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Predictors of Intention to Use a Sustainable Cloud-Based Quality Management System among Academics in Jordan

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Abstract: This research aims to provide a predictive model of essential factors influencing the behavioral intention to use sustainable cloud-based quality management systems among academics in Jordan. A comprehensive research model was developed based on the Unified Theory of Acceptance and Use of Technology (UTAUT2) and the Theory of Planned Behavior (TPB), which was tested using cross-sectional data. The research sample covers Jordanian higher education institutions (23 governmental and private universities), and the unit of analysis includes 500 academics. The research adapts and modifies the UTAUT2 model and TPB to explain behavioral intention to use sustainable cloud-based quality management systems in developing countries. The proposed model explained 0.478 percent of behavioral intention variance and 0.127 percent of the user behavior variance. Three constructs are found to be significant predictors: perceived behavioral control, performance expectancy, and facilitating conditions. The attitude toward the behavior and subjective norm are not significant predictors. The research contributes to the literature in several ways. First, it extends previous studies by examining predictors of the behavioral intention to use SCQMS in higher education institutions. Second, it provides rigorous empirical evidence that incorporating the UTAUT2 model with the TPB produced a substantial improvement in the variance explained in behavioral intention compared to the prior research conducted in developing contexts. Third, this research provides useful insight into university management. The research provides a better understanding of the essential factors influencing the behavior intention to use sustainable cloud-based quality management systems in Jordanian Universities. Thus, the research model provides better explanatory power than previous studies in business literature and developing markets.

Keywords: behavioral intention; sustainable cloud-based quality management system; theory of planned behavior; unified theory of acceptance and use of technology; IT adoption

Citation: Dajani, D.; Yaseen, S.G.; El Qirem, I.; Sa'd, H. Predictors of Intention to Use a Sustainable Cloud-Based Quality Management System among Academics in Jordan. *Sustainability* **2022**, *14*, 14253. https://doi.org/10.3390/su142114253

Academic Editors: Jian-Hong Ye, Yung-Wei Hao, Yu-Feng Wu, Savvas A. Chatzichristofis and Aras Bozkurt

Received: 6 August 2022
Accepted: 25 October 2022
Published: 1 November 2022

1. Introduction

Technology is essential in a corporate and academic settings. Presently, the quality of education depends on the existence of advanced technologies in higher education institutions. Technology has transferred education from passive and reactive to an interactive and aggressive practice [1], Technological tools assist lecturers in accomplishing work and teaching efficiently. Information technologies develop curiosity and imagination in students' minds and are considered one of the major determinants influencing students' learning intentions [2,3]. Finally, advanced technologies improve the overall quality and integrity of the academic system [4].

Ultimately, the question that concerns policymakers in the higher education sector is how to exploit technological progress to build the capacity of universities in developing countries [1,5]. The value of knowledge and accumulated data are crucial in universities

for several decision-makers [6]. The accurate use of information technology affects the long-term sustainability of an organization [7,8]. Thus, universities are seeking out and employing several systems to save and manage their data. Some universities employed sustainable cloud quality management systems to manage their data and process quality information for effective decision-making [9]. Cloud computing is a distributed computing paradigm that provides access to virtual resources such as computers, networks, storage, development platforms, and applications [10]. Thus, it is essential in this research to examine the factors affecting the behavior intention of several staff at universities to use sustainable cloud-based quality management systems.

Previous research concentrated on the conventional quality management system, in which forms, processes, and documentation are completed on paper and manually. Although a sustainable electronic quality management system is efficient and can contribute to an organization's competitive advantage, large capital expenditures associated with traditional local programs, maintenance issues, and updates may be a burden on some educational institutions [11–13]. A solution that helps to alleviate these challenges is to use a sustainable cloud-based quality management system (SCQMS) that allows users to use the same automated system without investing in more expensive equipment or employing and training a significant number of university Information Technology employees [14,15].

Furthermore, while a great deal of literature has been written in the field of paper-based quality systems, there has been little research investigating the essential factors influencing the intention to use SCQMS. Given the particular characteristics of SCQMS, there is a need for additional research to understand the essential factors that affect behavioral intention to accept and use SCQMS. Thus, this research aims to provide a model incorporating essential factors influencing the behavioral intention to use sustainable cloud-based quality management systems in Jordanian universities based on the Unified Theory of Acceptance and Use of Technology (UTAUT2) and the Theory of Planned Behavior (TPB).

This research contributes to the literature in several ways. First, the research extends prior literature by incorporating significant predictors from the UTAUT2 model and the TPB. Second, it fills theoretical gaps by providing empirical evidence on the antecedents of (SCQMS). More specifically, analyzing the intention to use SCQMS in developing countries such as Jordan has not been previously studied. Third, this research provides insights for Jordanian universities' leaders about how academics engage in pursuing cloud computing quality management systems. Forth, the current research sheds light on the most significant predictors: namely perceived behavioral control. Finally, our research provides a better understanding of the critical factors influencing the intention to use SCQMS in Jordanian universities Thus, the research intends to address this issue and propose a model for assessing the behavioral intention to use SCQMS at Jordanian universities. The emphasis on Jordanian universities is appropriate given that the majority of research has focused on SCQMS in developed countries.

2. Literature Review

2.1. Quality Management System (QMS)

Colleges and universities strive to increase their competitiveness by finalizing tasks efficiently and effectively [16]. Information is an essential component of the traditional quality management system. The primary purpose of QMS is to give appropriate process execution and process standards [17,18]. As the volume of information grows, various software are required to produce, gather, store, process, and communicate the information required to complete fundamental activities and objectives [18].

QMS is a collection of processes, papers, policies, objectives, and manuals that offer a framework for the universities operation to fulfill the demands of academic staff, continually develop the organization, and use standardized techniques. Chen and Wu [5] defined a quality management system as a model, method, and tool for achieving business objectives [19].

In higher education institutions, QMS refers to integrating the quality management system and applying and implementing quality management technology tools within the universities to improve organizational performance [20,21]. The successful adoption of QMS requires universities to comply with a set of standards, including a series of specific rules, regulations, and policies to regulate university activities and standardizing methods to guide existing quality processes [16,22–24].

At the moment, businesses, educational institutions, and governments are working together to create a new platform for increasing mobile Internet service quality [25]. As a result, cloud computing has become a significant milestone in the development of information systems and quality management [26].

