Evaluating the adoption of e-learning in higher education context using UTAUT Model

تقييم اعتماد التعلم الإلكتروني في سياق التعليم العالي باستخدام نموذج UTAUT

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Abstract:

The Unified Theory of Acceptance and Use of Technology (UTAUT) model has been widely used to investigate users' intention to adopt and use technology in various settings, including e-learning. This study aimed to assess the e-learning readiness of academics using the UTAUT model. A survey was administered to a sample of 530 academics, and the collected data was analyzed using the SPSS software. The results showed that performance expectancy,effort expectancy, social influence, and facilitating conditions significantly predicted academics' intention to use e-learning. The findings suggest that universities should focus on enhancing academics' perceptions of the usefulness and ease of use of e-learning, providing social support, and facilitating the availability and accessibility of technology to promote the adoption and use of e-learning.

Keywords: E-learning;UTAUT;Digital readiness
Jel Classification Codes:I21; B23

ملخص:

تم استخدام نموذج النظرية الموحدة لقبول واستخدام التكنولوجيا (UTAUT) على نطاق واسع للتحقق من نية المستخدمين في تبني واستخدام التكنولوجيا في بيئات مختلفة بما في ذلك التعلم الإلكتروني. هدفت هذه الدراسة إلى تقييم جاهزية الأكاديميين للتعلم الإلكتروني باستخدام نموذج UTAUT. تم تحليل البيانات التي تم جمعها بعد إجراء مسح لعينة من 530 أكاديميًا باستخدام برنامج SPSS. أظهرت النتائج أن للجاهزية الرقمية دور كبير في التنبؤ بنوايا الأكاديميين لاستخدام التعلم الإلكتروني بالإضافة إلى توقع الأداء، وتوقع الجهد، والتأثير الإجتماعي، وظروف التسهيل. تشير النتائج إلى أن الجامعات يجب أن تركز على تعزيز تصورات الأكاديميين حول فائدة وسهولة استخدام التعلم الإلكتروني، وتوفير الدعم الاجتماعي، وتسهيل توافر التكنولوجيا وإمكانية الوصول إليها لتعزيز تبني واستخدام التعلم الإلكتروني.

الكلمات المفتاحية: الجاهزية الرقمية؛النظرية الموحدة لقبول واستخدام التكنولوجيا؛التعلم الإلكتروني.
تصنيف JEL: I21 ؛ B23

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Introduction:

The spread of the emerging Covid-19 pandemic has posed a major challenge to the whole world because of its obvious effects on the individual and society, and with the great progress in the field of information and communication technology (ICT) and the Industrial Revolution 4.0 and the massive penetration of computer applications, networks, the Internet of things, 3D printing, big data and other forms of intelligence Artificial Intelligence aims to reshape the way organizations interact with the communities they serve by digitizing their operations and offering innovative products, services, and business models. These changes also included the fields of education, which led to a rapid change in teaching and learning methods. University education is considered the top of the educational hierarchy, and this requires taking quick measures in dealing with renewable variables, as well as introducing administrative and educational adjustments in terms of goals and plans, in addition to programs, practices and means. Thus, successful change at this stage becomes a role model. Even in the lower stages of the ladder, many terms were used to describe and evaluate technological changes, as it evolved from the maturity of information technology to digital transformation along with digital readiness. However, the evolution of educational institutions was Universities have been slow in terms of applying integrated digital transformation models to assess their level of maturity compared to other industries (Elezi & Bamber, 2021), where traditional education has been favored while blended learning and online education models have already witnessed a great deal of development due to unprecedented transformations. that occurred at the level of teaching, learning and assessment. Education plays an important role in the economies of countries, and e-learning is considered one of the innovations that have greatly influenced learning environments and is associated with the use of electronic mechanisms to support its enormous advantages, perhaps the most prominent of which are (Papadakis, Kalogiannakis, Sifaki & Vidakis, 2018) consistency of tasks, repetition, adaptability, possibility and ease Access to virtual programs with a clear optimal learning environment, and significantly greater frequency of those who can obtain their materials online compared to in-person classes, moreover, the need for educational resources often fluctuates rapidly and dynamically, with a significant spike in activity dictating the urgency To a much more advanced infrastructure than is usually required for a metropolitan educational institution to function normally during these periods (Nguyen, T, Nguyen, D & Cao, 2014). The main goal of all this is to better understand student performance and create protocols and resources that make learning easier. More attractive and easier. There are computer-based educational systems developed specifically to aid the teaching and learning process and directly related to this approach such as Massive Open Online Courses (MOOCs), Moodle, Blackboard, and Desire to Learn (D2L). These advanced programs, given the expansion of computer size and capabilities (hard space, RAM, and CPUs), support student learning by monitoring their performance and providing them with feedback (Hashem, Yaqoob, Anuar, & Mokhtar, 2015).

