Determinants of Using Digital Learning Platforms in Higher Tourism Education Environment

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Abstract

The aim of this study is to identify the factors that affect students' engagement and satisfaction with digital learning platforms and to examine how these factors affect their intentions to use the digital learning platforms. Data were obtained from 324 undergraduates from different tourism and hotel faculties who went through a fully online learning experience during the COVID19 pandemic. Therefore, the study focused on digital textbook systems that were initiated during the COVID-19 outbreak and are still in use today. The findings showed that academic flexible material delivery and the teaching staff's role have a positive impact on perceived usefulness and that they also indirectly affect students' intentions to use digital learning platforms regularly. Additionally, it was discovered that the perceived usefulness had a direct positive influence on students' engagement, satisfaction, and intention to use the digital learning platforms continuously, as well as an indirect impact on usage intention via the students' engagement and satisfaction. These findings imply that, in light of student intention to use these platforms in perpetuity, flexible content delivery, a favorable teaching staff role, the perceived usefulness, student engagement, and student satisfaction should be considered in the design and development of the DLPs.

Keywords: Digital learning platforms, teaching staff role, flexible content delivery, perceived usefulness, student engagement, and student satisfaction.

1. Introduction

In the contemporary digital economy, any business success is ascribed to the successful use of technologies related to information and communication (Marzouk, 2022). According to Dumpit and Fernandez (2017), higher education (HE) are not insulated from these quickly evolving technology innovations and cannot afford to fall behind them because they can offer the academic community invaluable insights. Simultaneously, universities have also seen some upheaval as a result of the epidemic (Elshaer & Huang, 2023), with campuses being closed by governments around the world in an effort to curb the virus' spread (Elshaer, 2021). The changes that pushed the universities all across the world to

implement online learning choices for faculty and students (UNESCO, 2020). As a result, digital technology began to be used in one-to-one (1:1) lecture and classroom hall settings, with one smartphone, tablet or laptop for each student (Zheng et al., 2016). As a result of this shift in how education is offered, educators are under a lot of pressure because their primary responsibility is to combine technological advancements with skill development (Elshaer & Huang, 2023). In this regard, educators must be conversant with the use of digital textbooks (Gu et al., 2015).

Egypt has been constructing its technological infrastructure since 1985 in an effort to inspire educators and learners to use online platforms, and it has continued to promote technology in education, particularly the HE (El-Khouly, 2018). Between 2013 and 2019, internet usage in Egypt substantially grew, reaching almost 51 million users. 73.81% are university students, and 44.3% use the Internet for learning reasons (Ministry of Communications and Information Technology, 2015). However, the manner that students interact with the lecturer, other students, and the content in digital courses is quite different than they would in a conventional educational environment. Copyright and technology concerns, current information, and digital media-based learning are only a few of the numerous difficulties associated with using these textbooks. Also, using the digital learning platforms, interaction would be relatively limited without the use of adequate tools. Having little interaction can lower students' engagement and satisfaction and have an impact on their performance (Noel-Levitz, 2011). So, in order to engage in their education, students must be encouraged and equipped to utilize digital textbooks (Bikowski & Casal, 2018). Recently, the HE institutions have concentrated on strengthening digital transformation plan, which has seen them devote their funds into online learning platforms, to meet the students' needs, raise the standard of the HE, and better serve student (El-Sayad et al., 2021). Many HE institutions in Egypt have benefited from the availability of Internet resources for the delivery of educational materials, whether through official educational platforms like university websites or through cost-free communication tools like Zoom and Google Classroom meetings (Sobaih et al., 2020). Additionally, many academic staff members communicate with their students simply by using social media platforms like WhatsApp, and YouTube (Sobaih et al., 2020).

Studies examining ICT's significance in the HE have multiplied as a result of the technology's enormous popularity. Bendary (2020), for example, has emphasized the importance of devoting significant time and effort to improving the quality of accessible digital textbook platforms in order to expand their use in a variety of educational settings. Especially, a digital learning experience, in which students engage more with a learning platform online and are separated from their teachers and colleagues, may affect student satisfaction and, in turn, intention to use. According to Henrie et al. (2015), online learning can be hindered by a number of major challenges, including low student engagement and satisfaction in technologically mediated learning platforms.

Despite the undeniable potential of d-learning and its strategic value, there are still questions about its efficacy, and it is not yet widely accepted. Concerns include low engagement rates and a lack of commitment on the side of e-learners (Allen & Seaman, 2013), and poor academic satisfaction (Eom & Arbaugh, 2011). Many research has been conducted to evaluate student perceptions and attitudes about the use of online courses in the Egyptian HE (El-Seoud et al., 2014; Sobaih et al., 2020). Undergraduate students' online behavioral intentions have, however, received little attention from researchers, and as a result, little is known about how these students' online behavior is formed. Over the past ten years, a body of research has emerged that identifies factors of e-learning success (Alshare et al., 2011; Eom & Arbaugh, 2011; Mashaw, 2012; Xu et al., 2014), and this study identifies a number of aspects that need to be addressed in order to fully capitalize on the digital learning platforms. The primary objective of this research is to identify and look into the factors that influence students' behavioral intentions to use digital textbook platforms introduced in the wake of the COVID-19 epidemic in the realm of higher tourism education.

