Factors Affecting the Adoption of E-Learning Technology by Students during the COVID-19 Quarantine Period: The Application of the UTAUT Model

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Abstract-The adoption of e-learning technology has become a major challenge for many academic institutions during the Covid-19 pandemic. More and more institutions are questioning the success of adopting this technology and are seeking to understand their adoption process. The objective of the current research work is to study the factors affecting the intent of Saudi university students to adopt online technologies during the Covid-19 pandemic. Based on the Information Technology Adoption Model, UTAUT, a research model was designed and validated by combining the factorial analysis method with simple linear regression analysis. The study revealed four key factors that had significant and positive effects on users' intent to use online technology, including the perceived usefulness, perceived ease of use, teacher influence, university management commitment, and availability of student technical assistance.

Keywords-Covid-19; UTAUT; e-learning

I.   INTRODUCTION

The Covid-19 pandemic has disrupted education in a unprecedented scale. As of March 16, 2020, 777 million pupils and students had been forced to leave their school or university in a total of 100 countries, with 85 governments closing schools nationally and 15 others imposing school closures at local levels [1]. In Saudi Arabia, the decision to close schools and universities was taken early, on March 9, 2020 almost a week after the appearance of the first case of COVID-19 in the kingdom. The Saudi government, through its Ministry of Education (MoE), ensured that educational activities were not interrupted, adopting the concept of distant learning very effectively. In fact, the MoE provides a 5-way integrated system (ranging from electronic portals to YouTube channels) that takes into account the contrasting technical capabilities of the students and which can be adapted to their daily schedule. Universities have also adopted distant learning with their students, with each university using its respective channel/portal, which has resulted in undisrupted teaching cycle and final exam schedules. Thus, the use of new technologies has become essential to mitigate the impact of closure of academic institutions. To this end, distance learning is offered as an alternative that guarantees pedagogical continuity.

Education and classroom teaching have changed radically with the rise of e-learning. The crisis of Covid-19 pushed educational institutions to make greater use of online technology or start using e-learning systems for course continuity. Institutions use many technologies such as teaching and learning programs or even social media. In Saudi Arabia, most universities turn to online education through various applications such as Zoom, Blackboard, LMS and Teams [2]. E-learning generally refers to the use of computer network technology and electronic media to deliver and transfer knowledge for educational purposes [3]. In addition, e-learning assists students to get access to different online courses, scientific databases, and learning tools [4]. E-learning is generally considered as an important educational source for improving the effectiveness and efficiency of learning services, because of its availability, low cost, ease of use, and interactive nature [5]. Furthermore, e-learning systems help to capitalize knowledge and coach students. E-learning systems have several functionalities that can be useful in the learning process. They allow SMS sending and supporti the learning activity on a laptop or mobile device. Students can easily integrate the learning content into their mobile devices since they can easily connect to mobile or Wi-Fi networks. E-learning is thus seen as the process of using electronic technologies to access learning material in a non-traditional way [3, 6]. In other words, e-learning refers to the provision, organization and management of educational activities, such as student registration, exams, assignments, course descriptions, lesson plans, messages, syllabus, core course material, etc. within a remote system. [7]. Since the success of the e-learning system depends on the willingness and acceptance of students to use it [3, 8], rejection of the use of this online technology may hinder the realization of the expected benefits [9]. Non-acceptance makes the implementation or adoption of this technology a failure and a waste of money for academic institutions [10]. The research on this topic is still in its infancy, as students' views are not well studied [11]. Exploring the

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adoption of e-learning technology can lead universities to understand better the needs of their students and manage more efficiently such educational systems that are widely diffused due to Covid-19 crisis [12].

To date, little work has been attempted in analyzing the use of e-learning systems during the Covid-19 pandemic. This research aims to investigate the main factors affecting the use of e-learning systems during the Covid-19 pandemic in Saudi Arabia. The process of adopting online technology involves two major activities that are carried out sequentially: initiation and implementation [13]. During the initiation stage, the academic institution becomes aware of the e-learning system, forms an attitude towards it, and evaluates the innovation. Initiation includes the activities of researching information, conceptualizing, and planning for adoption of this technology [14]. Initiation includes, the stages of awareness, consideration, and intention. At the end of this stage, a decision on whether to adopt or reject the technology is made. Authors in [15] adhere to this two-stage vision by considering that the adoption process includes adoption and implementation. An organization adopts an innovation when it decides to allocate resources to it. The implementation stage includes the development and installation activities that take place when the organization begins to use the innovation [16]. However, the process of setting up the e-learning system begins without a real awareness of the different stakeholders in the system: students, teachers, and administration. In other words, the initiation stage is only cursory. As a result, the question of acceptance of this innovation arises, particularly for students. The UTAUT technology acceptance model is, a framework for studying the question under research.

