The Impact of Course Quality on University Students' Acceptance of Online Practicum

Dhaifallah Saleh Alsuhaymi

***Abstract*—The primary purpose of this study is to explain the acceptance of college students of online practicums at a Saudi public university in the Eastern Province. It aimed to identify the influential factors that could facilitate or hinder college students from accepting online practicum courses, concentrating mainly on the first time the practicum course is delivered online. This study employed the Technology Acceptance Model (TAM) and added a construct of "course quality" to the TAM model to investigate its impact on university students' acceptance of an online practicum. In total, 369 male and female students completed an online questionnaire. The results indicate that the students showed a high acceptance of online practicums. Perceived Course Quality (PCQ) significantly predicts student Perceived Ease of Use (PEOU). PEOU and PCQ positively and significantly affect students' Perceived Usefulness (PU) of online practicums. Also, PU and PEOU significantly affect students' Attitudes (AT) toward accepting online practicums. Further, students' PU and AT significantly affect students' Behavioral Intention (BI) toward accepting online practicums.**

***Index Terms*—Distance education, online learning, practicum course, Technology Acceptance Model (TAM)**

I. Introduction

Technology plays a vital role in teaching and learning in higher education by enhancing the learning process by improving learners' 21st-century skills, such as collaboration, problem-solving, and creativity [1]. Also, adopting technology helps instructors create a stimulating and active learning environment using advanced technology, such as Metaverse, that combines augmented and virtual reality [2]. Hence, instructors shall consider integrating technology into their lessons to contribute to achieving learning objectives efficiently [1]. Indeed, information technology has enhanced the quality of synchronous and asynchronous education. Recently, higher education has been heavily influenced by the COVID-19 pandemic, especially traditional universities that offered courses in person on campus [3]. Due to the precautionary measures during the pandemic, universities closed their doors and had to think of how to ensure the continuity of the educational process. Online learning was considered the best alternative to face-to-face education to maintain education delivery [4].

Online learning is a technology that has flourished and is frequently used to deliver learning to students without temporal or spatial restrictions. The efficacy of adopting either full online or hybrid learning has been acknowledged in many studies in enhancing students learning [5]. So, learning has become more flexible and accessible even during crises such as COVID-19.

Online learning creates new learning opportunities. It allows students to learn at times and places convenient to them [6]. Also, instructors can access courses at any time to enhance or oversee materials and answer student questions [6]. In addition to the time and site flexibility of e-learning, it supports student self-regulated learning, which refers to one's capability to be responsible for acquiring knowledge and skills [7]. Students decide what to learn, when, and how to learn by creating a plan with goals, timelines, and evaluations. However, it also creates new challenges. Many issues and barriers to learning in an online setting may influence an online course's success. According to Salmon [8], the number of participants in an online course, a lack of time and synchronicity, difficulties in managing learners, messaging, and networking all constitute potential problems in an online environment.

Online learning played a significant role during the COVID-19 pandemic in providing education outside physical classrooms as a substitution for in-person instruction [9–11]. The widespread usage of the internet and audio and videoconferencing applications (Zoom, Teams, Google Meet) installed on smartphones, tablets, and laptops have made online learning synchronously efficient [12]. Online learning in this study refers to using distance learning as an alternative vehicle to conventional classroom learning by using computer-mediated communication to provide virtual face-to-face instruction [13]. In Saudi universities, online learning has been increasingly adopted for enhancing student learning experiences [14].

However, several factors highlighted in studies could influence employing online learning [9, 15, 16]. Determining and understanding the most influencing factors could help increase distance learning adoption among university students and ensure its success [10, 17]. Before adopting and employing any technological innovation, policymakers must ensure stakeholders will accept these innovations. Fortunately, applying Technology Acceptance Model (TAM), coined by Davis [18], will show the level of university students' acceptance of distance learning and the extent of their actual practice [19]. Also, adding a construct such as Perceived Course Quality (PCQ) could enlighten course designers about essential elements that shall be considered to enhance college students' acceptance of online practicum courses.

A. Study Purpose

Because online learning could benefit students' practicum experiences, mainly when in-person learning could not be implemented due to the COVID-19 pandemic, this study

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Dhaifallah Saleh Alsuhaymi is with the Department of Curriculum and Instruction, College of Education, Imam Abdulrahman Bin Faisal University, Dammam, 31441, Saudi Arabia. E-mail: dalsuhaymi@iau.edu.sa (D.S.A.)

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aims to identify student perceptions of acceptance of online practicums to ensure successful implementation. Thus, this study determines factors that affect student acceptance of practicum courses in an online environment by examining the relationship among TAM model factors: Perceived Usefulness (PU), Attitude (AT), and Perceived Ease of Use (PEOU). Also, this study added another factor, PCQ, to the TAM model factors to investigate its impact on the model prediction power.

B. Statement of Problem

Due to the COVID-19 pandemic, the virtual learning environment was a viable alternative to traditional face-to-face environments [20]. During the pandemic, Saudi universities suspended all in-person educational activities and moved them to be delivered online. The practicum is one of the mandatory courses in some Saudi university programs, and students must select a workplace to put what they have learned into practice for an academic semester. Due to COVID-19, the practicum course was delivered online using different platforms such as Blackboard and Zoom. The course was redesigned to suit the online environment. Blackboard has been adopted as a Learning Management System (LMS). Lock *et al.* [21] asserted that using LMS supports instructors' meaningful integration of the online environment into the practicum course. To effectively deliver this course, the practicum was designed on Blackboard according to Quality Matters (QM) standards. All the course materials were uploaded on the Blackboard (course syllabi, content, recorded lectures, discussion boards, websites inks, and tutorials). Also, there were weekly synchronous online meetings with the students, and students were asked to use their webcams and present their work. Then, class discussions were held, and feedback was provided.

Also, several expert speakers were invited to share their experiences and thoughts with the students on related subject matters. Regarding learning activities, instructors used tools to enhance students learning and collaboration, such as Word documents shared on One Drive, tutorials, recorded video lectures, forums, discussion boards, and weekly quizzes. For student assessment, instructors relied on presentations, portfolios, observation tasks, mentor-supervisor feedback, and essay reflections. Software like Teams, Zoom, and Blackboard Collaborate played vital roles in holding synchronous lectures. Moreover, instructors used social media applications such as WhatsApp and Telegram to support student learning and address their concerns.