2. Theoretical background and hypotheses development

Higher education programs frequently use online and blended learning, and there is an ongoing trend of programs switching from conventional face-to-face classrooms to these formats (Dziuban et al., 2018). According to Juhary (2014), learning platforms enable the integration of critical aspects for learning and teaching. The advantages of adopting e-content as supplemental tools for learning are provided to students through the online/digital learning platforms, which also speed up course management. Paul and Jefferson (2019) indicate that regardless of the delivery style, it is possible to obtain comparable teaching and learning outcomes, psychological stability, and satisfaction through these platforms. However, creating rich and well-designed digital teaching, learning, and evaluation tools takes time. In particular, many higher education institutions had their doubts regarding the learning platforms' potential to support in-class learning and/or individual study at first once they were introduced (Juhary, 2014). After a few years of rapid expansion, the virtual online education sector has finally reached a steady development stage. According to Xu and Zhou (2020), platform operators can suggest optimization techniques to enhance user experience, assist the online education sector in getting past a development roadblock, and ultimately realize the objectives of optimizing

The following section makes assumptions about the factors that could affect students' intentions to utilize digital learning platforms in an effort to reduce inequity in online learning and encourage student use of those platforms.

2.1 Flexible Content Delivery

These days, learning resources (video or recorded assets) are presented in an interactive way that enables students to review them anytime they choose. As a result, funding must be allocated to content delivery systems that are adaptable enough to provide access to educational content, cost-effective usage of e-textbooks, and open educational materials on different devices (Elshaer & Huang, 2023; Binnawas et al., 2020). According to Prasad and Dhal (2023), the ability for students to study in their own manners, at their own times of convenience, in their own locations, and from a variety of sources would result from the integration of the learning resources into flexible platforms. The flexible material delivery systems would provide students the ability to study at a lower cost (Binnawas et al., 2019). In this way, the online education platform will become an important tool for teaching students in more inventive and flexible methods. Specifically, students found it simple to utilize the digital platform because it was accessible via computers or mobile devices with internet connection. Designing and creating online and remote learning programs utilizing the aspects of Universal Design for Learning, such as online educational platforms, is one strategy to ensure active student involvement (Katz, 2013).

Flexible content delivery can be represented through examinations, assignments, and discussions that teachers can quickly modify based on student requirements or conditions (Bendary, 2020). Furthermore, there will be a space for teachers' recorded information, and assignments or other student activities may be taken on a regular and fast basis (Basilaia et al., 2020). Similarly, Bendary (2020) argued that students can be given the option to take assignments and activities in a more flexible way. Also, D-learning can provide more material on a topic than a traditional education class (Hoskova & Rosicka, 2015). In this regard, Ali and Ahmad (2011) claimed that students in online learning contexts are more likely to be fulfilled if the learning materials are relevant and valuable and include real-life examples, facts, and cases.

Furthermore, learning material characteristics relate to distant learning satisfaction. In the current study, e-textbooks contained set content that could not be changed; however, a digital book or e-text with adaptive characteristics can increase student satisfaction. As a result, the researchers arrived to the following hypotheses:

H1: DLPs' flexible content delivery has a positive impact on DLPs' perceived usefulness.

H1a: DLPs' Flexible Content Delivery has an indirect impact on student behavioral intention to use the digital learning platforms through their perceived usefulness.

2.2 Teaching Staff Role

As a way of ensuring successful digital student learning and engagement, several studies have highlighted the significance of lecturers (Moore & Neary, 2014). According to Khan (2005), a teacher in online learning plays a significant part in whether the program's goals are met or not. Through the use of educational technology that influences the effectiveness

of the learning process, the teacher's contribution is highlighted. According to Lindqvist (2019) and Kim et al. (2013), the ability of instructors to deploy activities in a typical classroom context influenced and supported the development of the digital textbook platform. When studying with e-textbooks, students were shown to require the assistance of their professors. As a result, teachers' dedication to investing in the e-textbook and its supporting materials is critical to the acceptance of such textbooks. Furthermore, being competent in the use of such technologies motivates learners to use them on a regular basis. Lindqvist (2019) added that students are less distracted while using tablets or computers for non-educational activities thanks to instructors' encouragement to use electronic textbooks.

Therefore, by participating in the learning process, teachers play a variety of responsibilities that impact the teaching process (Binnawas et al., 2019). Multiple strategies can be used to establish an educator's presence in the classroom, including frequent contact with students, consistent feedback, and constructive discussion that is exemplified by the educator and others (Bendary, 2020), handling social interaction, curriculum development, directing technology use, assessments of learning, as well as educational support (Huang, 2018). The duties of an online instructor or tutor, according to Elshaer and Marzouk (2019), should also include monitoring all posts made in discussion forums, promoting participation maintaining track of each student's involvement, focusing the discussion and promoting higher-level thinking, as well as letting the students take a more active role in their own education. Basically, it has been recommended that the online instructor should take on the responsibilities of facilitator and coach (Craig et al., 2008).

H2: Teaching staff role has a positive impact on the DLPs' perceived usefulness.

H2a: Teaching staff role has an indirect impact on student behavioral intention to use the digital learning platforms through their perceived usefulness.

2.3 Perceived Usefulness of digital learning platforms

According to Shen and Liu (2022), "perceived interest" and "perceived openness" are the two crucial elements influencing users' propensity to continue using. According to Davis (1989), the perceived usefulness of a technology is the degree to which a person believes that using it will increase his or her capacity to do their task. Similarly, Al-Ruz and Khasawneh (2011), describe PU as the amount to which an individual feels that using certain technology has enhanced their job performance. Also, according to Elshaer and Huang (2023), PU refers to students' expectations of the benefits of using learning platforms.

The perceived usefulness is related to the notion of "effort-free that improves user performance" (Al-Maroof et al., 2021). Providing a value/value of the HE system is a crucial weapon in the educational system's arsenal today, according to Cavallone et al.