II. THEORETICAL FRAMEWORK

A. Theories of Technology Acceptance

Behavioral theories about people's intentions have provided the theoretical basis for the development of models of technology adoption and acceptance [17]. These include the theory of reasoned action, the theory of planned behavior, and the Technological Acceptance Model (TAM). The theory of reasoned action [18] aims to predict and understand the behavior of individuals. It claims that the behavior (adoption of a technology) of any individual is reflected and directly influenced by his or her intention to achieve it, the latter being determined by two variables: attitudes and subjective norms. These two determinants of behavioral intention are in turn influenced respectively by beliefs about the consequences of the behavior and normative beliefs about a given behavior. The theory of planned behavior [19] is an extension of the theory of reasoned action. This theory adds a third determinant to the two determinants of the theory of reasoned action, namely the perceived control of the behavior or what is also called the perceived ability to carry out the behavior. It is based on the idea that individuals make rational use of available information to construct intention when faced with a behavioral decision [19]. In addition, the concept of perceived control of behavior stems from external and internal factors that facilitate the achievement of a given behavior, as well as the individual's perception of his or her personal effectiveness in achieving that behavior. In addition, two other variables explain this concept.

These are control beliefs and facilitating conditions, which refer to an individual's assessment of the importance and availability of resources or an environment conducive to the achievement of the behavior. Built from the theories of social psychology, particularly the theory of reasoned action, the TAM is specifically concerned with the acceptability behavior of ICT. The TAM offers a perspective for understanding problems related not only to the adoption and use of information systems, but also to the appropriation of information systems by users. The main objective of this model is to predict the acceptance of an information system and, above all, to evaluate the impact of various external factors on internal beliefs, attitudes, and intentions of its users. The AMT postulates that the actual use of a technology depends on the intention to use it and considers that this intention is influenced by the perceived usefulness and ease of use. The perceived usefulness is defined as the degree to which an individual believes that the use of a particular system could improve job performance [20]. It is therefore a function of the degree to which a technology is seen as advantageous and beneficial by its users. Perceived ease of use, on the other hand, refers to the degree to which an individual believes that the use of a particular system can reduce effort [20]. It refers to the degree to which an individual believes that the use of a system will not require "much" cognitive effort. The specificity of AMT in relation to ICT, the accuracy of the determinants it proposes, and the precision of the measures [21], make it the most widely used model in the areas of ICT adoption and acceptance [17].

The listed models focus on individual ICT acceptance by predicting usage intent for ICTs that are already implemented. This study focuses on a context in which the technology is already implemented and used by individuals. Thus, to answer the research question, the Unified Model Theory of Individual Technology Acceptance (UTAUT), which is considered to be the most recent and unifying theory, will be adopted in this study. UTAUT uses the essential elements of previously established models [21]. It is tested and empirically validated by longitudinal and cross-sectional studies on technology adoption in different contexts [22-26]. The UTAUT model [21] is a synthesized and comprehensive theory, which takes up the theories of acceptance of technologies in use, the variables whose validity and predictive power have been shown to be significant. Compared to previously established acceptance models, UTAUT is considered [24] the best account for technology adoption, use, and acceptance. UTAUT postulates that the actual use of a technology is a function of the intention to use it, which in turn is influenced by determinants such as the expected performance, expected effort, social influence, and enabling conditions. Moreover, unlike previous models, this model integrates new categories of moderating variables that vary the influence of the determining variables on the intention to use. These are: gender, age, experience of use, and whether the use is compulsory or voluntary.

B. Research Model Design

The main objective of this work is to determine the factors that influence the acceptance of e-learning technology in the Saudi academic community. The selection of the determinants of acceptance used in this research is heavily influenced by the

UTAUT model [21, 27]. UTAUT has the advantages of (1) being a general model belonging to the set of theoretical models that have been developed to explain human adoption behavior and (2) having a high number of constructs, which gives it great explanatory power for the intention to use a technology. Four independent variables define the model of [21], namely the perceived ease of use, the perceived utility, social influences, and facilitating conditions. Four moderating variables (age, gender, experience, and mandatory or voluntary use), moderate the influence of the explanatory variables in the intention to adopt the technology. Some authors consider that when the technology integrates with the individual's old tasks, and is therefore compatible with existing values, it can be recognized as useful and can influence the intention to use. This is why we have also considered, in this modeling effort the construct "compatibility with existing values" [28], also called task-technology compatibility [26], as an (independent) explanatory variable for the intention to adopt e-learning technology. Finally, the variables explaining the intention to use and actual use of the UTAUT were grouped into a single variable called intention to adopt e-learning technology.