2.2. Sustainable Cloud-Based Quality Management System

Cloud computing and quality management systems are unavoidable trends in computer science, information systems, and quality management systems [27]. Cloud computing is an emerging innovation phenomenon in information technology [28]. Cloud computing enabled direct interaction with data centers without the need for additional hardware or software, resulting in better sharing and use of resources and costs [29]. Sustainability seeks to prevent the depletion of natural or physical resources so that they remain available in the long-term and contribute to maintaining or supporting the process that continues over time [30,31].

Designing a sustainable system is one of the biggest challenges of the 21st century: environmental transformation combined with digital transformation [32]. SCQMS is a subset of cloud computing in the field of quality management systems [33]. SCQMS has all of the materials and equipment, such as hardware and software resources, to improve the traditional QMS infrastructure. Once the set of SCQMS documents and models are installed by default on cloud servers, these documents and forms are ready for use by academic staff at universities from cloud vendors [34–36].

SCQMS assists universities in reducing capital costs, maintaining issues, and training, allowing them to focus more on their primary activities (teaching) rather than managing issues in information technologies that will be delivered to them by the service provider. Furthermore, using a sustainable cloud-based quality management system minimizes energy usage and maintains green and environment-friendly universities. Furthermore, SCQMS assists academic staff in organizing, categorizing, reporting, managing, and accessing their daily work information at any time and from any location. As a result, it improves the educational process and learning outcomes [10,25,37–41]. Therefore, employing a sustainable cloud-based quality management system provides a significant edge over rivals who are still using paper-based quality management systems or a variety of offline tools.

2.3. The TPB and the UTAUT2

The theory of planned behavior (TPB) is an extension of the theory of reasoned action [42,43]. A central fact in the theory of planned behavior is the individual's intention to perform a specific behavior the stronger the intention to perform a given behavior, the more likely should be its performance. According to the theory of planned behavior, perceived behavior control together with behavioral intention can be used directly to predict behavior (performance, action). Furthermore, the theory of planned behavior postulates three conceptual determinants of behavioral intention. The first is the attitude toward the behavior in a question. The second is a social factor, termed subjective norm, and the third antecedent of the behavioral intention is the degree of behavioral control [44].

Attitude toward the behavior refers to the degree to which a person has a favorable or unfavorable evaluation of the behavior in a question. Subjective norms refer to the social pressure to perform or not perform the behavior, whereas perceived behavioral control describes the perceived ease or difficulty of performing the behavior; it is assumed to reflect experience, as well as anticipated impediments and obstacles.

In combination, attitude, subjective norm, and perception of behavioral control led to the formation of a behavioral intention. The intention is thus assumed to be the immediate antecedent of behavior.

Venkatesh et al. [45] reviewed IT users' acceptance literature and discussed eight prominent IT acceptance/adoption theoretical models. The eight models make up the social cognitive theory. Using data from four organizations over six months with three points of measurement, the eight models explained between 17% and 53% of the variance in user intentions [45].

Based on these results, Venkatesh et al. [45] developed a new and integrated model called the "Unified Theory of Acceptance and Use of Technology" within four essential constructs and four moderators. The new model, UTAUT, was then tested using the original data and found to outperform the eight theoretical models.

The model shows that four determinants have a significant influence on the user's intention to accept and use IT systems, namely: performance expectancy, effort expectancy, social influence, and facilitating conditions.

Moreover, Venkatesh et al. [46] extended the theoretical framework model (UTAUT) to study IT acceptance and use in a consumer setting. The new proposed model is called UTAUT2. The UTAUT2 model incorporates three new constructs into UTAUT: hedonic motivation, price value, and habit. Individual differences–namely age, gender, and experience–are hypothesized to moderate the influence of these predictors on the user's intention to accept or use a specific technology. The extended UTAUT2 model produced a substantial improvement in the variance explained in behavioral intention (56% to 74%) compared to the UTAUT model [47].

Hedonic motivation (conceptualized as perceived enjoyment) can be defined as the fun derived from using a specific technology. In the business literature, hedonic motivation has been found to influence users' intention to accept technology [47,48].

Price value has a significant influence on user's technology acceptance, especially in the e-service marketing context [47,49], whereas habit has been used as the extent to which the user tended to perform behaviors automatically, in terms of the learning curve accumulation [50,51].

3. Research Model and Hypothesis

Davis [52] proposed the Technology Acceptance Model (TAM) based on the Theory of Reasoned Action (TRA). TAM aims to identify factors that explain the acceptance and use of various information technologies and to indicate the adjustments that need to be made in the system to make it user-friendly [52,53].

The Theory of Planned Behavior (TPB) was developed by Icek Ajzen to predict human behavior [44]. The TPB is an extension of the Theory of Reasoned Action (TRA) [42,43]. This theory focused primarily on the intention of a person to perform a particular behavior; the intention to perform a behavior is stronger when it is likely to perform. TPB assumes that attitude toward the behavior, subjective norm, and perceived behavioral control influence behavioral intention.

Venkatesh et al. [45] examined and discussed eight IT user acceptance/adoption models. The eight models were TRA, TAM, TPB, the motivational model, the innovation diffusion theory, the social cognitive theory, a model combining TAM and TRA, and the model of PC use. Venkatesh et al. [45] developed The Unified Theory of Acceptance and Use of Technology (UTAUT) using the suggested complete synthesis of these eight leading models. There are four core constructs in UTAUT: performance expectancy (PE), effort expectancy (EE), social influencing (SI), and facilitating conditions (FC). Several studies on the adoption of different IT system applications [54–56] showed that UTAUT constructs are generalizable. However, Venkatesh et al. [47] developed the UTAUT2 model and expanded it to explain the use of technology in the consumer context. The purpose of this model is to explain the user's intention to use various information systems. The UTAUT2

model incorporates three new constructs into UTAUT: hedonic motivation, price value, and habit [47].

This research adopted the UTAUT2 model because of its comprehensiveness, and improved predictive power which exceeded many technologies acceptance models, such as UTAUT and TAM. Models that focus on identifying essential predictors and determinants are considered to be vital in providing a rich understanding of the user's acceptance and use of technology. Venkatesh [47] asserted that in the case of UTAUT, which was originally developed to explain user technology acceptance and use, it will be critical to examine how it can be extended to other contexts, such as the context of the sustainable cloud-based quality management system acceptance or adoption.