(2021). Value may be derived from all qualitative and quantitative factors that make up the consuming experience. Numerous research asserted that PU significantly improves the use of and acceptance of e-learning technologies (Al-Fraihat et al., 2020; Alkandari, 2015; Ozkan & Koseler, 2009; Lee et al., 2006; Al-Ruz & Khasawneh, 2011; Limayem, & Cheung, 2008). According to Sutton and Nora (2009), an increasing amount of research indicates that both student involvement and academic accomplishment are influenced by the perceived value of a university's educational, social, and organizational atmosphere. Furthermore, Lee et al. (2006) asserted that the PU has a positive impact on how satisfied students are with their e-learning experiences. Consequently, the following hypotheses were originated:

H3: Perceived usefulness has a positive impact on student engagement.

H3a: Perceived usefulness has an indirect impact on student behavioral intention to use the digital learning platforms through student engagement.

H4: Perceived usefulness has a positive impact on student satisfaction.

H4a: Perceived usefulness has an indirect impact on student behavioral intention to use the digital learning platforms through student satisfaction.

2.4 Student engagement, student satisfaction, and behavioral intention of continuous usage.

According to Oncu and Cakir (2011), student involvement is the effort students put forth during educational activities. It has been presented as a complex concept made up of three elements: cognitions behaviors, and emotions (Lam et al., 2012). Alternatively, Ke and Kwak (2013) proposed five components of student satisfaction: active learning, learner relevance, learner autonomy, genuine learning, and technology competency. According to Kuo et al. (2013), effective use of technology along with student-instructor and learner-content engagement are reliable markers of students' favorable evaluations. According to Lee (2010), user continuation intention is most significantly influenced by engagement and satisfaction.

The intensity of the user's intention to utilize the system continuously governs whether or not they choose to do so (Hong & Tam, 2006). The term "intention to use" relates to an individual's propensity to act and the ability to forecast how they would behave. Following an examination of the expectation confirmation theory, Bhattacherjee (2001) concluded that a user's choice to continue using a computerized system is analogous to a consumer's intention to repurchase. The expectation confirmation hypothesis was proposed by Oliver (1980) to explain how a user's engagement and satisfaction will influence their propensity to utilize a product again in the future.

H5: Student engagement has a positive impact on behavioral intention of continuous use of digital learning platforms.

H6: Student satisfaction has a positive impact on behavioral intention of continuous use of digital learning platforms.

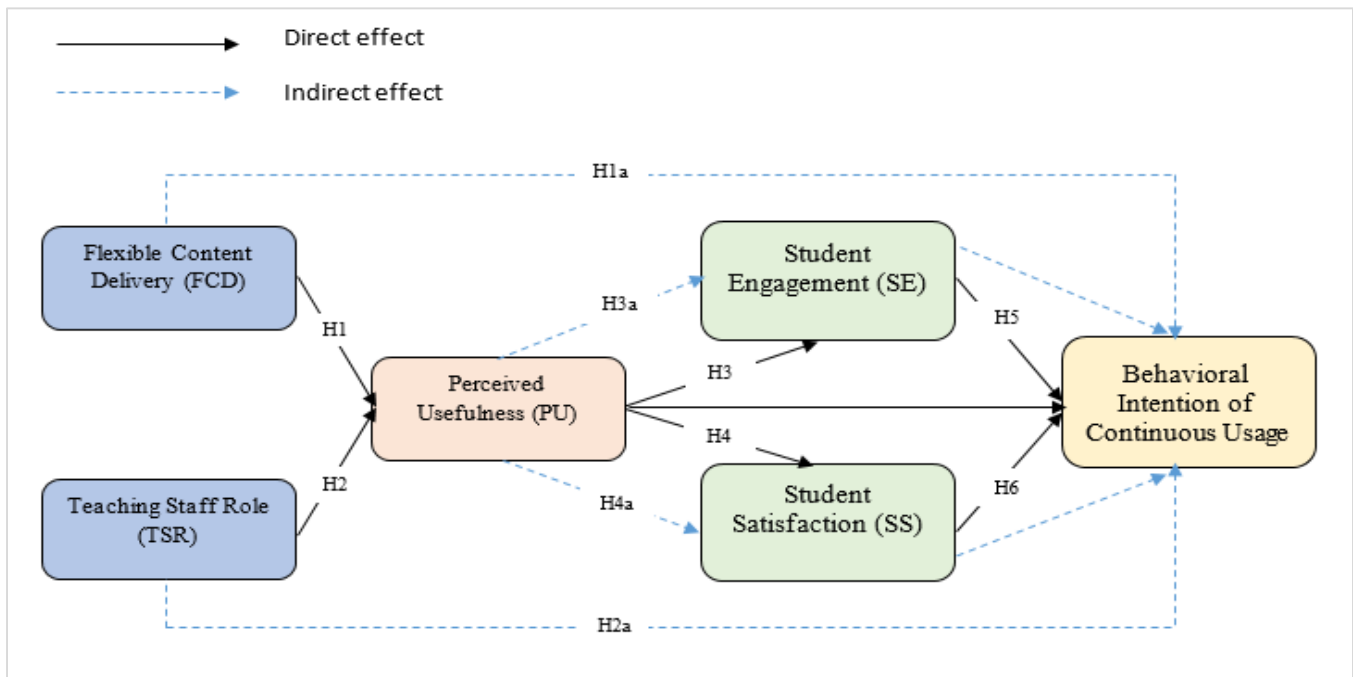The theoretical model is shown in Figure 1 below to describe the aforementioned hypotheses:

Figure 1. Conceptual model.