For the present study we will not retain the moderator variables. Thus, we have: a (dependent) explanatory variable: intention to adopt, and the (independent) explanatory variables: perceived usefulness, ease of use, social influences and facilitating conditions (Figure 1).
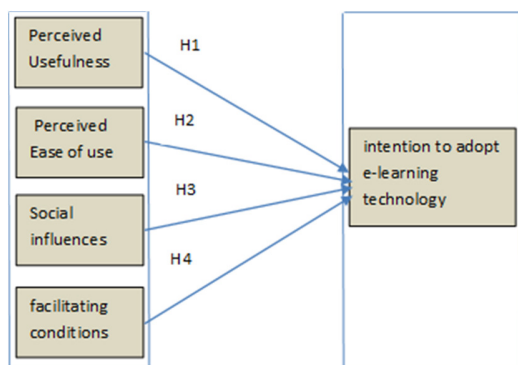

Fig. 1. The research model.

1) Perceived Usefulness

Perceived usefulness is the degree to which an individual believes that using a system would help him or her achieve gains in job performance [21]. It has been shown by several studies to be a very significant determinant in explaining the intention to adopt a technology [21, 29]. Indeed, e-learning technology can only be adopted if the students perceive gains in terms of efficiency, speed, and performance in the execution of tasks. The variable "perceived usefulness" is therefore understood as the perception of the usefulness of e-learning technology. Theoretical models of technology adoption (TAM, UTAUT) and the work of several researchers have confirmed that the perceived usefulness of a technology promotes its adoption and use. Based on the empirical research in [21, 29] we assume that:

H1: The perceived usefulness of e-learning technologies by students in performing their tasks positively influences their intention to adopt them.

2) Perceived Ease-of-Use

The perceived ease of use is seen as a direct determinant of the intent to adopt [26]. This variable is defined as the intensity with which an individual believes that the use of a particular system will occur without difficulty or additional effort [21]. Thus, the likelihood that there is an intention to use the e-learning technology is all the greater as long as the appropriation and learning process is easy to understand and use [26]. In other words, this variable explains the extent to which an individual believes that the organizational and technical infrastructure exists to support the use of the system [30]. The following hypothesis is therefore adopted:

H2: The perceived ease of use of e-learning technologies by students positively influences their intention to adopt them.

3) Social Influences

Social influences are defined as an individual's perception that most people who are important to him or her think he or she should or should not engage in the behavior in question [18]. In other words, they include the role of people who are important to the individual and who exert some influence on his/her behavior [25]. Prior to UTAUT, several technology acceptance [28, 31, 32] models showed that this "social influence" variable - also called subjective norms or social factors - exerted a significant influence on technology use. In our study, this social influence variable is measured separately by three constructs drawn from research using different models such as the GAM [31], the GAM2 [3]: influence of colleagues, influence of the hierarchical superior, and expected professional valorization. Thus, we postulate that:

H3.1: Colleagues' use of e-learning technologies influences students' adoption intentions.

H3.2: The commitment of the line manager (teacher) to the use of e-learning technologies for teaching influences the positively the students' adoption intention.

4) Facilitating Conditions

Enabling conditions refer to the extent to which an individual believes that an organizational and technical infrastructure exists to support the use of the system [21]. This variable is generally assessed through management involvement and the availability of technical assistance [33]. Organizational support or the involvement of leaders, which have been described as agents of change [34], is presented as a determining factor in the process of adopting a technology within an organization [21]. We suggest the following hypotheses:

H4.1: The involvement of university management positively influences students' intention to adopt online technologies.

H4.2: The availability of technical assistance within the university positively influences the intention of students to adopt online technologies.

III. METHODOLOGICAL FRAMEWORK

A. Study Population

The data were collected through a distributed by email questionnaire. Our study population consisted of students from a Saudi Business School. Out of the 120 contacted students, 87 (55.3% male and 44.7% female) answered the questionnaire. They were asked about the way they used to attend online classes, which indicated that 95% of the students used cell phones and 5% laptops.