The research model incorporated two constructs from the UTAUT2 which are performance expectancy and facilitating conditions. The variables of hedonic motivation (which is defined as the fun derived from using a specific technology), price value, and habit were excluded because they have a direct bearing on consumer behavior and have no effect on this study because this technology is adopted by enterprises that invest in the system. In addition, the use of a sustainable cloud-based quality management system is compulsory among academics in Jordanian universities. Therefore, hedonic motivation is more suitable to incorporate in voluntary settings.

Furthermore, these variables are not suitable for the current study that is dealing with the topic of sustainable cloud-based quality management systems among academics in Jordanian universities.

In addition, the research model adapts three constructs from the TPB model (attitude, subjective norm, and perceived behavioral control) that influence behavioral intention to use a sustainable cloud-based quality management system, as shown in Figure 1.

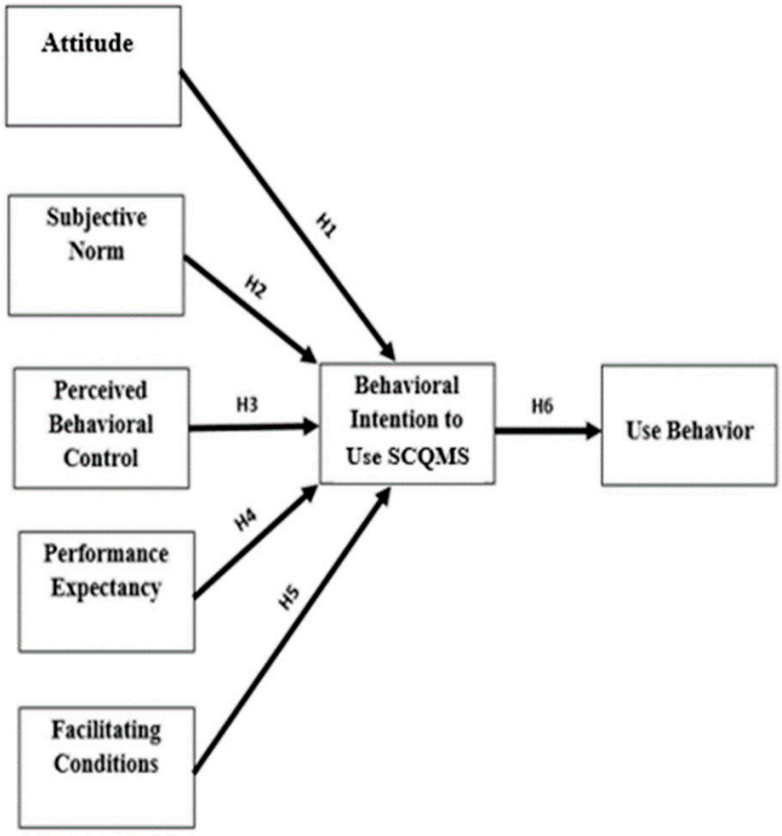

Figure 1. Conceptual Research Model Adapted from Venkatesh et al. [47] and Ajzen [44].

The extended unified theory of acceptance and use of technology, presented by Venkatesh et al. [46], was used in different contexts in the Middle East and the Arab world. For example, Dajani and Hegleh [57] used extended UTAUT2 to test the antecedents

that impact on behavior intention of animation usage among marketing students in Jordanian universities. Abu Shakra and Nikbin [58] used UTAUT2 to explore and discuss the factors that impact the acceptance and adoption of the Internet of Things by entrepreneurs in Oman. El-Masri and Tarhini [59] used UTAUT2 to examine the main factors that may impede or enable the adoption of e-learning systems by university students from developing countries (Qatar) and developed countries (the United States).

However, the extended UTAUT2 had never been used to explain the use of SCQMS among academics in Jordanian universities. Cloud computing was investigated in Jordanian universities, such as in the study by Matar et al. [29] but this did not focus on sustainable quality management. Other cloud computing technologies were already assessed in Jordan, such as the cloud-based accounting information system adoption by Alshirah et al. [60], and cloud computing adoption in hospitals by Harfoush et al. [28]. These prior works are not transferable to the current research-specific cloud computing application. Therefore, the current research adopted the TPB and UTAUT2 models, which are primarily concerned with an individual's intention to perform a certain behavior and explain key aspects impacting the behavioral intention to use a sustainable cloud-based quality management system in Jordanian universities.

3.1. Attitude

Attitude refers to the extent to which a person makes a positive or negative judgment of actions [44]. In this context, attitude reflects the degree to which an academic staff member has an adequate or inappropriate assessment of their ability to employ SCQMS. The Theory of Planned Behavior states that attitude toward a behavior is a good predictor of intention and behavior. Several models and hypotheses have been proposed by researchers to investigate the relationship between attitude and behavior [61]. Wicker [62] investigated the relationship between attitude and behavior and discovered that the two may not be related. Hale et al. [63] stated that there is a limited association between attitude and behavior in a voluntary setting due to dissatisfaction with previous experience. Furthermore, research demonstrated that behavioral intention to use SCQMS is positively influenced by one's attitude toward the behavior [44,64].

Therefore, the following hypothesis is proposed:

H1: *Attitude positively impacts the behavioral intention to use SCQMS.*

3.2. Subjective Norm

Subjective Norma refers to social pressure to perform or refrain from performing a behavior [44]. According to the empirical data, some studies discover favorable impacts while others find negative consequences. Personal concerns, according to Ajzen, I [44], may lessen the subjective norm impact. According to Shon et al. [40], the subjective norm is the weakest variable in TPB and has less predictive power in forecasting people's intents. According to this assertion, some researchers deleted subjective norms from their studies and replaced them with personal normative beliefs [40,65–67].

On the other hand, other researchers argue that subjective norms are still required for predicting individuals' intentions [68–71]. When Armitage and Conner [72] used multiple-component measurements, they discovered a substantial link between subjective norm and intention. Additionally, the subjective norm has been proven to be an enabler for behavioral intention measurements [73]. As a result, it is proposed that subjective norm positively influences behavioral intention to use SCQMs.

H2: *Subjective norm positively impacts the behavioral intention to use SCQMS.*

3.3. Perceived Behavioral Control

Perceived behavioral control is an individual's assessment of having the internal capability to exert external control over a specific behavior [74]. In the framework of SCQMS, academic staff considers the degree of control required to complete an activity.