Due to the limited number of studies conducted on online practicum acceptance in the Saudi context, this study sought to determine factors affecting college students' acceptance of online practicums. According to Alhabeeb [22], there is a need to conduct more research exploring online practicums in Middle East countries to enrich the literature. Further, although several studies have examined instructor and administrator perceptions about the quality of online learning, more research has yet to be conducted to investigate student perceptions of the quality of online courses [22].

C. The Significance of the Study

The significance of this study stems from the fact that the university had never offered the practicum course entirely online before COVID-19. So, ensuring its level of acceptance among students is significant. This study will assist curriculum designers and decision-makers at the university in determining student acceptance level of shifting practicum courses from an in-person to online format by investigating the impact of predetermined factors adopted from TAM. Identifying factors most affecting student acceptance of online practicums will help course designers when they decide to deliver practicums online in crises such as the COVID-19 pandemic.

This study also could validate the scale designed according to the TAM, which could be used in future research to investigate university students' adoption of technological innovation. Further, this study was conducted in the Saudi university context because there is little research targeting online practicums in Saudi Arabia. Moreover, this study investigated the impact of students' PCQ as a proposed variable on the TAM model constructs of students' PEOU and PU.

II. Literature Review

A. Online Practicum

The COVID-19 pandemic, which shifted teaching to distance learning formats, has increased the importance of ensuring online learning quality [23]. One type of course affected was practicums. In practicum courses, students visit the workplace and observe how professionals do their jobs, or they may perform tasks under a supervisor's observation [24]. Practicum courses are a student's most significant learning experience because it allows them to employ what they have learned at college in a real work environment and prepare students for their future careers [24, 25]. So, providing a powerful practicum experience is vital to produce professional and qualified workers for the labor market. Due to the COVID-19 crisis, online practicum was the only option for colleges to continue offering practical training. So, practicum courses had shifted from in-field to online delivery.

Iuliano and Mazzilli *et al.* [11] used a questionnaire to explore the satisfaction of 101 graduate students at an Italian science sports university about substituting physical practice with online workshops because of the COVID-19 lockdown. Overall student satisfaction toward substituting in-person classrooms with online learning was 57.7%. The respondents reported a good degree of learning satisfaction construct (67.8%) and computer usage construct in online workshops (62.5%). In comparison, they showed a moderate degree of satisfaction toward social interaction (49.4%) and the perceived value of online workshops (47.6%). Moreover, the results showed that although face-to-face education is preferred over distance education, especially with courses that include hands-on activities, distance education may be an acceptable alternative to face-to-face education, especially when there are emergencies or crises such as the COVID-19 lockdown.

Alhabeeb [22] also conducted a qualitative study to explore six students' perceptions of and online practicum, and the results revealed that five out of six students preferred

the online practicum. Adopting online practicums provides students with several opportunities, including saving time and effort to be more focused and oriented toward finishing the assigned online tasks. There is no wasted time for transportation or moving between classes. Further, online practicums give students more time flexibility; unlike a fixed work schedule, they can work at times convenient to them. Also, Alhabeeb [22] mentioned that online practicums facilitate and expedite communicating with supervisors via emails or discussion forums. Online practicums support the concept of a community of practice; groups of students share their experiences or discuss the same educational situation unlike in field training where students cannot meet with others because they might work in different places and have different learning experiences. Moreover, online practicums enhance students' 21st-century skills such as self-learning, flexibility, adaptability, and use of technology [22, 26, 27]. Thus, online practicums enhance students' professional competencies and help them get familiar with online learning platforms [26].

In contrast, transitioning education online has had some consequences. Some students face many obstacles during online practicums, such as poor internet connections or lack of technical skills to deal with the learning management system [20, 22]. Further, students mentioned needing a quiet and organized place with no distractions in their homes to attend the practicum sessions [22]. Moreover, all students agreed that online practicums could not substitute for live field experiences [20, 22, 26, 27]. In in-person teaching experiences, teachers might experience unexpected situations related to student management or the availability of teaching aids. These situations require teachers to be creative and improvise to deal with these unexpected situations. In contrast, online teaching practicum experiences comprise predesigned and planned teaching scenarios by supervisors trying to simulate in-person teaching experience as much as possible. Therefore, students might still be anxious about field experiences and feel low self-efficacy. Additionally, students cannot develop other skills online, such as communication and interaction with others [20, 22, 26]. Sepulveda-Escobar and Morrison [20] stressed that the online practicum experience creates a learning opportunity for students to be more equipped within an online environment. However, students' lack of online experiences and the absence of technical support training constitute other challenges for students [20, 26].

In addition to the obstacles students may face during distance learning, the e-moderator may face some challenges too. According to the nature of online settings, instructors must redesign their courses to suit the environment. Instructors must adapt their teaching methods, learning activities, and assessment methods to be applicable and purposeful in the online setting [27]. Also, instructors must be familiar with the technology used in online classes and fully prepared to recognize any possible technical problems they may face in advance [8]. Lack of skill in using learning management systems in online courses prevents online instructors from doing their best work. Also, providing feedback, answering student questions, responding to student emails, summarizing, changing course materials, and monitoring student progress are all e-learning instructor responsibilities. Salmon [8] has stated that with many students in an online course, instructors may not be able to perform their roles optimally, negatively affecting student learning.

B. Learning Management System (LMS)

Learning Management Systems (LMSs) are an essential asynchronous element in online learning [6]. They organize the learning environment and give the instructors control over the course [6]. Basically, the LMS constitutes a practical medium between instructors and students [28]. For instance, through an LMS, such as Blackboard, instructors upload course readings, state learning objectives, create assignments and tests, establish discussion boards, see statistics regarding student activity, provide feedback, and so on [28]. Also, students upload their assignments, view course materials, participate in discussion boards, and communicate with classmates and instructors. LMSs provide many different features and differ from one system to another, leading users to accept or reject its use. There are many different LMS platforms, such as Brightspace, Google Classroom, Blackboard, Edmodo, and Moodle [28].