E-learning has now become one of the basic alternatives and solutions that were formed as a result of the rapid changes to the extent that change has become the rule rather than the exception, which necessitated educational institutions to make continuous changes to reach their desired goals. On the other hand, the implementation of online education in public and university educational institutions in particular faces challenges that include limited infrastructure, policies, financing, capabilities, awareness, and stimulating human resources (Al-Azawei, Parslow, & Lundqvist, 2016), as most of the failures of e-government projects resulted from About not understanding current conditions (where we are now) and what to expect. (Heek, 2003), and the adoption of e-learning technologies depends entirely on accepting and implementing the required change in the thinking and behavior of institutional users in accordance with the digital requirements of the new era (Parlakkilic, 2013) because they are accustomed to traditional teaching and educational

management methods, and their unwillingness and resistance to change and their dissatisfaction with The process can affect their psychological state and even their performance (Rezaei & Haghani, 2016). Thus, the appropriate way to manage change in the e-learning environment is to gradually change the attitude of users in a positive direction while taking into account the pedagogical, technical and cost implications (Parlakkiliç, 2017), by training and persuading them with the aim of promoting digital literacy and facing the challenges of integrating these technologies in higher education institutions and giving better curricula. (Wedlock & Trahan, 2019). Thus, it became necessary to explore the factors affecting the adoption of e-learning systems to fill the gap in the current literature due to the scarcity of academic research on it in Algerian and Arab higher education, to ensure the continuous development of human capital, and to gain valuable insights for university administrators. and decision makers on the best way to integrate technology into the educational field and enhance its perceived usefulness and acceptance among teachers and students (Hutabarat, 2020). For this purpose, this paper reconsiders the structures of the Unified Theory of Technology Acceptance and Use (UTAUT) model designed by (Venkatesh, Morris, Davis, & F. D, 2003): effort expectation, social impact, average performance and facilitation conditions. The emergence of UTAUT dates back to the early 1980s building on eight previously validated models (Gunasinghe, Abd Hamid, Khatibi, & Azam, 2019):

- Logical Action Theory (TRA) by Fishbein and Ejsen (1975)
- Social Cognitive Theory by Bandura (1986)
- Technology Acceptance Model (TAM) by Davis (1986)
- Model PC use by Thompson et al (1991) .
- Theory of Planned Behavior (TPB) by Ajzen (1991)
- The Innovation Diffusion Theory (IDT) Moore and Benbasat (1991)
- The Motivational Model (MM) by Davis et al (1992) .
- Combined TAM and TPB or C-TAM-TPB by Taylor and Todd (1995)
- UTAUT by Venkatesh et al. (2003).

I-Related work:

Due to the adopted nature of e-learning in the Jordanian context, the Unified Theory of Technology Acceptance and Use (UTAUT) model was applied and expanded with newly added constructs along the lines of learning traditions, self-directed learning and e-learning self-efficacy to measure the intentions of continued use of e-learning systems, through a sample online questionnaire It was estimated at 590 higher education students from three private universities. The results showed the direct positive effect of performance expectation, self-efficacy, average effort, facilitation conditions, and their social impact on the intentions of continuous use of e-learning. Abousweilem, & Al-Rahmi, 2022). To analyze the intentions of 370 students from a public university in Jordan about the actual use of the e-learning system "Moodle", (Abbad, 2021) used the Unified Theory of Technology Acceptance and Use (UTAUT), which integrates determinants across eight models. Four major determinants of intent and use are explored: performance expectation, effort expectation, social impact and facilitating circumstances. The results indicated that performance expectation and expected effort affected behavioral intentions directly affecting Moodle use in contrast to social influence. Thus, UTAUT is considered a valuable tool for understanding university decision-makers and faculty members of the factors of acceptance and adoption of the e-learning system. In order to examine the factors that influence the behavioral intention to use e-learning during the COVID-19 pandemic, the Unified Theory of Technology Acceptance and Use 2 (UTAUT2) was used in addition to innovation. Personal and perceived financial cost in a study of 617 undergraduate students. (Twum, Ofori, Keney, & Korang-Yeboah, 2021) found that personal innovation in information technology, perceived financial cost, average