B. Questionnaire Construction

The questionnaire consisted of two parts, demographic data and a 20 item questionnaire on a 5-point Lickert scale ranging from 1 for strongly disagree to 5 for strongly agree. SPSS software was used to test the reliability and validity of the scales and to apply multiple regression analysis on the collected data. For its construction, the guidelines of [25, 35-38] on the determinants of e-learning adoption and on the determinants of pedagogical integration of ICT by university teachers were followed. The items selected for each variable are summarized in Table I.

C. Methods of Analysis

For the processing of the collected data during the survey, two types of analysis were opted. At first, a principal component factor analysis was performed to test the validity and reliability of the measurement scales. Then simple linear regression was used to test the research hypotheses. This method is widely used to explain or predict a variable to be explained based on one or more explanatory variables [39]. These analyses and statistical treatments were performed using the SPSS version 25.0.

TABLE I.　　MEASURED ITEMS IN THE RESEARCH CONSTRUCTS

Variables		Items
Perceived usefulness	PUSE1	The use of e-learning systems helps me to perform my learning tasks in a better way.
	PUSE2	The use of online learning systems helps me to better follow my courses.
	PUSE3	Using e-learning systems can improve my level of interaction with my teachers and classmates.
	PUSE4	Using e-learning systems can improve the effectiveness of my learning.
Perceived ease-of-use	PEAS1	It would be easy for me to learn how to use the e-learning system recommended by the university.
	PEAS2	I find the e-learning system recommended by the university easy to use.
	PEAS3	I may have difficulties in using the e-learning system recommended by the university.
	PEAS4	It would be easy for me to become competent in the use of the learning system.
Classmate influence	CINF1	My classmates help me use the e-learning system.
	CINF2	I interact with my classmates on the use of e-learning systems.
Teacher influence	TINF1	My teacher explicitly supports my use of e-learning systems.
	TINF2	My professor is convinced of the advantages of the e-learning systems.
Top management	TMAN1	The university management is particularly interested in the use of the e-learning system.
	TMAN2	The use of the e-learning system is strongly encouraged by the university management.
	TMAN3	The management of the university is actively involved in the implementation of the e-learning system.
Technical assistance	TASS1	The members of the IT department are always available to help those who need to
	TASS2	The university has an IT department with technicians ready to help me in case of need.
	TASS3	The necessary instructions for a better use of the e-learning system are available for me.
Intention to adopt	BINT1	I have decided to adopt the e-learning system recommended by the university.
	BINT2	I decided to attend the online course
	BINT3	During this pandemic, I think it is good to use the e-learning system in courses.

IV. RESULT PRESENTATION AND DISCUSSION

A. Purification of Measurement Scales

There is a question of verifying the unidimensionality of the constructs and the internal coherence of the different scales of measurement. To do so, principal components factorial analysis was performed and the coefficient of Cronbach's alpha was calculated [40]. The analysis of the results of the one-dimensionality test of the measurement scales shows that the vast majority of our constructions present a Cronbach's alpha greater than 0.8, which is widely acceptable in the literature. These values show and attest to the existence of internal consistency between the scale items. The constructs are therefore reliable for testing the research hypotheses.

B. Testing the Validity of the Model Hypotheses

The obtained results, presented in Table II, show that the perceived usefulness and the perceived ease of use positively influence the intent to adopt. Thus the hypotheses H1 (β=0.93, p<0.01), H2 (β=0.95, p<0.01) are verified. In addition, the hypothesis H3.1 (β=-0.06, p>0.1) is rejected while H3.2 (β=0.32, p<0.01) is accepted. Finally, the two constructs of the facilitation condition variable, management involvement and availability of technical assistance, both positively influence the intention to adopt the technology. The hypotheses H4.1 (β=0.33, p<0.01) and H4.2 (β=0.59, p<0.01) are therefore verified.

C. Discussion

1) The impact of Perceived Usefulness on the Intent to Adopt Online Learning Technology

The results of the analysis show that perceived usefulness has a significant influence on adoption intention. These results are consistent with those of [20, 41]. The significance of this perceived utility variable in our study shows that for students, the online learning system supports the teacher-student relationship and promotes the learning activity. Students appear to believe that a learning system improves the effectiveness of

their learning, allowing them to visualize and follow their course and to interact more easily with teachers. Usefulness is perceived by the fact that an e-learning system would be a real platform for students to continue to attend their course and complete their assignments without any constraints. The

students consider these platforms as real tools for communication, content publication (knowledge sharing), technology monitoring, etc. The respondents are therefore aware of the contributions of e-learning systems to learning activities.