Simanullang and Rajagukguk [28] found Moodle platform is an effective tool to enhance student learning. Also, students highly accepted Moodle for learning purposes at a Ghanaian university [29]. In the practicum course in England, La Velle and Newman *et al.* [30] employed Blackboard as the primary platform for teaching internships during COVID-19. Alghamdi and Alsuhaymi *et al.* [31] used Blackboard as the LMS for virtual training Saudi college students during the COVID-19 pandemic, and students showed a high level of acceptance for e-internships using this system. Generally speaking, selecting the LMS platforms depends on many factors, such as student and instructor needs, features provided by the platform, whether the platform is supported technically, by the institutions, and subscription fees [32]. This study used Blackboard because the university technically supports it and offers free accounts for all instructors and students. In addition, the students and instructors were familiar with using it before the pandemic hit.

C. Theoretical Framework

This study has adopted the TAM model coined by Davis [18] as a theoretical framework that suggests several constructs affect users' adoption of information technology to enhance organization performance, as shown in Fig. 1. According to Davis [18], PEOU refers to the user's perception of how much effort is needed to use the target technology. Hence, in this study, EOU refers to student perceptions regarding the online practicum. The second primary construct in the TAM model is PU. It relates to user perception about the expected benefit they might gain when using the targeted information technology. In this study, PU means student perception of the benefit of only practicum courses. The third construct is Attitude (AT), which is predicted by EOU and PU. It refers to the user's desire to use the target information technology. In this study AT refers to college students' desire to adopt online practicums. According to TAM, PU and AT could predict user

Behavioral Intention (BI) regarding adopting practicum courses in an online environment. BI is a significant factor in predicting the user's actual use of information technology.

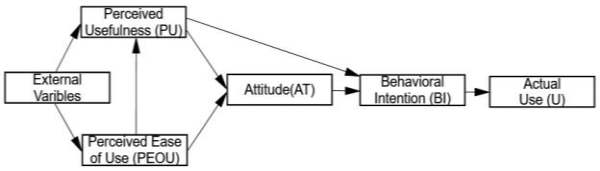

Fig. 1. Davis's TAM model [18].

One of the main objectives of this study is to investigate the students' level of acceptance of online practicums. In addition, this study aims to understand what influences student acceptance of online practicums. As a result, this study examines the correlation among TAM constructs. Also, this study proposes the PCQ construct to investigate its influence on university students' PU and PEOU. PCQ refers to the quality of the design of the practicum course in the online environment. the use of suitable teaching methods, assessments, and teaching strategies.

D. Related Studies to Factors Affecting User Accepting of Online Learning

After reviewing previous literature, several factors could affect student acceptance of an online practicum experience. Rizqullah and Nuha *et al.* [33] conducted a study to explain students' level of online practicum acceptance using the TAM model and flow theory. This study included 340 Indonesian students at Telkom University. The result indicated that attitude, concentration, and perceived benefits explained 82% of students' intention toward online practicums. Further, PEOU accounted for 62% of PU. In addition, 75% of student attitudes toward online practicums could be explained by student perceptions about course easiness use and usefulness.

In the Saudi context, Alghamdi and Alsuhaymi *et al.* [31] used the Unified Theory of Acceptance and Use of Technology (UTAUT) to investigate influential factors that could contribute to increasing student acceptance of electronic training courses at Imam Abdulrahman bin Faisal University. The data was gathered from 397 students. The results revealed that 32.1% of students' intention toward accepting online training courses could be predicted by expected effort (β = 0.24), expected usefulness (β = 0.18), facilitating condition and technology (β = 0.17), and social influence (β = 0.15).

Further, Alqahtani and Alamri *et al.* [9] conducted a study to explore students' acceptance of e-learning using a modified version of TAM. This study included 446 graduate and undergraduate students randomly selected from two Saudi universities. The results revealed that educational quality significantly influenced students' PEOU (β = 0.132) and usefulness of e-learning (β = 0.096). Student attitude toward use e-learning was significantly predicted by students' perception of usefulness of e-learning (β = 0.552) and PEOU (β = 0.280).

Within the circumstances of COVID-19, Mailizar and Almanthari *et al.* [34] used a modified version of the TAM model to explore critical factors affecting teachers' utilization of e-learning in their teaching practices. A total of 161 teachers in Indonesia filled out an electronic questionnaire. The results showed that EOU positively and directly correlated with PU (β = 0.381). EOU and PU were significant and direct predictors for teacher attitude, respectively, β = 0.472 and β= 0.390. Teacher intention was significantly predicted by attitude (β = 0.513) and previous experience in e-learning (β = 0.164).

Researchers have shown that PCQ "is closely related to a series of teaching and learning behaviors in the course teaching process" [16], suggesting that PCQ should be taken seriously. According to Baldwin [35], faculty members are responsible for designing their online course independently. Transforming a face-to-face course to be delivered entirely online requires modifications in content teaching methods, activities, and assessments by course instructors [36]. However, some faculty members lack the skills to create efficient online courses. Thus, educational institutions must establish quality assurance standards and provide their faculty members with the necessary professional development [35].

Moreover, Xie and Li *et al.* [16] investigated the impact of students' PCQ on student satisfaction. A total of 4,812 Chinese undergraduate students participated in this study. These results indicated that online course activities, assessment methods, materials, interactions, and course design positively affect student satisfaction with the online course. Also, Hassanzadeh and Kanaani *et al.* [37] found that the quality of online course content, service, technical support, and learning management system vitally contributes to the success of the adoption of online learning.

Based on the studies mentioned above, it seems that there is a need for researchers to investigate and understand student acceptance of online practicums and to identify the main factors that could encourage student acceptance of online practicums, especially during a crisis.