performance, pleasure motive and social influence are factors that have a significant impact on the intention to use e-learning, while habits and average effort The expected and facilitating conditions had no effect on the intention to use e-learning while user satisfaction, comparative advantage, social impact and perceived ease of use are the most important factors affecting the adoption of e-learning, and business intelligence significantly affected the use behavior (Kayali, & Alaaraj, 2020). In the Indonesian context, the results (Mahande, & Malago, 2019) that touched 170 students showed that the average expected effort, the expected performance, and the social effect that needs more attention significantly and positively affect the behavioral intention, which in turn positively affected the Acceptance and implementation of a better and sustainable e-learning system, with the availability of facilitative conditions that were strongly affected by students' skills and internet speed.(Osei, Kwateng, & Boateng, 2022) developed and empirically tested a model using a combination of UTAUT 2, self-determination theory, and core self-evaluation theory to examine the behavior of a sample of 1,024 students in sub-Saharan Africa. The results showed that behavioral intention is positively related to personal factors and actual use is positively affected by motivational factors. In three Iraqi private universities in Iraq implemented e-learning during the COVID-19 pandemic. In order to study the impact of technology acceptance on the behavioral intention to use e-learning among academics, (Jameel, Karem, & Ahmad, 2022) used the Unified Technology Acceptance and Use Theory (UTAUT) with its four factors. Performance Expectation (PE), Effort Expectation (EE), Social Influences (SI), Facility Conditions (FC) and the addition of a new component is Personal Innovation (PI). The results indicated that all the studied factors increased academics' willingness to use e-learning except for SI and PI, supporting the results of (Alkhuwaylidee, 2019) in which a total of 600 students participated, which sought to expand the Unified Theory of Acceptance and Use of Technology (UTAUT) by adding some factors. Such as the flexibility of the computer-based smart teaching system, the teacher's behavior and perceived learning opportunities to explain the students' intention to use the computer-based smart teaching system that performance expectation, facilitation conditions, expected average effort, social impact and system flexibility have a direct impact on the students' intention to use the computer-based smart teaching system The computer, while the system perceives fun, teacher attitude, perceived learning opportunities, computer self-efficacy and computer anxiety indirectly influence students' intention to use the system. In Saudi Arabia, UTAUT parameters have been shown to be valid and robust. The social impact dimension significantly affected the intention and behavior of 605 students to use the e-learning system. Performance expectation was affected by information quality and system interaction, while expected effort was affected by system learning and educational assessment (Alshehri, Rutter, & Smith, 2020). Through a descriptive-analytical study in which 143 faculty members from Iran were selected to assess their intentions regarding the adoption of e-learning by combining the Unified Theory of Technology Acceptance and Use (UTAUT) and Technology Task Fit (TTF) models. The model turned out to be suitable for explaining the intent to adopt e-learning. Moreover, the results showed that technology and task characteristics, task fit with technology, social influences, expected average effort, performance expectation and facilitative conditions had a direct and significant impact on the adoption of e-learning (Abdekhoda, Dehnad, & Zarei, 2022). This is exactly what was confirmed by (Akbar, 2021) by mixing the concepts of UTAUT (Unified Theory of Acceptance and Use of Technology) and UTAUT 3 theory and that expected effort, expected performance, social influence, and facilitating conditions have a positive impact on the behavioral intention to use e-learning. To examine the intention to adopt learning study of 250 Indonesian students who suffer from anxiety and boredom when using a computer. The results showed the effectiveness of the model, as performance expectations, effort expectations, and attitudes towards use have a significant impact on the intention to adopt e-learning, except for the social effect, which has no effect (Sugandini, Istanto, Arundati, & Adisti, 2022, Hutabarat, 2020).

In Siri Lankan universities, data was collected through a questionnaire dis-tributed to 191 students (Kamalasena, & Mulyani, 2021) revealed that performance expectation, facilitation of conditions, habit, price value, and personal innovation in information technology have positive effects on the use of e-learning. Moreover, the intention has a positive impact on the adoption of e-learning platforms. In the Iraqi context, (Jader, 2021) focused on studying the effect of UTAUT factors on the behavioral intention of 396 students to use Google Classroom (GC) as one of the educational platforms by Mosul University students. The expected performance, expected average effort, and facilitation conditions had a significant effect on the behavioral intention to use GC in e-learning. The social influence also had a negative impact on the behavioral intention to use the technique. At the University of KwaZulu-Natal, South Africa, the theoretical framework used is a modified Technology Acceptance and Use Theory (UTAUT) model. Social affect, attitudes, perceived usefulness, stress, satisfaction, and fatigue were shown to be critical factors in the behavioral intention to accept 204 e-learning students (Olasina, 2019).

In order to produce a report that can be used as a basis for further decision-making by Telkom University in the management of its services, an analysis was carried out to clarify students' intentions to use the information system and their acceptance of the use of "CeLOE LMS". The Unified Theory of Technology Acceptance and Use (UTAUT) model was relied upon. It was found through research (Tussardi, Izzati, Als, & Saputra, 2021) that the Ce-LOE LMS online educational platform was accepted and used by university students, and the performance expectation variable had an impact The largest, and needs improvements related to technical infrastructure, organizational infrastructure, and socialization. Microsoft Stream e-learning was chosen as a solution to continue implementing activities to improve the efficiency and knowledge of employees, improve performance and increase productivity. To understand the factors affecting employee attitudes toward e-learning, 138 employees participated in a survey based on variables (UTAUT) including performance expectation, effort expectation, social in-fluence, facilitating conditions, behavioral intention to use, gender, age, as well as quality of facilities. Learning, teacher quality, and support system quality positively impacted the use of Microsoft Stream (Susanto, Nugroho, Riana, & Hadianti, 2022).