It has been demonstrated that perceived behavioral control is a facilitator for behavioral intention measurements [75]. As a result, it is postulated that perceived behavioral control influences behavioral intention to use SCQMS. The resulting proposition is suggested:

H3: *Perceived behavioral control positively impacts the behavioral intention to use SCQMS.*

3.4. Performance Expectancy (PE)

PE is defined as the degree to which people feel that adopting the system would assist them in work performance [47]. When compared to other particular combinations in the UTAUT models to employ new technology, PE was determined to be the most potent driver of behavior intention [27,45,47,56,57,76]. According to current literature, people prefer to accept novel technologies when they are of value to them [76]. The view of academic staff that the use of SCQMS will be beneficial in their administrative and teaching duties is referred to as a performance expectation. As a result, this research proposes that performance expectancy influences behavioral intention to use SCQMS. As a result, the following hypothesis is developed:

H4: *Performance Expectancy has a positive impact on the behavioral intention to use SCQMS.*

3.5. Facilitating Conditions

Facilitating Conditions refer to the degree of accessibility to the tools and assets required to complete a task [47]. Academic staff performs their tasks smoothly when enough resources are provided. Facilitating conditions have been verified as a significant guide for SCQMS adoption and use [27,45,47,56,57]. Facilitating conditions include everything that aids in the implementation of the assessment method, such as administrative, organizational, or technical assistance, expertise, and other resources [76]. In the context of academia, facilitating conditions refer primarily to the adequate technological infrastructure (e.g., internet access) and the availability of a technical expert willing to assist academic staff in overcoming technical issues that may develop while using SCQMS. As a result, this research proposes the following:

H5: *Facilitating conditions have a positive impact on the behavioral intention to use SCQMS.*

3.6. Behavioral Intention

Behavioral intention is described as a measure of the intensity of one's desire to engage in a given action [43]. This construct describes the strength of academic staff to use SCQMS. The importance of behavioral intention as an indicator of individual behavior is well documented in IT literature [45,56,64,77,78]. According to Fishbein and Ajzen [42], people's intentions affect their behavior and action. According to Venkatesh [45,47] behavioral intention has a significant influence on technology use. As a result, the following hypothesis is proposed:

H6: *Behavioral intention has a positive impact on the use of SCQMS.*

4. Methods

4.1. Sampling and Data Collection

This research aims to investigate the behavioral intention to use sustainable cloud-based quality management systems in Jordanian universities. Several research hypotheses have been proposed to examine the extent to which essential factors (attitude, subjective norm, perceived behavioral control, performance expectancy, and facilitating conditions) can explain behavioral intention to use SCQMS in Jordanian universities. After developing measurement scales an instrument was designed in the form of a self-administered questionnaire using a five-point Likert scale. The questionnaire was distributed online to encourage respondents to fill in the survey questionnaire. A total of 568 questionnaires were distributed online to academics. Of those, 500 were received for a gross response rate of 88%. The target population of this research covers Jordanian universities (11 govern-

ment universities and 12 private universities). The sample for this research comprised 23 Jordanian universities. The research unit of analysis includes 500 academics, of whom 88 are professors, 164 associate professors, 208 assistant professors, and 40 lecturers who were randomly selected. Academics were selected because they are the primary users of SCQMS in Jordanian universities.

Among the respondents, 83.6% were male and 16.4% were female. The majority of the respondents were between 40 and 49 years old and constitute 40% of the sample. Meanwhile, 35.2% of the respondents have 5–9 years of experience.

Table 1 describes the demographic profile of the respondents.

Table 1. Demographic profile of respondents.

	Frequency (N—500)	**Percentage (%)**
Academic Rank		
Professor	88	17.6%
Associate Professor	164	32.8%
Assistant Professor	208	41.6%
Lecturer	40	8%
Total	**500**	**100%**
Gender		
Male	418	83.6%
Female	82	16.4%
Total	500	100%
Age		
less than 30	12	2.4%
30–39	136	27.2%
40–49	202	40.4%
51-above	150	30.0%
Total	500	100%
Years of experience		
less than 5	78	15.6%
5–9	176	35.2%
10–14	108	21.6%
15-above	138	27.6%
Total	500	100%

4.2. Measurement

Most of the measurements were adapted from prior research. Cheng et al.'s [79] scale was used to assess the attitude variable. The subjective norm was measured using the scale in [80]. Perceived behavioral control was measured using the items in [81]. Performance expectancy was measured using [45,47]. Facilitating conditions were also measured using [45,47]. Venkatesh et al.'s [45,47] scale was used to assess behavior intention and user behavior. The optimization of the research constructs is illustrated in Table 2.

Quantitative survey research appeared to be appropriate to collect the research data and examine the model. All research constructs were measured with a five-point Likert scale, and they were formulated using positive statements. The research survey questionnaire was created in English and then translated into Arabic. Back translation was used to ensure correctness.

Table 2. Constructs Measurements.

Construct	Code	Measurements	References
Attitude	ATT1	Using a sustainable cloud-based quality management system would be a good idea	Cheng et al. [79]
	ATT2	Using Use sustainable cloud-based quality management system would be a foolish idea	
	ATT3	I like the idea of using the sustainable cloud-based quality management system	
	ATT4	Using a sustainable cloud-based quality management system would be pleasant	
Subjective Norm	SN1	Your decision to use a sustainable cloud-based quality management system is because universities use this system	Madden et al. [80]
	SN2	Your decision to use a sustainable cloud-based quality management system is because the media encourages s use of this system	
	SN3	Your decision to use a sustainable cloud-based quality management system is because International Higher educational institutions use this system	
Perceived Behavioral Control	PBC1	I have control over using the sustainable cloud-based quality management system	Wu and Chen [81]
	PBC2	I have the resources necessary to use a sustainable cloud-based quality management system	
	PBC3	I know it is necessary to use a sustainable cloud-based quality management system	
	PBC4	Given the resource, opportunity, and knowledge it takes to use a sustainable cloud-based quality management system, it would be easy for me to use SCQMS	
Performance Expectancy	PE1	I find using a sustainable cloud-based quality management system useful in my daily work	Venkatesh et al. [45,47]
	PE2	Using a sustainable cloud-based quality management system increases my chances of achieving things that are important to me	
	PE3	Using a sustainable cloud-based quality management system helps me accomplish things more quickly	
	PE4	Using a sustainable cloud-based quality management system increases my productivity	
Facilitating Conditions	FC1	I have the resources necessary to use a sustainable cloud-based quality management system	
	FC2	I know that it is necessary to use a sustainable cloud-based quality management system	
	FC3	Using a sustainable cloud-based quality management system is compatible with other technologies I use	
	FC4	I can get help from others when I have difficulties using the sustainable cloud-based quality management system	