III. Research Methodology

A. The Study Hypotheses

- H1: Student's Perceived Course Quality (PCQ) significantly affects students' perceived ease of use (PEOU) toward accepting online practicums.
- H2: Student's Perceived Course Quality (PCQ) and Perceived Ease of Use (PEOU) significantly affect students' Perceived Usefulness (PU) toward accepting online practicums.
- H3: Students' Perceived Usefulness (PU) and Perceived Ease of Use (PEOU) significantly affect their Attitude (AT) toward accepting online practicums.
- H4: Student's Perceived Usefulness (PU) and Attitude (AT) significantly affect Behavioral Intention (BI) toward accepting online practicums. Fig. 2 summarizes the study hypotheses.

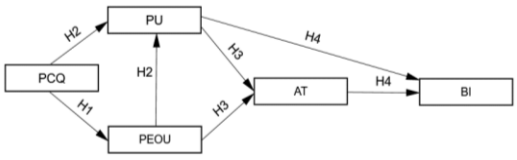

Fig. 2. Summarizing the study hypotheses.

B. The Population

This study targeted male and female undergraduate students in a large public university in the eastern province of Saudi Arabia. This study includes students affiliated with different academic departments enrolled in a practicum course during the COVID-19 pandemic.

C. The Research Instrument

After reviewing related literature, the researcher developed an initial questionnaire to identify university students' acceptance of distance learning based on TAM model constructs. This questionnaire was reviewed by several experts in different departments, including instructional technology, curricula, instruction, measurement, and evaluation, to ensure its construct validity. Also, the researchers conducted exploratory factor analysis (EFA) to ensure convergent validity. Regarding the questionnaire reliability, the researchers conducted Cronbach alpha, and the items measured less than 0.6 were removed.

As a result, the final form of the questionnaire comprised two parts. The first includes demographic data, that is gender and number of online courses. The second comprises 31 items distributed on five constructs: AT (6 items), PCQ (9 items), BI (3 items), PEOU (6 items), and PU (7 items).

D. Descriptive Statistics

A sample of 408 male and female students participated in this study using a questionnaire designed based on a proposed TAM model. Out of 408 surveys, there were 369 valid and completed responses. Table I shows the relative frequency distribution of the study sample according to gender and number of online courses.

TABLE I: RELATIVE FREQUENCY DISTRIBUTION ACCORDING TO THE DEMOGRAPHIC VARIABLES

Variables		Frequency	Percent
Gender	Male	122	33.10
	Female	247	66.90
	Total	369	100.0
Number of online courses	Never	65	17.60
	1 to 2 courses	66	17.90
	3 to 4 courses	12	3.300
	More than 5 courses	226	61.20
	Total	369	100.0

E. The Instrument Validity

For the purpose of this study, the researchers used an online questionnaire to reach the largest population. The questionnaire encompasses two main sections. The first concerns demographic information. The second was designed according to TAM model factors to include 44 items distributed unequally to represent five factors [PCQ, AT, PU, PEOU, BI] adopted from different studies [15, 34, 38, 39]. Evaluation and measurement specialists and experts in educational technology reviewed the instrument to ensure the construct and face validity. Changes were made to some items' language and structure based on their comments. Also, the convergent and discernment validity of the questionnaire was checked using EFA to identify the number of factors and the items with practically significant loading values (>0.5) on each factor [40]. The researchers entered the questionnaire items (31) using the principal axis factoring (PAF) method with Promax rotation. The results indicated that Bartlett's Test of Sphericity is significant, and the Kaiser-Meyer-Olkin Measure (KMO) is high (0.944) which, means the sample is adequate for the model. Five factors were extracted [CQ, AT, PU, PEOU, BI]. These factors explain 62.05% of the total variance, as shown in Table II. The lowest value was 0.49 for the (AT17) factor, which is close to 0.5, a rule of thumb in the research, so, the researchers decided to keep it. The rest of the items had an acceptable loading (above 0.5). Pearson correlation was applied to examine the intercorrelation among TAM constructs, and the results showed significant positive correlations among TAM factors at $p < 0.05$, as shown in Table III.

TABLE II: PATTERN MATRIX OF DEGREE OF SATURATION OF TAM FACTORS

	Factor				
	Course Quality	Perceived Usefulness	Attitude	Perceived Ease of Use	Behavioral Intention
PCQ15	0.925				
PCQ21	0.793				
PCQ20	0.762				
PCQ16	0.744				
PCQ19	0.719				
PCQ18	0.671				
PCQ11	0.653				
PCQ17	0.633				
PCQ13	0.631				
PU17		0.920			
PU19		0.771			
PU15		0.722			
PU16		0.653			
PU18		0.570			
PU14		0.510			
PU20		0.508			
AT12			0.781		
AT11			0.772		
AT14			0.768		
AT13			0.736		
AT16			0.502		
AT17			0.485		
PEOU15				0.815	
PEOU14				0.725	
PEOU13				0.684	
PEOU12				0.603	
PEOU11				0.574	
PEOU16				0.524	
BI12					0.935
BI13					0.913
BI11					0.528

Note: Extraction Method: Principal Axis Factoring; Rotation Method: Promax with Kaiser Normalization; a. Rotation converged in 8 iterations.

TABLE III: INTERCORRELATIONS OF THE PROPOSED TAM MODEL CONSTRUCTS

Constructs	CQ	PU	AT	PEOU	BI
CQ	-				
PU	0.639	-			
AT	0.776	0.693	-		
PEOU	0.582	0.554	0.509	-	
BI	0.580	0.536	0.533	0.463	-

Note. All coefficients are significant at $p < 0.01$

F. The Instrument Reliability

To ensure the questionnaire's reliability, the researcher used Cronbach's Alpha. The Cronbach's alpha is 0.96 for the total questionnaire. Also, Cronbach's alpha coefficient for the extracted factors ranges from 0.84 for PEOU to 0.93 for PCQ and AT. Thus, the questionnaire is suitable and reliable. Table III shows the Cronbach's alpha values for all the factors.

G. Descriptive Statistics

Table IV shows the mean and slandered deviation for all the factors. The BI has the highest mean (3.40), and the respondents' direction leans toward strongly agree. Further, the respondents' direction for PEOU is strongly agree with an average of 3.31, whereas the respondents' direction for PCQ, AT, and PU are agree with averages of 3.13, 3.09, and 2.97, respectively.