Figure n°1: frequency of variables and their influence in the previous studies used
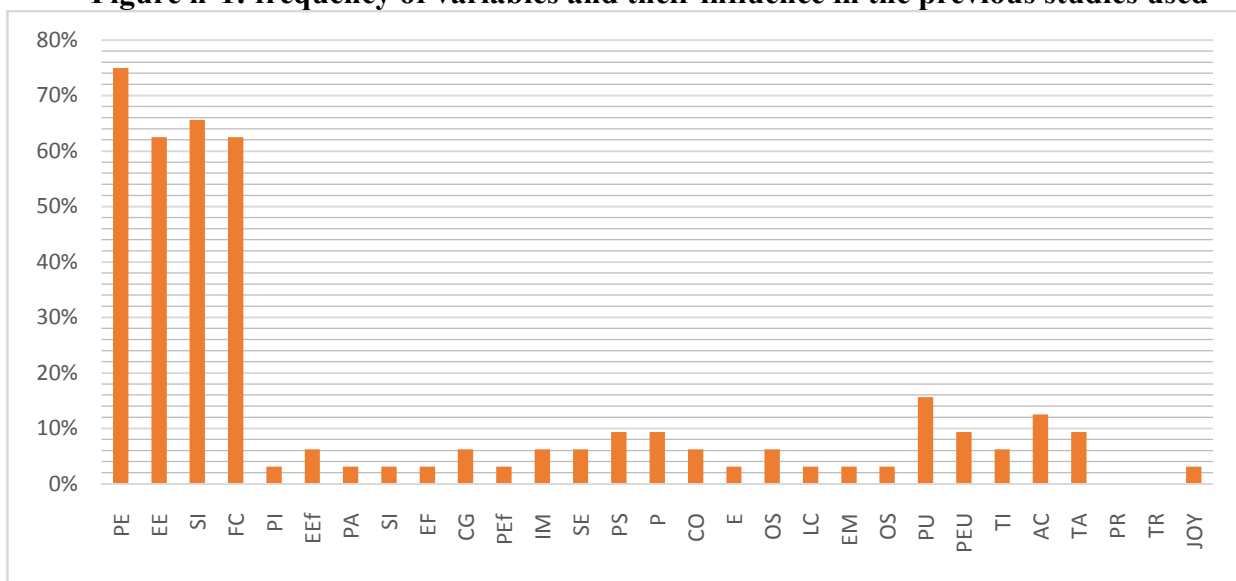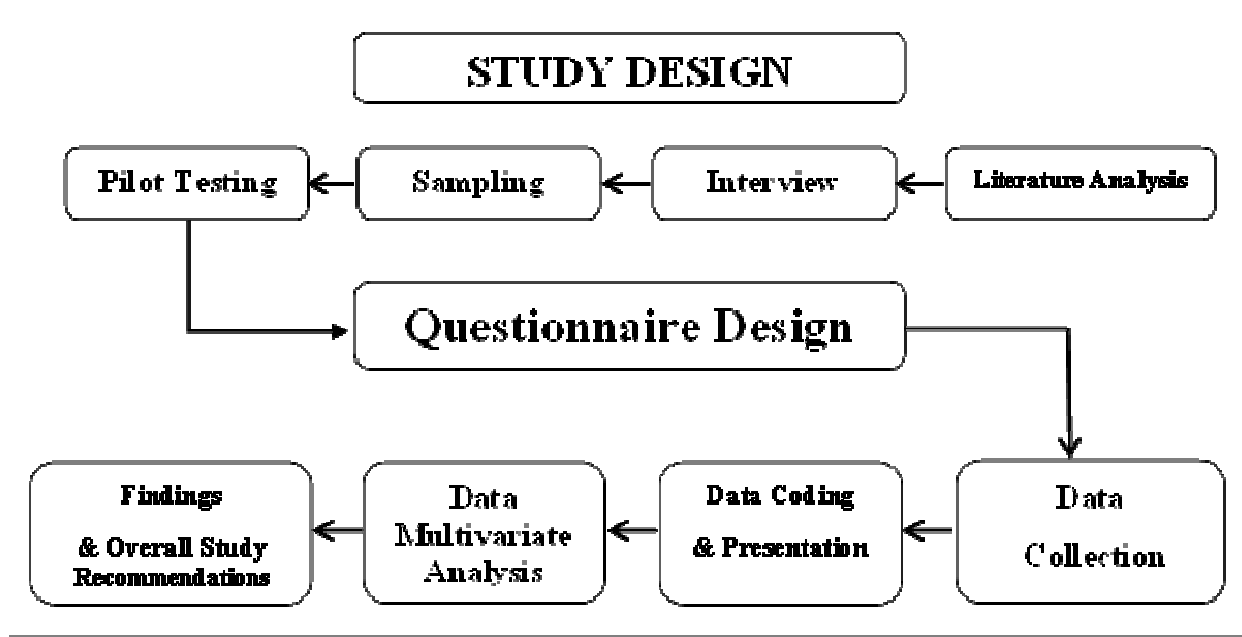

Source: Prepared by the researchers based on excel outputs

Figure No. (01) shows the distribution and frequency of the variables and their influence in the previous studies used in our research related to the UTAUT model, which are as follows: expected performance (PE) 75%, followed by social effects (SI) 66%, then expected effort (EE) b Facilitation of Conditions (FC) 63%, Personal Innovation 3% (PI), Self-Efficacy (EEf) 6%, Perceived Anxiety PA 3%, Social Isolation (SI) 3%, Fear of Epidemic (EF) 3%, Confidence in government (CG) 6%, epidemic, perceived university competency (PEf) 3%, intrinsic motivation (IM) at 6%, self-efficacy for e-learning (SE) at 6%, perceived satisfaction (PS) at 9%, and attitudes (P) 9% Cost, CO 6%, Environment (E) 3%, Conditions of the Organization (OS) 6%, Attributes of the Recorder (LC) 3%, External Motivation (EM) 3%, Organizational Structure (OS) 3%, Perceived Benefit (PU) 16%, Ease of Use Perceived 9% (PEU), teacher influence (TI) 6%, university administration support 13% (AS), availability of technical assistance to students 9% (TA), pleasure (JOY) 3%, while perceived risk (PR) and trust (TR) Although they have been used in many studies, they have no effect on adoption and acceptance E-Learning.