Table 2. *Cont.*

Construct	Code	Measurements	References
Behavior Intention	BI1	I intend to continue using sustainable cloud-based quality management system in the future	Venkatesh et al. [45,47]
	BI2	I will always try to use a sustainable cloud-based quality management system in my daily work	
	BI3	I plan to continue to use sustainable cloud-based quality management systems frequently	
User Behavior	UB1	If an initial decision to use SCQMS has been taken, how frequently will you use it?	Venkatesh et al. [45,47]
	UB2	If an initial decision is to use SCQMS, how much time will you spend on it in terms of minutes/hours?	

4.3. Data Analysis Results

4.3.1. The Measurement Model

For data analysis, partial least squares structural equation modeling (PLS-SEM) version 3.0 was employed. Smart PLS is useful for exploratory research with a small sample. Partial least squares equation modeling (SEM) has been used in a variety of business research fields [82]. A PLS path model also has two components: the measurement model (inner model) and the structural model (outer model). The measurement model offered data about the scales' reliability and validity, while the structured model reflected the linkages (paths) between the research components [83].

The validation of the measurement model is determined by the assessment of convergent and discriminant validity. All items loading, Cronbach's alpha, composite reliability, and average variance extracted exceeded the commonly accepted thresholds (0.7), implying that all items consistently represent and measure the same construct [84–87].

Discriminate validity refers to the distinctiveness of the research's model construct using three different techniques: Fornell and larker criterion, cross-loadings, and Heterotrait-Monotrait (HTMT) ratio. Table 3 shows the Fornell-Larker criterion and Table 4 illustrates cross-loadings. As seen in Tables 4 and 5, the square root of the average variance extracted (AVE) of each latent construct is bigger than its strongest association with other constructs.

Table 3. Fornell and Larker's criterion.

	Attitude	Behavioral Intention	Facilitating Condition	Perceived Behavioral Control	Performance Expectancy	Subjective Norm	Use Behavior
Attitude%	0.869						
Behavioral Intention%	0.317	0.891					
Facilitating Condition%	0.180	0.408	0.859				
Perceived Behavioral Control%	0.312	0.435	0.718	0.793			
Performance Expectancy%	0.399	0.649	0.328	0.350	0.842		
Subjective Norm%	0.577	0.374	0.302	0.351	0.461	0.825	
Use Behavior%	0.194	0.356	0.220	0.255	0.336	0.275	0.901

Table 4. Cross-Loading.

Constructs	Attitude	Subjective Norm	Perceived Behavioral Control	Performance Expectancy	Facilitating Condition	Behavioral Intention	Use Behavior
ATT1r	**0.873**	0.492	0.288	0.374	0.180	0.241	0.201
ATT2r	**0.869**	0.525	0.278	0.387	0.190	0.263	0.224
ATT3r	**0.893**	0.482	0.240	0.313	0.081	0.308	0.149
ATT4r	**0.840**	0.511	0.285	0.322	0.188	0.280	0.110
SN1r	0.440	**0.825**	0.352	0.428	0.320	0.298	0.206
SN2r	0.539	**0.841**	0.311	0.349	0.253	0.351	0.277
SN3r	0.437	**0.809**	0.192	0.370	0.165	0.265	0.185
PBC1r	0.312	0.325	**0.774**	0.253	0.475	0.302	0.207
PBC2r	0.262	0.284	**0.844**	0.248	0.694	0.312	0.207
PBC3r	0.172	0.245	**0.789**	0.286	0.680	0.323	0.218
PBC4r	0.246	0.263	**0.764**	0.309	0.451	0.416	0.182
PE1r	0.388	0.385	0.386	**0.842**	0.346	0.585	0.282
PE2r	0.287	0.352	0.260	**0.840**	0.257	0.512	0.273
PE3r	0.349	0.427	0.286	**0.845**	0.270	0.550	0.341
PE4r	0.312	0.386	0.238	**0.843**	0.224	0.535	0.236
FC1r	0.169	0.233	0.687	0.219	**0.831**	0.289	0.130
FC2r	0.187	0.284	0.633	0.316	**0.880**	0.404	0.204
FC3r	0.105	0.254	0.543	0.296	**0.865**	0.344	0.222
BI1r	0.314	0.334	0.377	0.641	0.324	**0.896**	0.335
BI2r	0.211	0.308	0.385	0.523	0.379	**0.874**	0.263
BI3r	0.313	0.357	0.404	0.565	0.393	**0.903**	0.348
UB1r	0.250	0.287	0.292	0.369	0.237	0.377	**0.943**
UB2r	0.063	0.191	0.139	0.208	0.141	0.241	**0.856**

Table 5. The measurement models.

Construct	Code	Loading	Cronbach's Alpha	Composite Reliability	Average Variance Extracted (AVE)
Attitude	ATT1	0.873	0.892	0.925	0.755
	ATT2	0.869			
	ATT3	0.893			
	ATT4	0.840			
&Subjective Norm	SN1	0.825	0.768	0.865	0.681
	SN2	0.841			
	SN3	0.809			
Perceived Behavioral Control	PBC1	0.774	0.805	0.872	0.629
	PBC2	0.844			
	PBC3	0.789			
	PBC4	0.764			
Performance Expectancy	PE1	0.842	0.864	0.907	0.709
	PE2	0.840			
	PE3	0.845			
	PE4	0.843			
Facilitating Condition	FC1	0.831	0.824	0.894	0.738
	FC2	0.880			
	FC3	0.865			
Behavioral Intention	BI1w	0.896	0.871	0.920	0.794
	BI2w	0.874			
	BI3w	0.903			
Use Behavior	UB1	0.943	0.777	0.895	0.811
	UB2	0.856			

Regarding cross-loading, a particular item of each construct should have higher loading on its construct in comparison to other constructs. As Table 4 shows, the value of factor loading for each item also satisfies the requirement of (0.70).