TABLE IV: DESCRIPTIVE STATISTICS FOR ALL THE VARIABLES IN THE PROPOSED TAM MODEL STATISTICS

Constructs	Number of Items	Mean	St. Deviation	Cronbach Alpha	Direction
PU	7	2.97	0.627	0.90	Agree
AT	6	3.09	0.687	0.93	Agree
PEOU	6	3.31	0.49	0.84	Strongly Agree
PCQ	9	3.13	0.580	0.93	Agree
BI	3	3.40	0.57	0.87	Strongly Agree

IV. RESULTS

A. The First Hypothesis

Multiple regression was conducted to test the first research hypothesis that describes the existence of significant relationships (effects) between PEOU and PCQ of online practicums. As shown in Tables V and VI, the overall regression is statistically significant (F (1,367) = 187.768, $p < 0.05$) with $R^2 = 0.338$, which means 33.8% of the variance in PEOU was predicted by PCQ. Using Beta weight, the researchers determined a significant contribution of PCQ in explaining the variability in PEOU ($\beta = 0.582$, $p < 0.05$), as shown in Table VII. As a result, the hypothesis was accepted.

TABLE V: SUMMARY OF LINEAR REGRESSION ANALYSIS RELATED TO STUDENTS' EASE OF USE PERCEPTIONS

Model	R	R^2	Adjusted R^2	Std. Error of the Estimate
1	0.582[a]	0.338	0.337	0.40291

Note: Predictors: (Constant), CQ

TABLE VI: ANOVA ANALYSIS RELATED TO STUDENTS' EASE OF USE PERCEPTIONS

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	30.481	1	30.481	187.768	0.000[b]
	Residual	59.576	367	0.1620		
	Total	90.057	368			

Note: Dependent Variable: PEOU; b. Predictors: (Constant), PCQ

TABLE VII: COEFFICIENTS RELATED TO STUDENTS' EASE OF USE PERCEPTIONS AND PERCEIVED COURSE QUALITY

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.766	0.115		15.334	0.000
	PCQ	0.496	0.036	0.582	13.703	0.000

B. The Second Hypothesis

Multiple regression was conducted to test the second research hypothesis that describes the existence of significant relationships (effects) between at least one of the following variables—PEOU and PCQ—and PU of online practicums. As shown in Tables VIII and IX, the overall regression is statistically significant (F (2,366) = 154.733, $p < 0.05$) with $R^2 = 0.458$, which means 45.8% of the variance in PU was predicted by PEOU and PCQ.

Using Beta weight, the researchers determined the significant contribution of PEOU and PCQ in explaining the variability in PU. Course quality ($\beta = 0.479$, $p < 0.05$) has more weight than PEOU ($\beta = 0.275$, $p < 0.05$) in explaining PU, as shown in Table X. As a result, the hypothesis was accepted. In other words, the predictors accounted for significant variance in PU.

TABLE VIII: SUMMARY OF LINEAR REGRESSION ANALYSIS RELATED TO THE USEFULNESS EXPECTANCY'S PREDICTORS

Model	R	R^2	Adjusted R^2	Std. Error of the Estimate
1	0.677[a]	0.458	0.455	0.46284

Note: Predictors: (Constant), PEOU, CQ

TABLE IX: ANOVA ANALYSIS RELATED TO THE USEFULNESS EXPECTANCY

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	66.294	2	33.147	154.733	0.000[b]
	Residual	78.404	366	0.2140		
	Total	144.698	368			

Note: Dependent Variable: PU; b. Predictors: (Constant), PEOU, CQ

TABLE X: COEFFICIENTS RELATED TO PERCEIVED USEFULNESS'S PREDICTORS

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	0.198	0.169		1.171	0.242
	CQ	0.517	0.051	0.479	10.123	0.000
	PEOU	0.349	0.060	0.275	5.813	0.000

C. The Third Hypothesis

Multiple regression was conducted to test the third research hypothesis that states the existence of significant relationships (effects) between PEOU and PU with students' AT towards online practicum. As shown in Table XI and Table XII, the overall regression was statistically significant (F (2,366) = 184.675, $p < 0.05$) with $R^2 = 0.502$, which means PU and PEOU accounted for 50.2% of the variance in students' AT toward accepting online practicum.

TABLE XI: SUMMARY OF LINEAR REGRESSION ANALYSIS RELATED TO STUDENTS' ATTITUDE

Model	R	R^2	Adjusted R^2	Std. Error of the Estimate
1	0.709[a]	0.502	0.500	0.48619

Note: Predictors: (Constant), PU, PEOU

TABLE XII: ANOVA ANALYSIS RELATED TO STUDENTS' ATTITUDE

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	87.307	2	43.654	184.675	0.000[b]
	Residual	86.515	366	0.2360		
	Total	173.822	368			

Note: Dependent Variable: AT; b. Predictors: (Constant), PU, PEOU

Using Beta weight in Table XIII, the researcher determines the significant contribution of PEOU and PU in explaining the variability of students' AT. PU ($\beta = 0.592$, $p < 0.05$) accounted for the greatest significant amount of variance in AT. PEOU also significantly impacted AT ($\beta = 0.181$,

$p < 0.05$). So, the hypothesis was accepted. In other words, at least one of the predictors accounted for significant variance in Attitude.

TABLE XIII: COEFFICIENTS RELATED TO THE ATTITUDE'S PREDICTORS

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	0.325	0.175		1.861	0.064
	PEOU	0.251	0.062	0.181	4.086	0.000
	PU	0.649	0.049	0.592	13.377	0.000

D. The Fourth Hypothesis

Multiple regression was conducted to test the fourth research hypothesis that describes the existence of significant relationships (effects) between PU and AT with BI toward adopting an online practicum. As shown in Table XIV and Table XV, the overall regression is statistically significant ($F(2,366) = 93.252$, $p < 0.05$) with $R^2 = 0.338$, which means PU expectancy and PEOU accounted for 33.8% of the variance in students' intention toward accepting an online practicum.