II-Study methodology:

II-1- Study design:

Figure n°2: Study design

Source:Prepared by the researchers

To find out the reality of digital and online education in Algerian universities, the largest amount of information was collected by conducting semi-open interviews with an available random sample estimated at 10 respondents from the university family, after analyzing the content and reviewing the latest studies and articles related to the research topic. And published in the most prestigious international journals, a draft questionnaire was designed divided into two parts, the first section was devoted to the demographic information of the respondents and included gender and educational level, while the second section was devoted to the variables of the study and included 25 questions. All answers were mandatory to avoid the problem of missing values. The validity of its content, the structure of its phrases, the extent of its readability, and its ambiguity were confirmed after being reviewed by five (5) experts in methodology and measurement standards, to

be tested by conducting an experimental study on an appropriate sample estimated at 49 respondents from the University Center of Maghnia, students and professors, in order to ensure its reliability and validity. To ensure the accuracy of the responses, the respondents received an Arabic copy, in both its paper and electronic forms, who numbered 530 respondents, professors and students from various Algerian universities. All items were scaled on a five-point Likert scale to provide more contrast and give respondents a wider range of choices, ranging from: (1) strongly disagree to (5) strongly agree. To analyze the data and after coding it using the SPSS program, and linear regression were used. In the end, the researchers analyzed the results and modeled a linear equation using the correlation matrix, the linear regression model in order to predict the future of e-learning on the one hand and make some recommendations for good management and change management using the UTAUT model from on the other hand, Figure No. (02) illustrates.

II-2- Study model and research hypotheses:

Using the theoretical constructs that were formed through the UTAUT model, and the conceptual framework based on previous studies, the main hypotheses can be formulated as follows :

H1: Performance Expectation (PE) is the academic's belief that e-learning It will be beneficial to achieve its tasks more effectively and efficiently. Thus, we hypothesize that PE influences the academic's use of e-learning .

H2: Effort Expectation EE indicates that academics believe that e-learning platforms are easy to use. Therefore, we hypothesize that EE influences the academic's use of e-learning .

H3: Social Influence (SI) is the degree to which an individual believes that external community pressure from peers, faculty or management influences his perception and intention to use e-learning. Therefore, we hypothesize that SI influences academic's use of e-learning.

H4: Facility Conditions (FC) refers to the user's belief that the institutional support provides all the conditions required for the use of e-learning. Therefore, we assume that FC affects the academic's use of e-learning.

H5: Digital Readiness (DR) refers to both the readiness of individuals in terms of positive beliefs and the knowledge and skills so that they can adapt to any new technological change. Therefore, we hypothesize that DR influences academic's use of e-learning .

H6: Age influences academic's use of e-learning .

H7: Gender influences academic's use of e-learning.

Figure n°3: Proposed Model
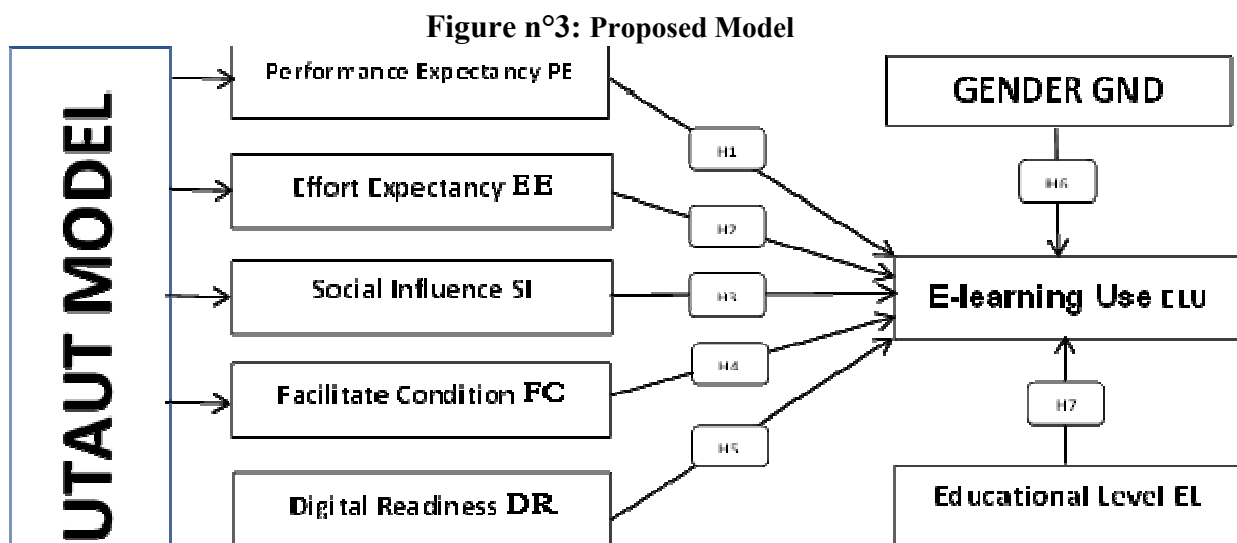
Source:Prepared by the researchers

□-Data analysis:

This study aimed to evaluate and analyze the readiness of university students and professors for digital teaching and learning, through the variables and dimensions of the Adkar model. The study found the following results.