As Table 5 shows, the composite reliability values range from 0.865 to 0.925, with an average value extracted of more than 50%. AVE is a typical measure used to prove the convergent validity of the construct. An AVE value of 0.50 or more suggests that the concept explains more than half of the variation in its indicators [83].

4.3.2. The Structural Model

Cross-validation (CV)-communality redundancy indices, path coefficients (β), and coefficient of determinator (R^2) values are important measurements for evaluating the research reflective structural model. Cross-validation and the blindfolding-based cross-validated redundancy measure and the statistical significance of the path coefficients are used to evaluate the structural model's quality. For all constructs, this index should be positive [83].

Furthermore, estimates for the hypothesized relationships between the constructs are produced after running the PLS-SEM method. Figure 2 depicts the results of the structural model research, including predicted path coefficients (β) and the R^2 value of the determination coefficient. R^2 explains the variance in the endogenous constructs explained by exogenous constructs [88]. Furthermore, Henseler et al. [89] suggest that an HTMT value above 0.90 depicts a lack of discriminant validity. Overall, the research model accounts for 0.478 of the variances in behavioral intention and 0.127 of the variances in user behavior, as shown in Figure 2.

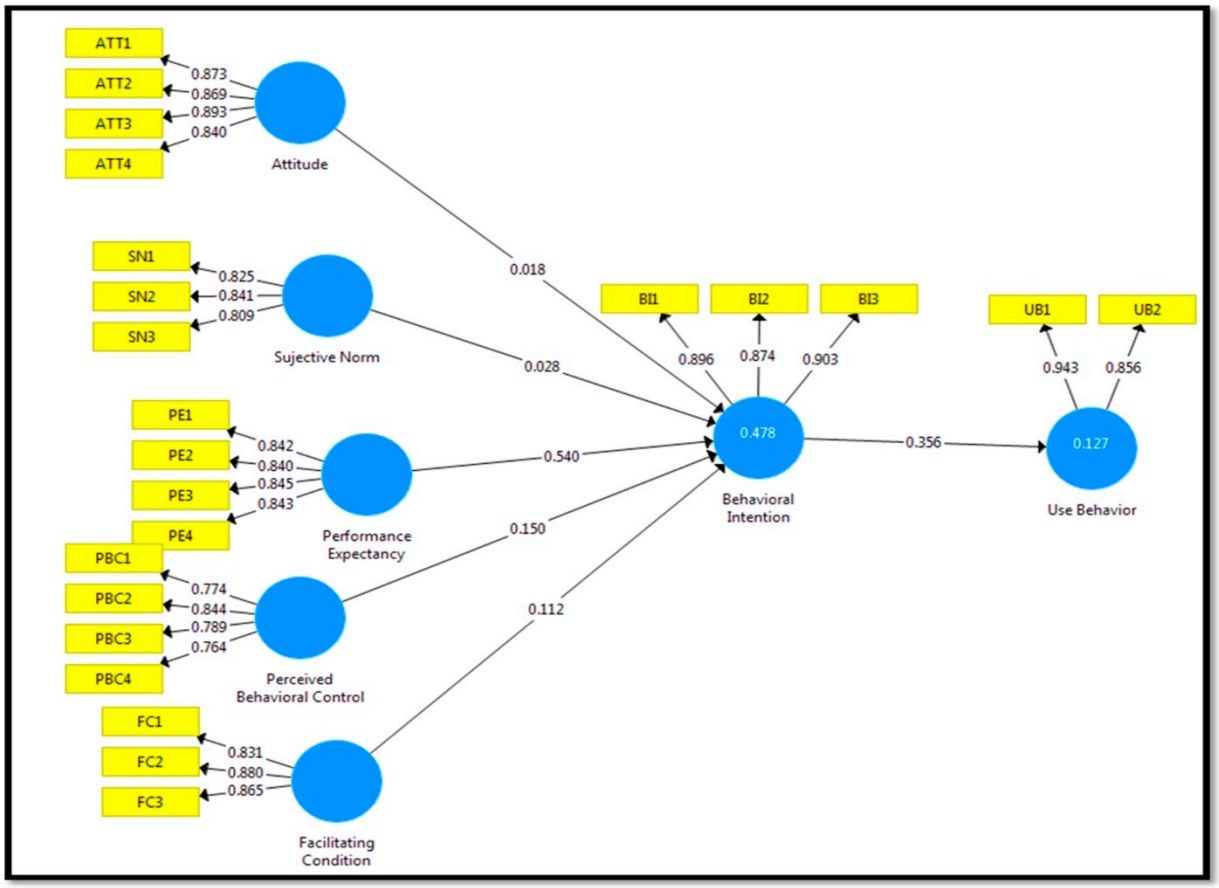

Figure 2. The Structural Model Results.

Table 6 presents the outcomes of the hypotheses that were tested. The results indicate a strong positive effect for four hypotheses H3, H4, H5, and H6, while H1 and H2 are not

supported. Consequently, H1 the results for attitude are (β = 0.018), T-Value (0.435) and $p > 0.05$. This result refers to the rejection of the proposition. Therefore, H1 is not supported, and attitude has no positive impact on behavioral intention to use SCQMS. H2 the results for subjective norm are (β = 0.028), T-Value (0.698) and $p > 0.05$. This result refers to the rejection of the proposition. Therefore, H2 is not supported, and the subjective norm has no positive impact on behavioral intention to use SCQMS. H3 the path coefficient for perceived behavioral control is (β = 0.150) and has a value of (T-Value = 3.027) at a significant level of ($p < 0.05$). This outcome refers to the acceptance of the hypothesis. It could be concluded that there is a positive effect of perceived behavioral control on behavioral intention to use SCQMS. H4 the path coefficient for performance expectancy is (β = 0.540) and has a value of (T-Value = 15.904) at a significant level of ($p < 0.05$). This outcome refers to the acceptance of the hypothesis. It could be concluded that there is a positive effect of performance expectancy on behavioral intention to use SCQMS. H5 the path coefficient for facilitating condition is (β = 0.112) and has a value of (T-Value = 2.003) at a significant level of ($p < 0.05$). This outcome refers to the acceptance of the hypothesis. It could be concluded that there is a positive effect of facilitating conditions on behavioral intention to use SCQMS. H6 the path coefficient for behavioral intention is (β = 0.356) and has a value of (T-Value = 8.944) at a significant level of ($p < 0.05$). This outcome refers to the acceptance of the hypothesis. It could be concluded that there is a positive effect of behavioral intention on use behavior.