Using Beta weight in Table XVI, the researchers determined a significant contribution of AT and PU in explaining the variability in student BI. PU ($\beta = 0.322$, $p < 0.05$) accounted for a greater significant amount of variance in BI, and AT also significantly affects BI ($\beta = 0.310$, $p < 0.05$). The hypothesis is accepted. In other words, the predictors accounted for significant variance in student intention. Fig. 3 summarizes the Beta weights for all the applied regression analyses.

TABLE XIV: SUMMARY OF REGRESSION ANALYSIS FOR PREDICTORS EXPLAINING THE STUDENTS' BEHAVIORAL INTENTION

Model	R	R^2	Adjusted R^2	Std. Error of the Estimate
1	0.581[a]	0.338	0.334	0.46818

Note: Predictors: (Constant), PU, AT

TABLE XV: ANOVA ANALYSIS RELATED TO STUDENTS' BEHAVIORAL INTENTION

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	40.881	2	20.440	93.252	0.000[b]
	Residual	80.225	366	0.219		
	Total	121.106	368			

Note: Dependent Variable: BI; b. Predictors: (Constant), PU, AT

TABLE XVI: COEFFICIENTS RELATED TO STUDENTS' BEHAVIORAL INTENTION PREDICTORS

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.724	0.125		13.767	0.000
	AT	0.259	0.049	0.310	5.253	0.000
	PU	0.294	0.054	0.322	5.456	0.000

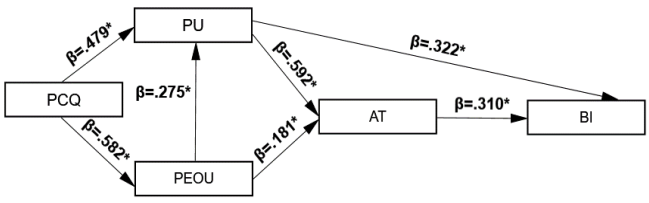

Fig. 3. Model summarizing relationships among TAM's constructs.

V. DISCUSSION

The primary purpose of this study is to determine the influential factors that affected student intention to accept online practicum procedures during the COVID-19 pandemic at a Saudi university. What distinguishes this study from others is the sounding context. This study was conducted during the COVID-19 pandemic to identify college students' acceptance of practicum courses in an online format in Saudi Arabia, where a small body of literature has investigated online practicum. Hence, it is important to examine college students' BI to advance policymakers' and curriculum planners' understanding of the factors that could encourage or hinder student acceptance of online learning practicums. Consequently, they could take appropriate measures to increase and accelerate students' acceptance of e-training when it is necessary to implement practicum courses remotely, such as during the COVID-19 crisis. To achieve this purpose, the researcher used the TAM model [15] with the addition of practicum PCQ as an external factor. The correlations between TAM constructs and PCQ were investigated, and the results show several critical points to be discussed.

To begin with, the study proposes that PCQ has a significant and direct effect on college students' PEOU) and PU of online practicums. This finding aligns with previous studies [9, 41], confirming a significant correlation between PCQ, PEOU, and PU constructs. Therefore, when students perceive the course is designed with high quality (through assessment methods, different learning activities, different teaching styles, sufficient learning materials, etc.) and considerate of students' demands, students will feel the e-learning course is meaningful, useful, and easy to use [41, 42]. Cidral and Oliveira *et al.* [42] shed light on the importance of e-learning environment quality. E-learning platforms should be easy to use and provide students with features such as collaboration and communication. Besides the quality of the e-learning platform, Cidral and Oliveira *et al.* [42] asserted the significance of the course content quality being beneficial, engaging, understandable, and well organized. Abdel-Haq and Asfoura [43] recommended that universities should ensure the quality of online courses by developing quality standards assurance, continuously improving these standards, and ensuring courses meet the standards before offering online courses.

This study also found that a significant portion of AT is predicted by PU and PEOU. These findings are consistent with other relevant studies in the literature [9, 44, 45]. Therefore, PU and PEOU positively and significantly contribute to understanding AT toward adopting online practicums. As practical implications for these results, university policymakers should target students' PU and PEOU to form a positive AT toward online practicum. For example, to increase PU, a university may increase student awareness of the importance of online practicums along with their purpose and benefits. Likewise, to increase PEOU, faculty members could adopt online applications and software that do not require extra effort for students to use them.

This study's results also indicate that AT significantly predicts BI. This finding aligns with a large body of literature

[9, 31, 34, 45]. Further, this study's results revealed that PU positively and significantly affects students' intention to accept an online practicum. This result is consistent with other studies [9, 31, 45]. Alqahtani and Alamri *et al.* [9] pointed out that course designers could increase higher education students' acceptance of e-learning by targeting PU and assessing student demands and expectations and considering these demands in the e-learning course.

In contrast, Mailizar and Almanthari *et al.* [34] found that PU was not a significant predictor for user intention to accept e-learning during COVID-19. The authors attributed the results to the participants' previous experiences in e-learning. They concluded that PU would influence user intention to accept e-learning when the users are novices of e-learning and do not have prior experience with it. Also, Mailizar and Almanthari *et al.* [34] pointed out another reason for the lack of significant impact of PU on BI: adopting e-learning during the COVID-19 crisis was not optional; most educational institutions worldwide shifted to e-learning. So, when users have no choice but to accept it, PU might have less impact on users adopting e-learning. This reason could be arguable because it conflicts with the primary purpose of the technology acceptance model. TAM aims to accelerate and make adopting innovative technology more convenient by shedding light on the most critical factors, such as PU, that affect user adoption of an innovation [18]. With that being said, even though users had to use e-learning, they first had to be convinced of the benefits and importance of e-learning during the COVID-19 pandemic. However, the targeted audience in the Mailizar and Almanthari *et al.* [34] study was already familiar with e-learning before the pandemic; They were e-learning experts. E-learning was not an innovative technology for the targeted audience. Consequently, the sample characteristics in Mailizar and Almanthari *et al.*'s study [34] might be the primary reason that led to their conclusion.

To sum up, course designers should consider online practicum course quality (PCQ) since it has a positive relationship with student PEOU and PU. In this study, the course was designed according to Quality Matters standards regarding course objectives, teaching methods, assessment tools, and learning activities, which could be the reason for positively affecting PEOU and PU.. When students perceive that the online practicum is easy to use and useful, their attitude toward accepting the online practicum course will be positively affected. When students hold a positive attitude and are convinced of the importance of the online practicum course, their BI to accept the online practicum course will increase.