□-1- Demographic profiles of respondents:

As shown in the first table, the majority of respondents were males, with 63.4 percent of the sample representing 36.6 percent females, and the sample consisted of 15.09 percent of professors and 23.02 percent of master students. 24.15 percent are bachelor's students, and the rest of the study sample are first-year students with a bachelor's degree. Moreover, the sample consisted of students and lecturers from various academic disciplines to adequately represent the university in the sample.

Table n°1: Demographic profiles of respondents

Characteristic	Profile	Frequency	(%)
Gender	Male	336	63,4
	Female	194	36,6
Education Level	1	76	14,34
	2	124	23,40
	3	128	24,15
	Master	122	23,02
	Professor	80	15,09

Source: Prepared by the researchers based on SPSS outputs

□-2- Descriptive statistics and individual reliability for all items:

Table n°2: Descriptive statistics for all items

Item.	Mean	S. D	Item.	Mean	S. D
PE1	3,98	0,894	FC3	3,70	0,752
PE2	4,11	0,651	FC4	3,45	0,963
PE3	3,92	0,717	FC5	3,65	0,946
PE4	3,92	0,779	DR1	3,67	0,898
PE5	3,58	0,967	DR2	3,89	0,714
EE1	4,04	0,898	DR3	3,44	1,083
EE2	3,85	0,977	DR4	4,15	0,742
EE3	4,02	0,837	DR5	3,47	1,103
EE4	3,85	0,774	DR6	3,71	0,743
SI1	3,87	0,871	DR7	3,89	0,876
SI2	3,61	0,854			
SI3	3,77	0,901	ELU1	4,02	0,590
SI4	3,77	0,926	ELU2	3,89	0,714
FC1	3,72	0,837	ELU3	3,44	0,083
FC2	3,82	0,753	ELU4	4,15	0,742

Source: Prepared by the researchers based on SPSS outputs

Looking at the mean values for the Performance Expectancy (PE) items, we can see that respondents have a relatively high expectation towards eLearning adoption, with mean values ranging from 3.58 to 4.11. The mean values for the Effort Expectancy (EE) items indicate that respondents find eLearning to be relatively easy to use, with a range of 3.85 to 4.04. The mean values for Social Influence (SI) items suggest that social influence has a moderate impact on eLearning adoption, with mean values ranging from 3.61 to 3.87. The mean values for Facilitating Conditions (FC) items suggest that facilitating conditions have a moderate impact on eLearning adoption, with a range of 3.45 to 3.82.

The mean values for the Digital Readiness items range from 3.44 to 4.15, indicating that respondents have a moderate to high level of digital readiness.

The mean values for the eLearning Use items range from 3.44 to 4.15, indicating that respondents have a moderate to high level of eLearning use.

Overall, the data suggests that respondents have a relatively high expectation towards eLearning adoption and find eLearning relatively easy to use. Social influence and facilitating conditions have a moderate impact on eLearning adoption, and respondents have a moderate to high level of digital readiness and eLearning use.

□-3- Instrument validity and reliability:

Here are the AVE and CR values for each construct:

Table n°3: Validity and reliability coefficients

Construct	Cronbach alpha	AVE	CR
PE	0,835	0.580	0.879
EE	0,808	0.575	0.880
SI	0,792	0.576	0.864
FC	0,860	0.555	0.859
DR	0.864	0.580	0.890

Source: Prepared by the researchers based on SPSS outputs

To ensure that the tool accurately measures the intended purpose, a validity test was performed and the consistency of the respondents' answers on all items of the scale was assessed using Cronbach's alpha coefficient, a coefficient greater than 0.70 indicates sufficient consistency and stability in the scales as recommended by (Hair, Hult, Ringle, & Sarstedt, 2016), The results presented in Table (03) show that Cronbach's alpha values for all con-structs were higher than 0,80, indicating high reliability of the scales. There-fore, it can be concluded that the instrument is reliable for measuring the proposed phenomenon due to the high values of Cronbach's alpha.

Secondly, the validity of the measurement scales was evaluated in terms of convergent validity and discriminant validity. To assess convergent validity, the average variance extracted (AVE) was calculated. According to Fornell and Larcker (1981), a minimum threshold of 0.50 for AVE is required to achieve convergence validity. The higher the AVE, the greater the reliability and convergence of the measurement scale. Results presented in Table (03) demonstrate that all constructs have an AVE of over 0.5, and their Compo-site Reliability (CR) values exceed the criterion of 0.5. Therefore, no overlap was evident between the measures used. Furthermore, the AVE for each construct was found to be above the minimum threshold of 0.50, as recom-mended by (Hair, Hult, Ringle, & Sarstedt, 2016).

