling (PLS-SEM) method is used to analyze the model. PLS is a widespread method used to test theory not only studies the properties of the measurement scale but it helps in evaluating the relationships amongst the constructs [40]. It allows estimating complex cause-effect relationship models with latent variables. From its indicator reliability is obtained from squaring outer loadings of reflective constructs, and once used together, they give a necessary and sufficient measure of the measurement model, clearly describing the relationship between the latent variables and their measures. SEM allows researchers to estimate causal relationships among multiple independent and dependent constructs [41]. SmartPLS 3 was used as the main tool to analyze data. A partial least square structural equation modeling approach using SmartPLS 3 is employed to analyze the collected data through two stages. Step 1: Measurement model to assess the reliability and validity of the theoretical constructs. Step 2: Structural model to represent the (paths) associations between the constructs.

Reliability describes the extent to which the collected data yield consistent findings. A reliable study will return the same results when another researcher replicates it. Validity assures the credibility of a research study.

To assess the measurement model characteristics of the eight reflective constructs, we carried out the tests suggested by [42]. For this purpose, Internal Consistency Reliability (Cronback's Alpha α > 0.6 and Composite Reliability CR > 0.7), Indicator Reliability (>=0.7), Convergent Validity (Average variance extracted (AVE) >0.5) and Discriminant Validity (Fornell-Lacker's Criterion) were assessed. Results of these tests are listed in Tables VI., VII. and VIII.

Contents of Table VI. show that the values of Cronback's alpha, composite reliability and indicator's reliability are more than the threshold values that show the internal consistency reliability of the measurement items.

Table VII. provides values of AVE greater than 0.5 that show convergent validity. It is evident from Table 8. that the diagonal elements (the square root of AVE) for each construct is more than its highest correlation with other constructs that show discriminant validity among the constructs.

Table VI. Reliability Tests Summary

Construct	Cronback's alpha	Composite Reliability	Items	Indicators' reliability
	>0.6	>0.7		>=0.7
Performance Expectancy	0.805	0.872	PE1 PE2 PE3 PE4	0.833 0.746 0.714 0.874
Effort Expectancy	0.825	0.915	EE1 EE2 EE3 EE4	0.799 0.850 0.773 0.818
Social Influence	0.778	0.870	SI1 SI2 SI3	0.899 0.870 0.717
Price Value	0.757	0.860	PV1 PV2 PV3	0.841 0.837 0.782
Facilitating Conditions	0.798	0.867	FC1 FC2 FC3 FC4	.0.817 0.817 0.794 0.720
Motivations to Use	0.821	0.881	MU1 MU2 MU3 MU4	0.843 0.886 0.766 0.721
Behavioral Intention	0.876	0.924	BI1 BI2 BI3 BI4	0.824 0.915 0.868 0.808
Use Behavior	0.867	0.915	UB1 UB2 UB3 UB4	0.851 0.885 0.856 0.785

Table VII. Convergent Validity

Construct	AVE>0.5	Construct	AVE>0.5
Performance Expectancy	0.631	Facilitating Conditions	0.621
Effort Expectancy	0.656	Motivations to Use	0.651
Social Influence	0.693	Behavioral Intention	0.730
Price Value	0.673	Use Behavior	0.714

Table VIII. Discriminant Validity

	PE	EE	SI	PV	FC	MU	BI	UB
PE	.794							
EE	.367	.810						
SI	.277	.720	.832					
PV	.120	.564	.731	.820				
FC	.103	.664	.43	.611	.788			
MU	.558	.670	.403	.006	.036	.807		
BI	.213	.503	.627	.778	.763	.113	.854	
UB	.723	.366	.267	.180	.107	.698	.197	.845

Table IX. Summary of Structural Model Path Coefficients

Hyp #	Path	Path Coefficient	Standard Deviation	T Statistics	P Values	Sig. Level
H1	PE -> BI	0.225	0.074	3.040	0.000	***
H2	EE -> BI	0.128	0.051	2.509	0.010	**
H3	SI -> BI	0.324	0.116	2.793	0.005	***
H4	PV -> BI	0.349	0.101	3.455	0.001	***
H5	FC -> BI	0.172	0.078	2.205	0.027	**
H6	FC -> UB	0.321	0.088	3.647	0.000	***
H7	MU -> BI	0.096	0.051	1.88	0.070	*
H8	BI -> UB	0.565	0.087	6.49	0.000	***

Note: *p < 0.1; **p < 0.05; ***p < 0.01

5.3 Structural Model Analysis

5.3.1 Coefficient of Determination (R^2)

Coefficient of Determination (R^2) is calculated to evaluate the predictive power of the model. Figure 3. shows the results of structural model analysis. Each of the endogenous construct namely BI (80%) and UB (66%) describes the acceptable level (>50%) of R^2. Thus, the proposed model has moderate level predictive power to explain the students' acceptance of e-learning.

5.3.2 Hypotheses Testing

For hypothesis testing, bootstrapping procedure was used with 5000 bootstrap subsamples. Path coefficients with the relevant t and p values have been considered for evaluation of results. Table IX. lists results of hypotheses testing.