3 Methodology

This study employed an online survey to collect demographic information on the participants' gender, academic year, department of enrollment, and frequency of usage of the digital learning platform each week. Additionally, it included elements pertinent to the research topics, such as the perceived usefulness, flexible content, teaching staff role, student engagement, student satisfaction, and behavioral intention of continuous usage the digital learning platforms. The perceived usefulness scale was adopted from Ngai et al. (2007) and Saadé and Bahli (2005). Flexible content delivery and the role of the teaching personnel were two factors that were modified from Delone and Mclean (2003). Student satisfaction and engagement were derived from Siddiqi et al. (2021) and Raspopovic and Jankulovic (2017), respectively. On a five-point Likert scale, all survey constructs were scored from 1 (strongly disagree) to 5 (strongly agree).

3.1 Study context and participants

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The sample group for this study included undergraduate students majoring in tourism studies, hotel management, and tourist guidance at several faculties of tourism and hotels at well-known Egyptian universities (University of Sadat City, Helwan University, Alexandria University, Suez Canal University, Minia University, and Luxor University). The researchers contacted a group of teaching staff members (their colleagues) in the faculties of tourism and hotels to ask them to share the online survey link with their student groups.

Students from different departments and academic years (for example, tourism studies, hotel management, and tourist guidance students in their first, second, third, and fourth academic years) were targeted to participate in this survey entirely online, due to the following factors:

- The nature of the study's topic, which examines online students' behavior and their readiness to engage in using online platforms.
- The objective of the study is to determine what factors affect the satisfaction of higher tourism education undergraduates with using the digital learning platforms and to look at how these aspects/factors may influence students' intention to use these platforms.
- The digital platforms had similarities, such as digital textbooks, online educational supplemental resources, as well as online assignments.

A pilot study of 40 students representing different academic years and departments was undertaken to detect survey flaws and formatting difficulties, examine respondents' level of comprehension of the prepared questionnaire, and collect feedback from them. In light of comments from academics and students. There were several problems with the phrasing, the sequence of the questions, the time it took to finish the survey, and the range of acceptable replies.

The link to a self-administered questionnaire was sent to the students. From the 407 responses that were received, 324 were appropriate for data analysis. Smart-PLS 3.2.9 software was used for analyzing the data, which used structural equation modeling to look at the relationships among the research variables. Additionally, the descriptive data analysis was conducted using SPSS 23.0 program.

4 Results

4.1 Descriptive analysis

In this study, demographic information on students' gender, academic year, department of enrollment, and frequency of use of the online learning platform during the week was measured (see Table 1). Males make up 47.5 percent of the sample, while females make up 52.5 percent. The majority (42.9%) of students are enrolled in the department of tourism studies, followed by those in the department of hotel management (33%), and finally those

in the department of tourist guidance (24.1%). In terms of academic year, about 43.2% of those who participated were fourth-year students, followed by students registered in the second academic year (29.9%), students enrolled in the third academic year (16.9%), and then the first academic year's students (10%). In terms of frequency of use, about 44.1% of students uses the platform more than three times each week. As a result, the majority of users were participating in the internet-based educational platforms and its activities, and the majority of those were enrolled in the fourth academic year, implying that the respondents are familiar with such digital learning platforms, which verifies the trustworthiness of their response.

Table 1. *The Sample's Demographic Profile.*

Characteristics	Frequency	Parentage
Gender		
Male	154	47.5
Female	170	52.5
Academic year		
First Year	32	10
Second Year	97	29.9
Third Year	55	16.9
Fourth Year	140	43.2
The department		
Tourism Studies	139	42.9
Hotel Management	107	33
Tourist Guidance	78	24.1
DLPs Usage		
Once per Week	18	5.5
Twice per Week	44	13.7
Three Times per Week	119	36.7
More than 3 Times per Week	143	44.1

These numbers suggest that the target sample is adequate for the study's goal, which is to determine the factors that affect the use of digital learning platforms by tourism and hotel undergraduates. As a result, we were able to poll the most appropriate respondents for the reasons listed below:

- The relevant knowledge and background of the respondents on the study's topic (as the majority of respondents enrolled in the fourth academic year - 43.2%).
- The rate of DLP usage is enough to represent the respondents' familiarity with the study's topic, and the rise of such digital platform usage has been prevalent more than three times each week among the respondents (as shown in Table 1). This might be attributed to their familiarity with the learning platforms, their ICT resources and tools, the type and scope of their online learning activities, and the efficacy of such activities.

4.2 The measurement model's evaluation

In order to evaluate the measurement model, tests for the convergent and discriminant validity of the constructs were conducted. The Cronbach's alpha coefficient for each core variable was used in this study to evaluate the construct validity of the measurement model. The results demonstrate that all Cronbach's alpha coefficients, which varied from 0.791 to 0.907, above the recommended value of 0.7 (Kannan & Tan, 2005). Furthermore, the composite reliability (CR) results for the construction test of reliability fluctuated between 0.885 and 0.921 (Fornell & Larcker, 1981), verifying that construct reliability is met, as shown in Table 2. As a result, it was established that the values of Cronbach's Alpha and CR obtained for all measurements were error-free.

The indicator's reliability was investigated using factor loading. Factor loadings greater than 0.50 imply an adequate level of reliability (Hair et al., 2010). Table 2 demonstrates that all loadings for each item were higher than the recommended limit of 0.5. As a result, the model's loading of each component complies with all requirements. The average variance extracted (AVE) was used in this study to investigate convergent validity (the extent to which a measurement corresponds well with other measurements of the same theme), and it was discovered that all AVE values from 0.569 to 0.761 were higher than the suggested limit of 0.50 (Hair et al., 2010). As indicated in Table 2, it has been carefully proved that all constructs have sufficient convergent validity.