TABLE II.   VARIABLE PURIFICATION IN THE RESEARCH MODEL

Construits	Items	Quality of representation	Eigenvalues	Explained variance	Cumulative variance	Cronbach's alpha
Perceived usefulness	PUSE 1	0.788	2.076	62.28%	62.28%	0.872
	PUSE 2	0.789				
	PUSE 3	0.921				
	PUSE 4	0.834				
Perceived ease-of-use	PEAS 1	0.701	3.150	65.11%	65.11%	0.801
	PEAS 2	0.698				
	PEAS 3	0.744				
	PEAS 4	0.786				
Classmate influence	CINF 1	0.651	2.795	55.01%	55.01%	0.891
	CINF 2	0.569				
Teacher influence	TINF 1	0.734	1.918	71.11%	71.11%	0.863
	TINF 2	0.781				
Top management	TMAN 1	0.901	2.823	74.16%	74.16%	0.857
	TMAN 2	0.878				
	TMAN 3	0.865				
Technical assistance	TASS 1	0.689	2.350	59.19%	59.19%	0.901
	TASS 2	0.707				
	TASS 3	0.819				
Intention to adopt	BINT 1	0.780	2.090	70.35%	70.35%	0.874
	BINT 2	0.865				
	BINT 3	0.897				

TABLE III.   TESTING THE VALIDITY OF THE HYPOTHESES

Construits	Items	Hypotheses	R2	β	F
Perceived usefulness, intention to adopt	PUSE, INTA	H1	0.91	0.93,***	4.125, ***
Perceived ease-of-use, intention to adopt	PEAS, BINT	H2	0.93	0.95,***	0.97, ***
Classmate influences, intention to adopt	CINF, BINT	H3.1	0.79	-0.06	-1.00
Teacher influence, intention to adopt	TINF, BINT	H3.2	0.81	0.32,***	7.61, ***
Top management, intention to adopt	TMAN, BINT	H4.1	0.83	0.33,***	0.59, ***
Technical assistance, intention to adopt	TASS, BINT	H4.2	0.73	0.59,***	7.28, ***

*$p<0.10$, **$p<0.05$, ***$p<0.01$

2) The Impact of Perceived Ease of Use on the Intention to Adopt an E-Learning System

The results showed that there was a significant and direct relationship between these two variables. The influence of the perceived ease of use on the intent to adopt e-learning systems was found to be very significant and positive in this research. These findings are consistent with the results in [20, 21, 41], where authors assume that the more the student sees the use of e-learning systems in the learning activity as effortless, the greater the intention to adopt will be. Perceived ease of use, a logical consequence of personal experience in using such a technology, which itself has created a kind of attachment to e-learning systems, favors the willingness to use it. Thus, the results obtained can be explained by:

- The fact that, for respondents, this is not a new and unknown technology, but rather a technology that they are used to practice in a personal and sometimes playful way (social media). Almost 80% of the respondents used social media to communicate with each other. The majority of them were fairly accustomed to these platforms.

- The availability of training material on the use of online learning systems and web 2.0 platforms at the university and on the internet for free.

3) The Impact of Social Influences on the Intention to Adopt the E-Learning System

In most studies of technology adoption in workplaces [21, 25], the influence of classmates and of the teacher has been considered the as a "social influence". These studies have shown that each of these constructs has a significant influence on technology adoption. Our results showed that only one of the starting constructs of the social influence variable exerts an influence on the adoption of e-learning systems. Only the teacher influence construct that emerged during the treatment was found to significantly influence the intention to adopt e-learning systems. These results call for several comments:

- We note the absence of a significant impact of peer influence on the intention to adopt e-learning systems. Based on the results, we conclude that in the context of our survey, the students to whom our respondents belonged did not have "early" adopters [41] who could encourage them

to use e-learning systems for their learning practices. We could also assume that in a period of confinement, contact is virtually absent and the use of these platforms does not require great skill or ability to motivate students to seek help from their colleagues.

- Our study showed the presence of a causal link between the variable influence of teachers and the intention to adopt e-learning systems. This suggests that according to the surveyed students, the adoption of e-learning systems is a function of teacher encouragement. Teachers encourage their students to adopt e-learning systems because they are convinced of the benefits that the learning activity can derive from their implementation. Teachers help students to solve many technical problems and answer many of their questions regarding the use of these platforms. Teachers post all course material on these platforms and even conduct online exams. They do not give students a choice about whether or not to use these platforms.