VI. Conclusion and Future Research

This study explored student acceptance of online practicums at a large public Saudi university in the Eastern Province using an extended version of the TAM model. The results indicated that PCQ explained a significant amount of variation in PEOU and PU of online practicums. Also, the significant relationships between AT and PEOU were confirmed. Moreover, BI toward using e-learning in practicum courses is significantly predicted by AT and PU.

It is worth mentioning that this study does not advocate replacing face-to-face practicums with online practicums. However, this study suggests adopting an online practicum as an alternative or assistive approach when a face-to-face practicum is challenging to be applied, as the world witnessed during the COVID-19 crisis. Further, future studies could benefit from this study's findings and explore the potential of conducting practicum courses in hybrid settings, where students could benefit from online platforms in addition to face-to-face practices.

This study was limited to the Saudi context. Thus, this study's results cannot be generalized to other learning practicum experiences because practicum course procedures differ from one university to another and from one program to another. So future studies could be applied in different contexts to assess more perspectives about online practicum experiences. Also, this study is questionnaire based, and future studies could adopt other data collection instruments such as interviews, focus groups, or observations. Moreover, this study targeted college students. Future studies could include faculty member perspectives on online practicum experiences. Additionally, future research could apply structural equation modeling techniques to provide more insight into the relationships among all the TAM model constructs. Finally, there may be other influential factors than those investigated in this study. Future studies may suggest other independent or dependent variables to be investigated.

Conflict of Interest

The author declares no conflict of interest.

References

[1] T. Kabudi, I. Pappas, and D. H. Olsen, "AI-enabled adaptive learning systems: A systematic mapping of the literature," *Computers and Education: Artificial Intelligence*, vol. 2, 100017, 2021.

[2] Y. K. Dwivedi, L. Hughes, A. M. Baabdullah, S. Ribeiro-Navarrete, M. Giannakis, M. M. Al-Debei, and S. F. Wamba, "Metaverse beyond the hype: Multidisciplinary perspectives on emerging challenges, opportunities, and agenda for research, practice and policy," *International Journal of Information Management*, vol. 66, 102542, 2022, https://doi.org/10.1016/j.ijinfomgt.2022.102542

[3] L. S. Agrati, D. Burgos, P. Ducange, P. Limone, R. Pecori, L. Perla, P. Picerno, P. Raviolo, and C. M. Stracke, "Bridges and mediation in higher distance education: HELMeTO 2020 report," *Education Sciences*, vol. 11, no. 7, p. 334, 2021, https://doi.org/10.3390/educsci11070334

[4] H. Baytiyeh, "Online learning during post-earthquake school closures," *Disaster Prevention and Management: An International Journal*, vol. 27, no. 2, pp. 215–227, 2018, doi: 10.1108/DPM-07-2017-0173

[5] P. Serdyukov, "Innovation in education: what works, what doesn't, and what to do about it?" *Journal of Research in Innovative Teaching & Learning*, vol. 10, no. 1, pp. 4–33, 2017.

[6] M. Z. Hoq, "E-Learning during the period of pandemic (COVID-19) in the kingdom of Saudi Arabia: an empirical study," *American Journal of Educational Research*, vol. 8, no. 7, pp. 457–464, 2020.

[7] D. H. Schunk and B. J. Zimmerman, *Self-regulated Learning: From Teaching to Self-Reflective Practice*, Guilford Press, 1998.

[8] G. Salmon, *E-moderating: The Key to Online Teaching and Learning*, Routledge, 2012.

[9] M. A. Alqahtani, M. M. Alamri, A. M. Sayaf, and W. M. Al-Rahmi, "Exploring student satisfaction and acceptance of e-learning technologies in Saudi higher education," *Frontiers in Psychology*, vol. 13, 939336, 2022, doi: 10.3389/fpsyg.2022.939336

[10] R. M. Tawafak, I. Y. Alyoussef, and W. M. Al-Rahmi, "Essential factors to improve student performance using an e-learning model: review study," *International Journal of Interactive Mobile Technologies*, vol. 17, no. 3, 2023.

[11] E. Iuliano, M. Mazzilli, S. Zambelli, F. Macaluso, P. Raviolo, and P. Picerno, "Satisfaction levels of sport sciences university students in online workshops for substituting practice-oriented activities during the COVID-19 lockdown," *Education Sciences*, vol. 11, no. 10, p. 600, 2021, https://doi.org/10.3390/educsci11100600

[12] A. S. Al-Adwan, N. Li, A. Al-Adwan, G. A. Abbasi, N. A. Albelbis, and A. Habibi, "Extending the Technology Acceptance Model (TAM) to predict university students' intentions to use metaverse-based learning platforms," *Education and Information Technologies*, pp. 1–33, 2023.

[13] L. Harasim, "Online education: A new domain," in *Mindweave: Computers, Communications and Distance Education*, R. Mason and T. Kaye, Eds. Oxford: Pergamon, 1989, pp. 50–62.

[14] A. Muhammad, A. Shaikh, Q. N. Naveed, and M. R. N. Qureshi, "Factors affecting academic integrity in e-learning of Saudi Arabian Universities. An investigation using Delphi and AHP," *IEEE Access*, vol. 8, pp. 16259–16268, 2020.

[15] S. Taylor and P. A. Todd, "Understanding information technology usage: A test of competing models," *Information Systems Research*, vol. 6, no. 2, pp. 144–176, 1995.

[16] Q. Xie, T. Li, and J. Lee, "Analysis of the impact of students' perception of course quality on online learning satisfaction," *Educational Technology International*, vol. 22, no. 2, pp. 255–283, 2021.

[17] S. P. John, "The integration of information technology in higher education: A study of faculty's attitude towards IT adoption in the teaching process," *Contadur ́ay Administraci ́on*, vol. 60, pp. 230–252, 2015.

[18] F. D. Davis, "Perceived usefulness, perceived ease of use, and user acceptance of information Technology," *MIS Quarterly*, vol. 13, no. 3, pp. 319–340, 1989.