Table 2: *Loading, mean, standard deviation, cronbach's Alpha, CR, and AVE*

Constructs	Item	Loading (> 0.5)	M	SD	A (> 0.7)	CR (> 0.7)	AVE (> 0.5)
Flexible Content Delivery (FCD)	FCD1	0.788	4.450	1.017	0.907	0.921	0.643
	FCD2	0.726					
	FCD3	0.767					
	FCD4	0.842					
Teaching Staff Role (TSR)	TSR1	0.779	4.544	0.894	0.901	0.913	0.569
	TSR2	0.760					
	TSR3	0.767					
	TSR4	0.695					
Perceived Usefulness (PU)	PU1	0.794	4.127	0.874	0.902	0.919	0.570
	PU2	0.751					
	PU3	0.743					
	PU4	0.751					
	PU5	0.765					
	PU6	0.778					
Student Engagement (SE)	SE1	0.832	4.336	1.032	0.791	0.885	0.732
	SE2	0.822					
	SE3	0.819					
	SE4	0.827					
	SE5	0.816					
	SE6	0.829					
	SE7	0.817					
	SE8	0.806					

Student Satisfaction (SS)	SS1	0.774	4.411	0.921	0.896	0.912	0.761
	SS2	0.751					
	SS3	0.753					
	SS4	0.761					
	SS5	0.725					
	SS6	0.768					
Behavioral Intention of Continuous Usage (BI)	BI1	0.764	4.361	1.442	0.795	0.899	0.710
	BI2	0.761					
	BI3	0.723					

Note: M=Mean; SD=Standard Deviation, α= Cronbach's alpha; CR = Composite Reliability, AVE = Average Variance Extracted
   The scale used for measuring ranges from 1 (strongly disagree) to 5 on a five-point scale (strongly agree).
   Each factor loading for each item is statistically significant (p < 0.01).

Three metrics were used to evaluate the measuring model's discriminant validity: cross-loadings, Fornell-Larcker, and the heterotrait-monotrait ratio (HTMT). Cross-loadings are frequently the first technique employed to assess the indicators' discriminant validity (Hair et al., 2017). Because the measuring construct's outer loadings were higher than all of its cross loadings with other constructions in bold, Table 3 shows that the cross loading criterion was effective in fulfilling the requirements.

Table 3: *Results of the cross loading's discriminant validity*

	FCD	TSR	PU	SE	SS	BI
FCD1	**0.805**	0.523	0.510	0.527	0.527	0.569
FCD2	**0.784**	0.517	0.489	0.505	0.505	0.488
FCD3	**0.790**	0.511	0.527	0.529	0.529	0.557
FCD4	**0.818**	0.503	0.523	0.523	0.523	0.529
TSR1	0.610	**0.565**	0.529	0.500	0.500	0.529
TSR2	0.731	**0.605**	0.520	0.512	0.532	0.581
TSR3	0.754	**0.571**	0.541	0.500	0.500	0.555
TSR4	0.557	**0.777**	0.532	0.505	0.525	0.571
PU1	0.551	0.586	**0.573**	0.527	0.527	0.573
PU2	0.576	0.561	**0.608**	0.519	0.539	0.608
PU3	0.443	0.550	**0.489**	0.429	0.429	0.489
PU4	0.489	0.503	**0.566**	0.515	0.515	0.514
PU5	0.541	0.528	**0.591**	0.534	0.534	0.591
PU6	0.542	0.512	**0.542**	0.516	0.536	0.542
SE1	0.532	0.572	0.518	**0.539**	0.527	0.508
SE2	0.515	0.549	0.534	**0.541**	0.513	0.534
SE3	0.511	0.516	0.511	**0.527**	0.519	0.585
SE4	0.508	0.521	0.540	**0.546**	0.530	0.543
SE5	0.472	0.514	0.528	**0.631**	0.537	0.535
SE6	0.500	0.526	0.524	**0.593**	0.491	0.714
SE7	0.497	0.536	0.535	**0.549**	0.529	0.555
SE8	0.569	0.540	0.539	**0.584**	0.540	0.549
SS1	0.485	0.514	0.520	0.507	**0.528**	0.512
SS2	0.487	0.500	0.539	0.530	**0.541**	0.539
SS3	0.509	0.521	0.529	0.518	**0.558**	0.559
SS4	0.627	0.605	0.513	0.513	**0.823**	0.522
SS5	0.629	0.501	0.503	0.552	**0.861**	0.520
SS6	0.647	0.591	0.520	0.521	**0.858**	0.544
BI1	0.524	0.522	0.530	0.419	0.529	**0.650**
BI2	0.643	0.539	0.503	0.515	0.515	**0.613**

| BI3 | 0.634 | 0.528 | 0.530 | 0.508 | 0.529 | **0.631** |

Key: FCD: flexible content delivery, TSR: teaching staff role, PU: perceived usefulness, SE: student engagement, SS: student satisfaction, BI: behavioral intention.

Table 4 displays the outcomes of the Fornell-Larcker criterion's discrimination of concept validity, where the AVEs' square root on the diagonal lines, as the bolded values demonstrate, are greater than the relationships between the constructs (matching column and row values). This implies that the components are significantly related to their specific indicators in comparison to the model's other components (Fornell & Larcker, 1981), demonstrating strong discriminant validity (Hair et al., 2017). Furthermore, there is a relationship between exogenous elements that is less than 0.85 (Awang, 2014). As a result, all constructs have achieved discriminant validity.