All hypotheses of this study have been supported. BI (β=0.565, p<0.01) has stronger effect on UB than FC (β=0.321, p<0.01). The impacts of PE, EE, SI, PV, FC and MU on BI have also been confirmed (H1, H2, H3, H4, H5, H7).
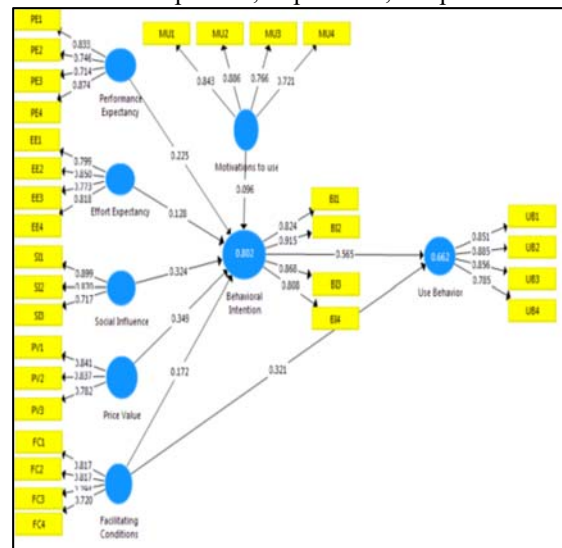

Fig. 3. SEM Analysis of Conceptual Model

6. DISCUSSION

This study aims to identify the factors that affect higher education student's intention to web-based learning platform, Moodle after Coronavirus Pandemic, accord to the unified theory of acceptance and use of technology. The results listed above in Table IX. support the hypothesized relationships in

the proposed model which is consistent with the prior research. In addition, this study provides some important practical insights into the challenges facing the usage of e-learning system, which are not only limited to the infrastructure issues as mentioned in the previous studies [25] [24] [16] but also include other such as e-learning system course issues, where there is completely shift from traditional face to face educational system to online e-learning system . Therefore, the findings of this study offer useful suggestions for policymakers, designers, developers and researchers, which will enable them to get better acquainted with the key aspects of the e-learning system adoption successfully hence the e-learning system became an obligatory during this pandemic .

7. CONCLUSION, LIMITATIONS AND FUTURE RESEARCH

The coronavirus pandemic is a deep and sudden shock, but it is improbable to be the last. Governments should not lose sight of the long game. This paper investigates factors and challenges that influence the e-learning system usage during Corona pandemic between a sample of higher education students. The findings of this research are based on empirical evidence, which identifies the factors that support the usage adoption of e-learning system, and endorses other researchers' understanding and analysis of the challenges facing the current e-learning system. The study has also showed the applicability of UTAUT in explaining students' acceptance of Moodle but as a complementary part in the educational system not as the only obligatory learning system, and recommends an additional class of computer literacy which may be a good idea for face insufficient the ICT and the Internet skills. The universities policy makers, designers and developers in these universities can benefit from the findings in this study, which provide the real picture about the current e-learning system, and could be taken as a guideline to improve the usage of e-learning systems among students.

There are limitations with this research that provide opportunities for future research. First one concerning the sample, the data for model testing was collected from one only public faculty, future studies can test the model by collecting sample from different faculties. The difference between the empirical faculties and theoretical faculties in shifting toward e-learning. Private universities and public universities can be tested. Post graduate students' acceptance. The second is that the moderating effects of age, gender and experience can also be tested. Furthermore, considering Egypt's

large geographical area, it might also be interesting to assess whether there is any variation in the acceptance and use of technologies in higher education with respect to region.

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APPENDIX A

Construct		Items
Performance Expectancy	PE1	I find e-learning using Moodle useful in learning
	PE2	Using Moodle increases my chances of achieving my education
	PE3	Using Moodle helps me accomplish things more quickly.
	PE4	Using Moodle increases my productivity.
Effort Expectancy	EE1	Learning how to use Moodle is easy for me
	EE2	My interaction with Moodle is clear and easy to understand.
	EE3	Moodle is easy to use.
	EE4	It is easy for me to become skillful at using Moodle
Social Influence	SI1	People who are important to me think that I should use Moodle.
	SI2	People who influence my behavior think that I should use Moodle
	SI3	My peers and doctors prefer that I use Moodle
Price Value	PV1	E-learning using Internet is reasonably priced
	PV2	E-learning is a good value for the money.
	PV3	At the current price of the Internet, e-learning provides a good value.
Facilitating Conditions	FC1	I have the resources necessary to use the Internet and access Moodle
	FC2	I have the knowledge necessary to use Moodle.
	FC3	Moodle is compatible with other e-learning sites I use
	FC4	I can get help from others when I have difficulties using Moodle
Motivations to Use	MU1	Interaction with using Moodle is fun in my learning process.
	MU2	I find using Moodle is enjoyable in my learning process.
	MU3	I find using Moodle is very entertaining in my learning process.
	MU4	I find using Moodle is exciting in my learning process.
Behavioral Intention	BI1	I intend to continue using Moodle (e-learning platforms) in the future.
	BI2	I will always try to use mobile Internet in my daily life
	BI3	I plan to continue to use Moodle (e-learning platforms) frequently
	BI4	It is worth to use Moodle
Use Behavior	UB1	Using Moodle in e-learning is a good idea.
	UB2	The Moodle makes learning more interesting.
	UB3	Working with Moodle is fun
	UB4	I like working with Moodle