Table 6. The structural model results.

Path	Standardized Coefficient Beta (β)	T-Values	P-Values (Sig)	Hypothesis Results
Attitude -> Behavioral Intention3	0.018	0.435	0.664	H1 Not Supported1
Subjective Norm -> Behavioral Intention4	0.028	0.698	0.486	H2 Not Supported2
Perceived Behavioral Control -> Behavioral Intention5	0.150	3.027	0.003	H3 Supported
Performance Expectancy -> Behavioral Intention	0.540	15.904	0.000	H4 Supported
Facilitating Condition -> Behavioral Intention	0.112	2.003	0.046	H5 Supported
Behavioral Intention -> Use Behavior	0.356	8.944	0.000	H6 Supported

5. Discussion and Implications and Limitations

The research investigated the antecedents that affect the academic staff's behavioral intention to use SCQMS by adapting the TPB and UTAUT2 models. The proposed structural model is acceptable and the relevance constructs have a strong ability to demonstrate the various factors that influence the behavioral intention of academic staff to use the SCQMS.

Empirically, the results of the analyses indicated that the link between performance expectancy and the behavioral intention to use the SCQMS is the most significant. In addition, academic staff at universities find that using the SCQMS is useful in carrying out their daily work as it increases the chances of achieving things that matter to them and helps them to complete their work more quickly, therefore increasing their productivity. This result is in agreement with [26,27,45,47,56,57,90,91].

The construct of facilitating conditions also has an important influence on the behavioral intention of academic staff to use the SCQMS. Academic staff feel that universities have the resources they need to use SCQM, which is compatible with other techniques used in their work. Academic staff also feel that they have the knowledge and ability to use SCQMS and that if they encounter difficulties, they can obtain help from others. These results are consistent with Venkatesh et al. [90], Williams et al. [56]; Venkatesh et al. [45]; Venkatesh et al. [47]; Sharif et al. [91]; Nguyen et al. [27].

Moreover, perceived behavioral control has a significant influence on the behavioral intention to use the SCQMS. The academic staff feel the system is user-friendly because

of the resources, opportunities, and knowledge required. This result is in agreement with Yen et al. [92], Ajzen [44], and Jafarkarimi et al. [93].

The hypothesized association between behavioral intention to use SCQMS and use behavior was significant. It shows how frequently the SCQMS system is used and how long academic staff spends using the system [27,38,44,45,47,56].

In addition, the outcome of this research analysis showed that attitude did not have any influence on the behavior intention to use SCQMS. Moreover, academic staff did not regard attitudes as having an impact on their behavior. The attitude failed to predict intention, which means that there was a behavioral gap, which was recognized by many researchers [94,95]. Perhaps attitude does not have an effect because staff are obliged to use the system at their universities.

Furthermore, the subjective norm does not affect the behavior intention to use SCQMS. The decision of academic staff to use the SCQMS did not arise based on social pressure (other universities, media, and international higher educational institutions). Therefore, the subjective norm has no significant influence on the behavioral intention to use the SCQMS. The related outcome was also found by Sheppard et al. [96], Davis et al. [97], Mathieson [98], and Yen et al. [92]. The research findings did not reveal the significance of the attitude and subjective norm on the intention to adopt SCQMS.

The research contributes to the literature because it has a different contextual setting in comparison with the traditional technology acceptance models which are predominantly Western in origin, it incorporates different constructs that are vital to explain Jordanian and developing economy issues and it illustrates a different methodology for operationalization of the constructs and testing of the hypotheses. Therefore, the study contributes to the literature concerning technology acceptance and use in developing countries and higher education sector.

On the theoretical side, the current research contributes to the critical review of literature on the reliability and validity of the well-known model UTAUT2 and its ability to predict behavioral intention to adopt and use a specific digital system in a developing country context. The research model incorporates constructs from various technology models to explain the behavior intention to use the system. Thus, the authors argue that incorporating predictors from other IT adoption models is essential to enhance our understanding of innovative technologies and human behavior. Finally, the investigated technology, namely the sustainable cloud-based quality management system among academics has not been investigated in Jordanian universities. Therefore, this study adds value to the literature in developing countries and more specifically in the educational sector.

The present research sheds light on the essential role of perceived behavior control, performance expectancy, and facilitating conditions in predicting intention to adopt and use SCQMS. The study indicates that the technology characteristics, such as performance expectancy and compatibility, can increase the acceptance and use of SCQMS. Therefore, programmers and designers of SCMS should pay attention to the usefulness, the ease of use and compatibility of the system. It is recommended to create systems that are easy to use, useful, interactive, and compatible with the needs of the academics to help them understand and allocate what they are searching for. Furthermore, the language and the instruction of the system should be easy to understand. Software programmers should develop software that has a bi-lingual interface (Arabic and English) to be used and understood by all of the employees at Arab organizations.

Finally, decision-makers and IT specialists at universities should provide relevant and sufficient training for all the academics to increase their familiarity with the system and consequently their productivity. IT specialists should be always available to help academics solve any issues related to the use of the system. Finally, responsible parties at universities should allow access for all the employees to use the system after excessive training to facilitate knowledge sharing among all employees.

6. Conclusions and Future Research

The current research results show that three of the independent variables are good predictors of the dependent variable construct (behavioral intention to use a sustainable cloud-based quality management system in the research model). The independent variables are perceived behavioral control, performance expectancy, and facilitating conditions.

Furthermore, the results present the participation of each main predictor in the behavioral intention to use SCQMS. The largest Beta value in the standardized coefficient is (0.540), which returns to the performance expectancy predictor. This variable helps explain behavior intentions with a sustainable cloud based on a quality management system. This is followed by perceived behavioral control (0.150) and then facilitating condition (0.112).

In contrast, the attitude and subjective norm are not significant predictors in the model. The results of the relationship between behavioral intention to use CQMS and the use behavior indicate a significant between the two variables. Behavioral intention contributes (0.356) to explaining the dependent variable variance.

Similar to any empirical study, this research has a few limitations which can be assumed as new directions for future research. Future research could examine other predictors and other mediated constructs such as perceived trust, user satisfaction, or cultural values. Furthermore, the cross-sectional research design is incapable of confirming the predictive power of the causal relations empirically. Future research could address this issue using a comparative and longitudinal research design.