The Fornell-Larcker criterion has drawn criticism; according to Henseler et al. (2016), it does not sufficiently illustrate the lack of discriminant validity in typical research settings. The hetero trait-mono trait ratio (HTMT), based on the multiple trait-multi method matrix, has been proposed by them as a measure of relationships. The HTMT is used in this work to assess discriminant validity. According to Gold et al. (2001), the discriminant validity is undermined when the HTMT value is higher than 0.90, or when the HTMT is 0.85 (Kline, 2011), As can be seen in Table 4, all values fell below the necessary threshold of 0.85, demonstrating the establishment of discriminant validity.

Table 4. *Fornell-Larcker and HTMT criterion's discriminant validity.*

	The discriminant validity of the Fornell-Larcker criteria						HTMT					
	FCD	TSR	PU	SE	SS	BI	FCD	TSR	PU	SE	SS	BI
FCD	0.741											
TSR	0.682	0.693					0.746					
PU	0.635	0.673	0.682				0.674	0.774				
SE	0.520	0.532	0.595	0.711			0.670	0.697	0.699			
SS	0.629	0.619	0.510	0.665	0.688		0.742	0.666	0.615	0.858		
BI	0.660	0.595	0.535	0.611	0.619	0.701	0.733	0.718	0.653	0.750	0.705	

Key: FC: flexible content delivery, TSR: teaching staff role, PU: perceived usefulness, SE: student engagement, SS: student satisfaction, BI: behavioral intention

4.3 Structural model

Hair et al. (2017) recommended testing the structural model by investigating the beta (β), R2, and associated t-values through a bootstrapping technique with a 5,000-person dataset. The p-value, in accordance with Sullivan and Feinn (2012), establishes the existence of an influence but does not demonstrate the size of the effect.
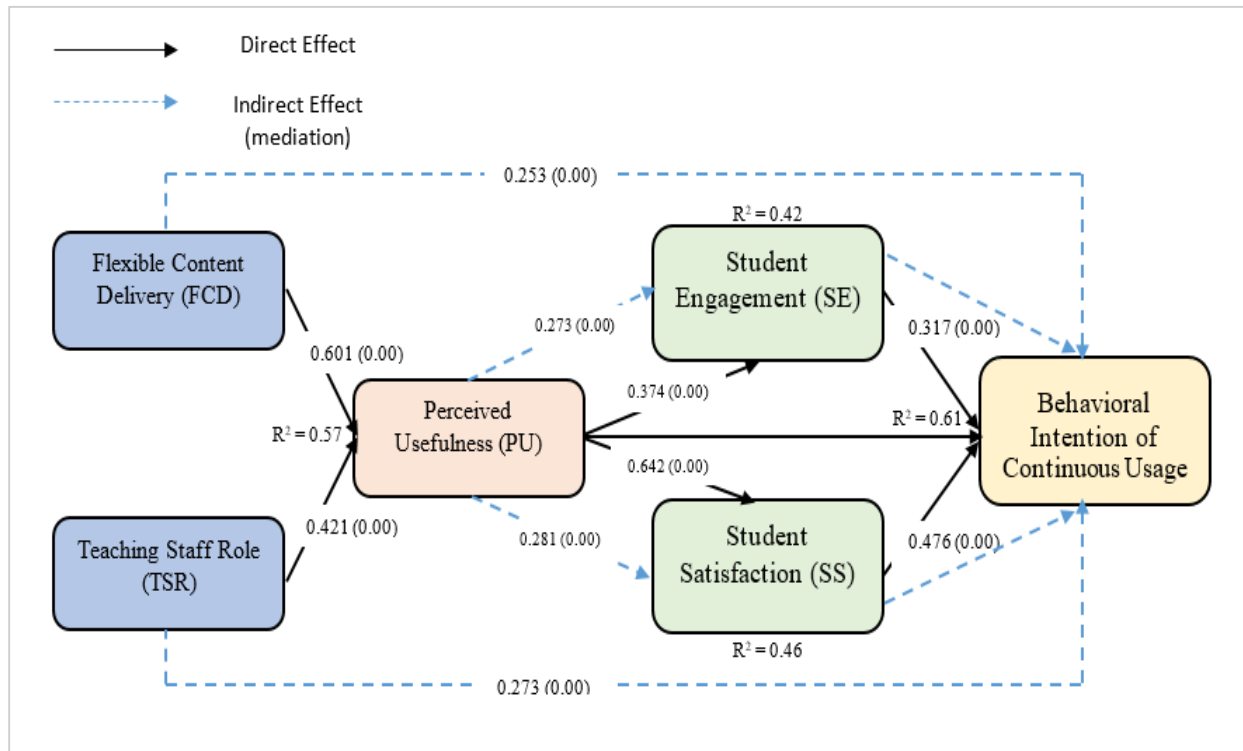
4.3.1 Direct hypotheses testing
The structural model examination supports six of the six direct hypotheses, as shown in Figure 2 and Table 5, which summarizes the findings of the hypothesis testing. Flexible

content delivery and teaching staff role were found to be key indicators of the PU of using DLPs (β = 0.601, p < 0.05 and β = 0. 421, p < 0.05, respectively), validating hypotheses H1 and H2. Additionally, perceived utility was shown to predict student engagement and student satisfaction. Hence, H3 and H4 are accepted with (β =0.374, t=5.44, p<0.05) and (β=0.462, t=5.81, p<0.05) respectively. Furthermore, both student engagement and student satisfaction were discovered to predict the student behavioral intention to use the DLPs. Therefore, H5 and H6 are accepted with (β =0.317, t=5.23, p<0.05) and (β =0.476, t=5.71, p<0.05) respectively.