[19] E. M. Rogers, *Diffusion of Innovations*, 5th ed. New York, NY: Free Press. Routledge, 2003.

[20] P. Sepulveda-Escobar and A. Morrison, "Online teaching placement during the COVID-19 pandemic in Chile: Challenges and opportunities," *European Journal of Teacher Education*, vol. 43, no. 4, pp. 587–607, 2020.

[21] J. Lock, C. Johnson, N. Altowairiki, A. Burns, L. Hill, and C. P. Ostrowski, "Enhancing instructor capacity through the redesign of online practicum course environments using universal design for learning," *Research Anthology on Remote Teaching and Learning and the Future of Online Education*, IGI Global, 2023, pp. 294–314.

[22] E. S. Alhabeeb, "Reflections of six student teachers enrolled in an online practicum-case study," *Inf. Sci. Lett.*, vol. 12, no. 3, pp. 1343–1352, 2023.

[23] B. Means and J. Neisler, "Suddenly online: A national survey of undergraduates during the COVID-19 pandemic," *Digital Promise*, 2020.

[24] R. Al-Jarf, "Emergency student practicum during the pandemic at Saudi universities," *Online Submission*, 2022.

[25] K. Smith and L. Lev-Ari, "The place of the practicum in pre-service teacher education: The voice of the students," *Asia-Pacific Journal of Teacher Education*, vol. 33, no. 3, pp. 289–302, 2005.

[26] Ç. Atmaca, "Online teaching practicum procedures during the COVID-19 pandemic in Turkish EFL context," *E-Learning and Digital Media*, pp. 1–18, 2023.

[27] V. Brinia and P. Psoni, "Online teaching practicum during COVID-19: The case of a teacher education program in Greece," *Journal of Applied Research in Higher Education*, vol. 14, no. 2, 610–624, 2022.

[28] N. H. S. Simanullang and J. Rajagukguk, "Learning Management System (LMS) based on moodle to improve students learning activity," *Journal of Physics: Conference Series*, vol. 1462, no. 1, 012067, February 2020.

[29] R. Quansah and C. Essiam, "The use of learning management system (LMS) moodle in the midst of COVID-19 pandemic: Students' perspective," *Journal of Educational Technology and Online Learning*, vol. 4, no. 3, pp. 418–431, 2021.

[30] L. Velle, S. Newman, C. Montgomery, and D. Hyatt, "Initial teacher education in England and the Covid-19 pandemic: Challenges and opportunities," *Journal of Education for Teaching*, vol. 46, no. 4, pp. 596–608, 2020.

[31] A. M. Alghamdi, D. S. Alsuhaymi, F. A. Alghamdi *et al.*, "University students' behavioral intention and gender differences toward the acceptance of shifting regular field training courses to e-training courses," *Educ Inf Technol*, vol. 27, pp. 451–468, 2022, https://doi.org/10.1007/s10639-021-10701-1

[32] N. N. M. Kasim and F. Khalid, "Choosing the right learning management system (LMS) for the higher education institution context: A systematic review," *International Journal of Emerging Technologies in Learning*, vol. 11, no. 6, 2016.

[33] M. F. A. Rizqullah, H. H. Nuha, and R. Yasirandi, "Analysis of e-learning indonesian student acceptance behavior in online practicum using tam and flow theory," in *Proc. 2022 1st International Conference on Software Engineering and Information Technology (ICoSEIT)*, November, 2022, pp. 57–60.

[34] M. Mailizar, A. Almanthari, and S. Maulina, "Examining teachers' behavioral intention to use e-learning in teaching of mathematics: An extended TAM model," *Contemporary Educational Technology*, vol. 13, no. 2, ep298, 2021.

[35] S. aldwin, "Assimilation in online course design," *The American Journal of Distance Education*, vol. 33, no. 3, pp. 195–211, 2019.

[36] J. R. Savery, "Be vocal: Characteristics of successful online instructors," *Journal of Interactive Online Learning*, vol. 4, no. 2, pp. 141–152, 2005

[37] A. Hassanzadeh, F. Kanaani, and S. Elahi, "A model for measuring e-learning systems success in universities," *Expert systems with Applications*, vol. 39, no. 12, pp. 10959–10966, 2012.

[38] D. S. Alsuhaymi and A. M. Alghamdi, "An Investigation of the factors that predict university instructors' intentions to adopt social media into their teaching," *Journal of Educators Online*, vol. 18, no. 1, 2021.

[39] F. D. Davis, R. P. Bagozzi, and P. R. Warshaw, "User acceptance of computer technology: A comparison of two theoretical models," *Management Science*, vol. 35, no. 8, pp. 982–1003, 1989.

[40] J. F. Hair, W. C. Black, B. J. Babin, and R. E. Anderson, *Multivariate Data Analysis: Pearson New International Edition PDF eBook*, Pearson Higher Ed., 2013.

[41] M. A. Almaiah, M. A. Jalil, and M. Man, "Extending the TAM to examine the effects of quality features on mobile learning acceptance," *Journal of Computers in Education*, vol. 3, pp. 453–485, 2016.

[42] W. A. Cidral, T. Oliveira, M. D. Felice, and M. Aparicio, "E-learning success determinants: Brazilian empirical study," *Computers & Education*, vol. 122, pp. 273–290, 2018.

[43] M. S. Abdel-Haq and E. Asfoura, "Evaluating the quality of e-courses from the students perception and e-course quality evaluation metrics (DAU-EQEM) at Dar Al Uloom University," *Turkish Journal of Computer and Mathematics Education (TURCOMAT)*, vol. 12, no. 6, pp. 1962–1969, 2021.

[44] R. Sefriani and R. Sepriana, "Technology acceptance model: the use of e-study applications in e-learning," *Journal of Education Technology*, vol. 6, no. 4, 2022.

[45] W. M. Al-Rahmi, A. I. Alzahrani, N. Yahaya, N. Alalwan, and Y. B. Kamin, "Digital communication: Information and Communication Technology (ICT) usage for education sustainability," *Sustainability*, vol. 12, no. 12, 5052, 2020.

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