Discriminant validity was evaluated using the Fornell and Larcker (1981) criterion, which requires a comparison of inter-scale correlations between constructs and the square root of AVE achieved by each construct. Discriminant validity is achieved if the square root of AVE is greater than the maximum value of construct correlation. The study findings demonstrate that all constructs meet the criterion for discriminant validity (Hair, Hult, Ringle, & Sarstedt, 2016).

□-4- Hypothesis testing and model validation:

The statistical value of the correlation coefficients Person for e-learning readiness and the four variables of the UTAUT model and the digital readiness variable, and the statistical coefficients of the simple linear regression model. To find out the relationship between the independent variables "performance expectation PE, expectation of effort EE, social influence SI, facilities conditions FC, and digital readiness DR" as explanatory variables and the de-pendent variable using e-learning (ELU), a simple linear regression model was used as shown in Table (04). The model is significant and predictable through the calculated Fisher value (313,309) in terms of (0.000) smaller than the level of significance (0.05) and a strong correlation estimated at (88.8%) and given the coefficient of determination, the dependent variables explain (74.9%) from the variation in the use of electronic education systems, and the rest is due to other variables outside the study model. There-fore, the factors used in the proposed model for this study are not sufficient to determine their relationships with the intention of adopting digital education systems in the Algerian university. Therefore, they are not the only drivers that influence the decision to accept and use digital education.

Table n°4: model coefficients and decisions

Hypothesis	Person	p-value	β	t	p-value	Decision
H1 – PE→ELU	0,788	0,000	0, 249	7,951	0,000	Suported
H2 – EE→ELU	0,433	0,000	0,124	4,898	0,000	Suported
H3 – SI→ELU	0,782	0,000	0, 266	9,412	0,000	Suported
H4 – FC→ELU	0,645	0,000	0,183	6,773	0,000	Suported
H5 – DR →ELU	0,793	0,000	0,330	10,596	0,000	Suported
H6 – GNDR →ELU	0,233	0,072	0,052	5,174	0,103	N. Suported
H7 – EL—→ELU	0,321	0,000	0,034	2,994	0,000	Suported

Source: Prepared by the researchers based on SPSS outputs

The results of the study suggest that demographic factors do not have a significant impact on participants' ability to comprehend questionnaire questions and respond to them objectively. The statistical analysis revealed a probability value of 0,103, indicating that gender does not play a significant role in e-learning adoption. Consequently, the study rejected the first hypothesis (H1), which goes against the conclusions of other research studies (Kayali, & Alaaraj, 2020, Alshehri, Rutter, & Smith, 2020, Jameel, Karem, & Ahmad, 2022) that found significant gender differences, with females showing greater readiness for e-learning. In contrast, the impact of educational level was found to be weak and modest, with a probability value of 0.000, which is lower than the level of significance (0.005). This finding supports and confirms the second hypothesis (H2).

The findingsalso concluded that all the studied variables had a significant effect, and therefore the acceptance and support of all hypotheses consistent with the results of (Chatti, & Hadoussa, 2021, Antoniadis, Zafiropoulos, & Mitsiou, 2022, Rahmaningtyas, Mulyono, Widhiastuti, Fidhyallah, & Faslah, 2020). The DR component is the most influential, since most or all of the respondents have smartphones or digital gadgets and are proficient in using social networking sites and digital education platforms such as ZOOM, GOOGLE CLASSROOM, MEET ... in addition to having access to the Internet at affordable prices. Followed by SI, confirming the results of (Twum,

Ofori, Keney, & Korang-Yeboah, 2021, Jameel, Karem, & Ahmad, 2022, Alkhuwaylidee, 2019, Abdekhoda, Dehnad, & Zarei, 2022) for the effective role of faculty members, who made Their best effort to make the two academic seasons a success and their strong insistence on using digital education instead of face-to-face education in order to avoid the epidemic on the one hand and to implement the decisions of the trustee ministries on the other hand, as demonstrated by (Mahande, & Malago, 2019, Alshehri, Rutter, & Smith, 2020, Akbar, 2021, Sugandini, Istanto, Arundati, & Adisti, 2022). As for PE, user belief in improved performance (in terms of saving time and effort) encourages the adoption of e-learning. The findings regarding the importance of the FC effect agree with those of Al-Adwan, Yaseen, Alsoud, Abousweilem, & Al-Rahmi, 2022 (Susanto, Nugroho, Riana, & Hadianti, 2022). This finding demonstrates the academics' belief that finding e-learning More useful than traditional teaching, it will increase the use of e-learning. Thus, higher education management must communicate constantly and remind the benefits of e-learning to employees by organizing group discussions, workshops and training courses. Then EE is ranked last on its moral impact on the use of e-learning and its importance in A study (Dwita, 2020, Altalhi, 2021, Antoniadis, Zafiropoulos, & Mitsiou, 2022) is due to the fact that the e-learning platform is easy to use and less complicated, and therefore its spread is large within higher education institutions. Therefore, periodic reviews of the system should be provided, and the interfaces should be easy to use.