Table 5. *The structural path analysis's findings*

Hypothesis	Relationship	Std Beta	Std Error	t-value	p-value	Decision	R^2	f^2	Q^2	VIF
H1	FCD→PU	0.601	0.064	12.040	0.000	Supported	0.57	0.945	0.247	2.000
H2	TSR→PU	0.421	0.050	13.118	0.000	Supported		0.776		2.000
H3	PU→ SE	0.374	0.073	5.441	0.000	Supported	0.42	0.192	0.382	1.184
H4	PU→ SS	0.462	0.077	5.809	0.000	Supported	0.46	0.194	0.220	1.184
H5	SE→ BI	0.317	0.079	5.229	0.000	Supported	0.61	0.182	0.382	2.182
H6	SS→ BI	0.476	0.064	5.709	0.000	Supported		0.185		2.182

Key: FCD: flexible content delivery, TSR: teaching staff role, PU: perceived usefulness, SE: student engagement, SS: student satisfaction, BI:

behavioral intention.

Figure 2. *Structural model (p* < 0.05, p** < 0.01).*

4.3.2 Mediation testing

The bootstrapping of an indirect impact technique proposed by Preacher and Hayes in 2004 and 2008 was used to examine the mediation hypotheses H1a, H2a, H3a, and H4a. Table 6 demonstrates that the PU has significant mediation effects on the relationship between (flexible content delivery and teaching staff role) and student behavioral intention to use the DLPs ($\beta = 0.253$, $p < 0.05$ and $\beta = 0.273$, $p < 0.05$, respectively), establishing the viability of hypotheses H1a and H2a. Additionally, the role of student engagement and satisfaction as mediators in Hypotheses H3a and H4a, respectively, was investigated. The findings show that the relationship between the PU and students' behavioral intention to use the DLPs was positively mediated by student engagement ($\beta = 0.273$, $p < 0.05$). Similar to this, the relationship between the PU and students' behavioral intention of using DLPs was positively mediated by student satisfaction ($\beta = 0.281$, $p < 0.05$).

Table 6: Bootstrapping the mediation effect

Hypothesis	*Relationship*	*Std Beta*	*Std Error*	*t-value*	*p-value*	*Decision*
H1a	FCD →PU→BI	0.253	0.064	4.547	0.001	Supported
H2a	TSR →PU→BI	0.273	0.071	4.547	0.000	Supported
H3a	PU →SE→BI	0.273	0.071	4.547	0.001	Supported
H4a	PU →SS→BI	0.281	0.062	4.651	0.001	Supported

Key: FCD: flexible content delivery, TSR: teaching staff role, PU: perceived usefulness, SE: student engagement, SS: student satisfaction, BI: behavioral intention.

5. Discussion

This study revealed that the students' behavioral intention to use the digital learning platforms can be modelled by a variety of aspects and elements, including the flexible content delivery, the teaching staff's role, students' engagement and satisfaction. The findings of this study showed, primarily, that flexible content delivery and the role of teaching staff had a positive effect on students' perceived usefulness of using digital learning platforms. These findings show that improving the flexibility delivery of academic content (e.g., lectures, discussion, assignments, exercises, etc.) contributes to students' perceived usefulness in using digital learning platforms and their overall mindset toward the online educational setting. These results agree with those of other studies, which claim that flexible content delivery is an advantage of digital learning and one of the key elements influencing learners' perceived usefulness, because it allows students to manage their academic effort effectively (Harding et al., 2005; Sun et al., 2008; Ko et al., 2011). The perceived value that students can obtain during education through digital learning platforms is increased by the content, which is flexible enough to offer access to academic material, inexpensive use of digital textbooks, and open educational materials across various devices. For example, according to Basilaia et al. (2020), the flexible delivery of material may include professors' recorded lectures, as well as regular and immediate completion of assignments or other student activities that improve the educational value

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for the students. This study supports H1 and demonstrates that FCD has a positive effect on students' perceived usefulness (PU) of using digital learning platforms. Additionally, it was found that the role of the teaching staff had an advantageous impact on the perceived usefulness, in particular the lecturer's participation is stressed in the age of online education that in turn impacts the efficiency of the educational process, and H2 is thus supported. The latter result is consistent with Elshaer and Huang's (2023) conclusion that a teacher's performance affects students' perceptions of perceived quality and can be seen as influencing the "outcome value" of their learning experience. In this regard, several researchers observed that the success of implementing a platform for digital textbooks was influenced by the lecturers' ability to apply activities efficiently in a typical classroom context (Bendary, 2020; Horsley & Martin, 2015; Kim et al., 2013; Lindqvist, 2019). Therefore, in order to successfully engage and educate students online, educators are just as important as the course material (Moore, 2014).

The study's key finding is that students' engagement and satisfaction with using digital learning platforms are significantly influenced by how useful they perceive those platforms to be. This suggests that as students become more positive about using digital learning platforms, so do their engagement and satisfaction levels. Perceived usefulness was proved to be the main driver for boosting students' engagement (β =0.374, p 0.05), emphasizing the relevance of the usefulness functioning of digital learning platforms in increasing online students' feelings of engagement. In line with this discovery, Kim et al. (2021) came to the conclusion that students' acceptance attitudes and engagement with digital platforms were directly influenced by the perceived usefulness. This finding, however, contradicts El-Sayad et al.'s (2021) assumption that relationship between the behavioral engagement and the perceived usefulness was insignificant during the COVID-19 pandemic since students were forced to use digital platforms, which had no nothing to do with their engagement levels. Likewise this study demonstrated a significant connection between perceived usefulness and student satisfaction (β=0.462, p<0.05). This outcome can be explained by the fact that there are other options for students to complete their coursework after the COVID-19 pandemic, thus their willingness to participate in online learning activities will rely on how valuable they believe it to be. In line with this finding, according to Arbaugh (2000), the PU has a positive effect on students' satisfaction with their digital learning courses. Al-Fraihat et al. (2020) and Lee et al. (2006) reached the similar conclusion, stating that PU has a considerable favorable effect on the use and acceptance of d-learning systems, and eventually the students' degree of satisfaction.