4) The Impact of Facilitation Conditions on the Intention to Adopt the E-Learning System

Both constructs of the facilitation condition variable of management involvement and the availability of technical assistance were found to significantly influence the intention of adoption of e-learning systems by the sampled students. These results are consistent with several previous studies [29, 33]. The involvement of university management is necessary to improve student commitment and motivation to adopt such systems. Senior management commitment refers to a concept well identified, through work on information systems, as a determinant of successful IT acceptance [42]. Under the impetus of a policy of presence and support from management, students are obliged to align themselves with management's guidelines for distance education and to become more involved in the use of these platforms. We can therefore consider that the respondents are aware that despite the significant benefits of e-learning systems, management support is necessary for the successful adoption of these platforms. The meaning of the availability of technical assistance is simply explained by the fact that despite a certain willingness on the part of the students, if there is no technical infrastructure, or if it is not adequate and there is no high speed internet connection, there can be no claim of adopting e-learning systems. Thus, the presence of computer equipment, internet connection, and technical assistance, as well as the establishment of a training policy, if necessary, to accompany the adoption of e-learning systems is essential for the respondents.

V.   CONCLUSION

Within COVID-19 context, online education and e-learning has emerged at many universities as a modern educational model and changed radically the previous traditional learning concept. To avoid the spread of the virus and enhance the social distancing among students, many Saudi universities and high schools implement and adopt different online educational systems to ensure course continuity. This research focuses on identifying the factors that determine e-learning system adoption by students at a Saudi Business School. The study adopts the UTAUT theory [21] to develop a conceptual model

which was tested through a quantitative methodology by an online survey (87 students). The most important outcome of this research was the confirmation of the importance of factors determining the acceptance and the adoption of an e-learning system. The results show that the main determining factors are: the perceived usefulness, the perceived ease of use, teacher influence, involvement of university management, and the availability of technical assistance. This research demonstrates that if students perceive the usefulness of e-learning systems with their learning tasks, they will be more inclined to adopt such a system. This result can be useful to higher education managers that focus on enhancing awareness-raising actions regarding the benefits and opportunities that e-learning systems can provide. Such policies would encourage the e-learning system adoption by students and would enhance the success of the online educational transition. This awareness can be done, for example, through offers of continuing education and/or short awareness meetings.

Moreover, the results suggest that early awareness rising among students by the School management is vital for the adoption of e-learning systems. The use of e-learning systems is relatively new at many higher educational institutions. Therefore, like any technological innovation, it faces difficulties in its launching. The e-learning system makes learners struggle with their habits, which sometimes leads to a reaction of rejection or at best, mistrust. This is apparent both in the appreciation of the usefulness of the system and its ease of use. This feeling could be also increased by the anxiety expressed by many students due to the general negative atmosphere that exists due to the lockdown. The role of management is essential in this case to facilitate the development of a positive attitude towards e-learning systems. Furthermore, the role of the academic staff is crucial to enhance the adoption and the creation of an attractive atmosphere that encourages students to not only virtually assist but also to interact during the online courses' sessions. The availability of technical assistance was also found to be a very significant influence on the intent to adopt e-learning systems. Since a technology can only be used if the technological infrastructure is available, it is essential to strengthen the IT infrastructure in general and the broadband internet connection. Many students have the importance of being technically assisted, especially when they encounter a technical problem during the course's online session.

The insights obtained by this study could be helpful for both academics and practitioners interested on e-learning adoption at the educational sector. Thus, this research helps educational managers to establish effective policies towards e-learning system use that may ensure the education continuity during the Covid-19 pandemic and would enhance the knowledge transfer quality [3, 43]. However, this research has some limitations. Although the results are valid, the tested sample is limited to only one Saudi Business School. It would be interesting in a future study to consider other higher institutions specialized in different fields with a larger number of students. Also, the sampling method could be enriched by taking consideration of the field' differences that exist between students coming from different backgrounds. A future study could also compare the performances of the public and the

private educational sector. Moreover, the current study did not consider the emotional situation, stress, and anxiety caused by the Covid-19 atmosphere that was expressed by many students during the survey and that could possibly impact the adoption of the e-learning system. In addition, the current study is limited to the students' point of view that could be different from the academic staff's. These different additional studies and data could be very valuable for exploring and understanding some causal relationships in the conceptual model and to enhance the results interpretation.

This study attempts to offer a positive and optimistic perspective regarding the online educational student experience in the context of Saudi higher education system. The digital transformation of the higher education sector will continue to change educational practices and learning methods. Future studies could be conducted in this sense and explore the impact of e-learning systems on knowledge sharing and capitalization.

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