The study model equation can be written as follows:

$$ELR=0{,}793*DRi+0{,}788*PEi+0{,}782*SIi+0{,}645*FCi+0{,}433*EEi+ei$$

□-5- Implication of theory and practice:

This study contributes to providing a significant contribution to the existing evidence about the validity of the UTAUT model in different learning cultures and contexts and its efficiency by adding the digital readiness variable in the acceptance and use of e-learning in higher education institutions in a developing country such as Algeria. In this study, the proposed research model was validated with experimental data. The results indicate that the adoption of e-learning by academics depends largely on their beliefs, experiences and skills, in addition to the technological infrastructure. It was found that all the studied factors such as PE, EE, FC, SI and DR are important in predicting the adoption and acceptance of technology. Thus, the study in theory contributes to the adoption of information systems and especially the acceptance of e-learning by academics in higher education institutions. The results of the study may help the management of higher education teachers, teaching assistants and policy makers to design and implement their online strategy, make appropriate decisions and provide insights about a better approach by integrating personality and motivational factors in the design of e-learning systems to enhance its acceptance among a larger number of academics in higher education institutions. In this regard, the use of a computer-based smart teaching system will enable universities to quickly, efficiently and effectively improve their students' learning anywhere and at any time while supporting performance monitoring, improvement and skill development, thus improving the quality of output and institutional performance. Decision makers in higher education institutions are recommended to consider exploiting the above-mentioned findings to help universities expand and enhance their curricula with flexible learning technologies in an interactive manner and to develop accurate plans for the further adoption of e-learning. Serious thinking about caring for the human element by training them by providing useful courses to meet specific needs, building continuous awareness, periodic review of the e-learning system, understanding system defects and improvement to be more user-friendly, help desk, and introduction of policies and guidelines to encourage experimental use.

Through these actions, a larger academic audience can be incentivized to further their willingness to embrace e-learning.

Conclusion:

This study proposed a theoretical model, and as far as the researchers are aware, it is the first to study the impact of the dimensions and elements of the UTAUT model to verify the effect of "Performance Expectation PE, Effort Expectation EE, Social Impact SI, Conditions Facilities FC and Digital Readiness DR" on the readiness of Algerian universities to use digital education systems "ELU". The results showed that digital readiness (DR) is the main and influential factor in the readiness to use digital education systems, followed sequentially by social influence SI, performance expectation, conditions facilities, and then effort expectation. It should be noted that the gender variable has no significant effect on the use of digital education systems. And that there is no significant difference in the perception of users with regard to gender and age, as is the case with regard to the educational level

The validity of the theoretical model was confirmed in the context of the local higher education institution (HEI) through a well-fitting measurement model and subsequent hypothesis testing. The structural model analysis revealed significant relationships among all hypothesized variables in predicting the adoption of e-learning.

Limitations and future directions:

this study has its limitations like most other research studies. First, selecting a sample that touched a small number of respondents and especially the weak interaction with the online questionnaire could limit the generalizability of the results. Second, this study used tools, measurement methodologies, and variables that have been tested and validated in previous studies. There-fore, it is better for future studies to use measurement scales that are practically commensurate with the privacy of the work and study environment, because the use of different measurement elements in such studies would contribute to verifying the validity and credibility of the proposed model. Data can be collected based on interviews and face-to-face interactions with respondents, especially those with a low educational background, because it is more effective in collecting data as compared to questionnaires which provide no opportunity to clear up any ambiguities or doubts. Third, for a deeper understanding of the dynamics of this innovative technology, other variables can be incorporated into future studies such as: perceived ease of use, perceived pleasure, customer satisfaction and loyalty, perceived useful-ness of use.......

Appendices:

Dimensions	Variables Items
Digital readiness	DR1: I can use social media platforms
	DR2: I can search for everything I need via the Internet
	DR3: I can download everything I need from the Internet
	DR4: I can use e-mails
	DR5: I can learn online using my smartphone
	DR6: I can learn online using a computer
	DR7: I can have access to the Internet even with a weak flow
Performance Expectancy	PE1: I find ELS useful in my learning
	PE2: Using ELS enables me to accomplish learning activities more quickly
	PE3: Using ELS increases my learning productivity
	PE4: If I use ELS, I will increase my chances of getting a better mark in the courses
	PE5: I find ELS useful in my learning
Effort Expectancy	EE1: My interaction with ELS is clear and understandable
	EE2: I am skillful at using ELS
	EE3: Learning to use ELS is easy for me
	EE4: I find it easy to get ELS to do what I want it to do
Social Influences	SI1: People who are important to me think that I should use ELS
	SI2: People who influence my behavior think I should use ELS
	SI3: The seniors in my college are helpful in the use of ELS
	SI4: In general, the university has supported the use of ELS
Facilitating Conditions	FC1: I have the resources necessary to use ELS
	FC2: I have the knowledge necessary to use ELS
	FC3: ELS is not compatible with other systems I use
	FC4: A specific person (or group) is available for assistance with ELS difficulties
	FC5: Registering on the ELS platform is easy
E-learning Use	ELU1: I consider myself a regular user of ELS
	ELU2: I prefer to use ELS when available
	ELU3: I do most learning tasks by using ELS
	ELU4: My tendency is towards using ELS whenever possible
	The university offers training courses on the basics of e-learning

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