The study's other major finding showed that online students' behavioral intentions to use digital learning platforms are significantly positively influenced by their emotional engagement and satisfaction. This suggests that students who are more emotionally engaged and satisfied will have better intentions to use digital learning platforms. The findings also showed that student satisfaction was the key factor in predicting their

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propensity to use digital learning platforms (β =0.476, p<0.05). As a result, the data reveal that students who use digital learning activities, particularly those who have positive feelings about using digital platforms, reflect higher levels of pleasure. Concurrently, the study was successful in establishing a link between engagement and student use of digital learning platforms. These results support Lee's (2010) assertion that the factors that have been determined to have the greatest impact on users' intentions to continue using a service are engagement and satisfaction.

Finally, the findings showed that students' intention to use digital learning platforms was indirectly influenced by flexible content delivery and the teaching staff's role through the perceived usefulness. These results underline the need of building digital learning platforms that take into account the teaching staff's role and flexible content delivery in order to ensure ongoing use of the platform. Additionally, it was discovered that the perceived usefulness of the digital learning platforms had an indirect impact on the students' intention to use them via the students' engagement and satisfaction levels, supporting the usage intention of the platforms.

6. Conclusion and Limitations

This study looked into the perspectives of Egyptian higher tourism education students toward the use of digital learning platforms. The study investigated the impact of flexible content delivery, the role of teaching staff, and perceived usefulness on student engagement and satisfaction with digital learning platforms, as well as how this will affect their behavioral intention to use such platforms. In other words, this study explores the impact of digital learning platforms' features and the teaching staff role, especially with regard to flexible delivery and teacher role and the usefulness of digital learning systems, on student engagement and satisfaction, in turn, intention of continuous usage. This study therefore illustrates how the behavior of online students can be predicted by taking into account the teaching and learning platforms influences. As a result, this study makes a theoretical contribution that will help academics in better understanding the factors that influence student engagement and satisfaction when using digital learning platforms in the Egyptian higher tourism education. Additionally, this study highlights how teaching staff and features of digital learning platforms contribute to the perceived value of the educational process in universities and shows how important it is to take these factors into account in order to achieve engagement, satisfaction, and use intention outcomes. Finally, it will assist the HE institutions in creating plans to continue with digital learning in the future, particularly in the event of an emergency.

However, this study has a number of shortcomings that show the need for more investigation. First, the study's data were gathered from a single stream of higher education (the tourism and hospitality HE) and a single developing country, making its findings difficult to generalize. As a result, further research is required to investigate the

determinants of student engagement and satisfaction with relation to the use of digital learning platforms at various public and private Egyptian institutions, as well as other educational systems in other developing nations. Second, the current study only focused on the factors (teaching staff role and flexible content delivery) that influence the perceived value, student engagement and satisfaction, and thus influence their intention to use digital learning platforms. Therefore, more research is required to investigate other factors/aspects that affect students' perceived value, such as ease of use, self-efficacy, assessment methods, and learning persistence. Finally, the quantitative approach was employed in this study to investigate the study's issue. Subsequently, another intriguing suggestion for future research is to use focus groups or interviews to gain a qualitative understanding of how digital learning platforms is accepted and used. It is also suggested to conduct studies using comparative methods.

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محددات إستخدام منصات التعلم الرقمي في بيئة التعليم العالي السياحى

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الملخص

الغرض من هذه الدراسة هو تحديد العوامل التي تؤثر على مشاركة الطلاب ورضاهم عن منصات التعلم الرقمية ودراسة كيفية تأثير هذه العوامل على نواياهم لإستخدام هذه المنصات بشكل مستمر. تم الحصول على البيانات من ٣٢٤ طالبًا جامعيًا من كليات السياحة والفنادق المختلفة الذين خضعوا لتجربة تعليمية كاملة عبر الإنترنت خلال جائحة COVID19. وبالتالى، فقد ركزت دراستنا على أنظمة الكتب الجامعية الرقمية التي بدأت أثناء تفشي فيروس كورونا في الكليات المصرية المختلفة ولا تزال مستخدمة حتى اليوم. أظهرت النتائج أن التقديم المرن للمواد العلمية ودور عضو هيئة التدريس لهما دور هام وتأثير إيجابى على الفائدة المُدركة لإستخدام منصات التعلم الرقمى، كما أنهما يؤثران بشكل غير مباشر على نوايا الطلاب في استخدام منصات التعلم الرقمية بإنتظام. بالإضافة إلى ذلك، تم اكتشاف أن الفائدة المُدركة للمنصة لها تأثير إيجابي مباشر على تفاعل الطلاب ورضاهم ونية إستخدامهم لهذه المنصات بشكل مستمر، بالإضافة إلى تأثير غير مباشر على نية الاستخدام من خلال تفاعل الطلاب ورضاهم. تشير هذه النتائج إلى أنه في ضوء نية الطالب لإستخدام هذه المنصات بإنتظام، فإن المحتوى التعليمى المرن، ودور أعضاء هيئة التدريس الإيجابى، والفائدة المُدركة ، وتفاعل الطلاب ورضاهم يجب أن يؤخذ في الاعتبار عند تصميم وتطوير منصات التعلم الرقمية.

الكلمات الدالة: منصات التعلم الرقمي ، دور أعضاء هيئة التدريس ، المحتوى العلمى المرن ، الفائدة المدركة ، تفاعل الطلاب ، رضا الطلاب.