Author Contributions: Formal analysis, D.D.; Methodology, D.D.; Writing—review & editing, D.D.; Data curation, D.D.; Writing—original draft, S.G.Y.; Investigation, S.G.Y.; Supervision, S.G.Y.; Conceptualization, I.E.Q.; Project administration, I.E.Q.; Resources, H.S.; Visualization, H.S. All authors have read and agreed to the published version of the manuscript.

Funding: This research received no external funding.

Institutional Review Board Statement: Not applicable.

Informed Consent Statement: Informed consent was obtained from all subjects involved in the study.

Data Availability Statement: The manuscript is conformed with MDPI research data policies.

Conflicts of Interest: The authors declare no conflict of interest.

References

1. Al-Samarraie, H.; Saeed, N. A systematic review of cloud computing tools for collaborative learning: Opportunities and challenges to the blended-learning environment. *Comput. Educ.* **2018**, *124*, 77–91. [CrossRef]
2. Chen, C.H.; Tsai, C.C. In-service teachers' conceptions of mobile technology-integrated instruction: Tendency towards student-centered learning. *Comput. Educ.* **2021**, *170*, 104224. [CrossRef]
3. Dutta, B.; Peng, M.H.; Chen, C.C.; Sun, S.L. Interpreting Usability Factors Predicting Sustainable Adoption of Cloud-Based E-Learning Environment during COVID-19 Pandemic. *Sustainability* **2021**, *13*, 9329. [CrossRef]
4. Amigud, A.; Arnedo-Moreno, J.; Daradoumis, T.; Guerrero-Roldan, A.E. An integrative review of security and integrity strategies in an academic environment: Current understanding and emerging perspectives. *Comput. Secur.* **2018**, *76*, 50–70. [CrossRef]
5. Chen, C.L.; Wu, C.C. Student's behavioral intention to use and achievements in ICT-Integrated mathematics remedial instruction: A case study of a calculus course. *Comput. Educ.* **2020**, *145*, 103740. [CrossRef]
6. Giebels, D.; van Buuren, A.; Edelenbos, J. Using knowledge in a complex decision-making process–Evidence and principles from the Danish Housing project's ecosystem-based management approach. *Environ. Sci. Policy* **2015**, *47*, 53–67. [CrossRef]
7. Al Omoush, K.S.; Al-Qirem, R.M.; Al Hawatmah, Z.M. The degree of e-business entrepreneurship and long-term sustainability: An institutional perspective. *Inf. Syst. e-Bus. Manag.* **2018**, *16*, 29–56. [CrossRef]
8. Al-Shayea, Q.K. Telemedicine using cloud computing in Jordan. In *Competition Forum*; American Society for Competitiveness: Tysons Corner, VA, USA, 2015; Volume 13, No. 2; p. 390.
9. Pańkowska, M.; Pyszny, K.; Strzelecki, A. Users' adoption of sustainable cloud computing solutions. *Sustainability* **2020**, *12*, 9930. [CrossRef]
10. González-Martínez, J.A.; Bote-Lorenzo, M.L.; Gómez-Sánchez, E.; Cano-Parra, R. Cloud computing and education: A state-of-the-art survey. *Comput. Educ.* **2015**, *80*, 132–151. [CrossRef]
11. Chen, C.-S.; Liang, W.-Y.; Hsu, H.-Y. A cloud computing platform for ERP applications. *Appl. Soft Comput.* **2015**, *27*, 127–136. [CrossRef]

12. López, C.; Ishizaka, A. GAHPSort: A new group multi-criteria decision method for sorting a large number of the use sustainable cloud-based ERP solutions. *Comput. Ind.* **2017**, *92*, 12–25. [CrossRef]
13. Cheng, Y.M. Quality antecedents and performance outcome of use sustainable cloud-based hospital information system continuance intention. *J. Enterp. Inf. Manag.* **2020**, *33*, 654–683. [CrossRef]
14. Hew, T.-S.; Kadir, S.L.S.A. Predicting instructional effectiveness of use sustainable cloud-based virtual learning environment. *Ind. Manag. Data Syst.* **2016**, *116*, 1557–1584. [CrossRef]
15. Wang, J.; Jou, M. Qualitative investigation on the views of inquiry teaching based upon the cloud learning environment of high school physics teachers from Beijing, Taipei, and Chicago. *Comput. Hum. Behav.* **2016**, *60*, 212–222. [CrossRef]
16. Díaz, J.A.A.; Martínez-Mediano, C. The impact of ISO quality management systems on primary and secondary schools in Spain. *Qual. Assur. Educ.* **2018**, *26*, 2–24. [CrossRef]
17. Grudzień, Ł.; Hamrol, A. Information quality in design process documentation of quality management systems. *Int. J. Inf. Manag.* **2016**, *36*, 599–606. [CrossRef]
18. Laudon, K.C.; Laudon, J.P. *Management Information Systems*; Pearson: Upper Saddle River, NJ, USA, 2015; p. 143.
19. Rocha-Lona, L.; Garza-Reyes, J.A.; Kumar, V. *Building Quality Management Systems: Selecting the Right Methods and Tools*; CRC Press: Boca Raton, FL, USA, 2013.
20. Ismyrlis, V. The contribution of quality tools and integration of quality management systems to the organization. *TQM J.* **2017**, *29*, 677–689. [CrossRef]
21. Wang, D.H.M.; Huynh, Q. The relationships among quality management system, knowledge management and organizational performance: An application of the Heckman two-step method. *J. Appl. Econ. Bus. Res.* **2014**, *4*, 235–245.
22. *ISO 9000*; Quality Management Systems Requirements. ISO: Geneva, Switzerland, 2015.
23. Soković, M.; Jovanović, J.; Krivokapić, Z.; Vujović, A. Basic quality tools in continuous improvement process. *J. Mech. Eng.* **2009**, *55*, 1–9.
24. Ilies, L.; Osoian, C.; Zaharie, M. Quality management system in higher education-employers approach. *Manag. Chall. Contemp. Soc. Proc.* **2010**, 75–79.
25. Arpaci, I. Antecedents and consequences of cloud computing adoption in education to achieve knowledge management. *Comput. Hum. Behav.* **2017**, *70*, 382–390. [CrossRef]
26. Lian, J.W. Critical factors for cloud-based e-invoice service adoption in Taiwan: An empirical study. *Int. J. Inf. Manag.* **2015**, *35*, 98–109. [CrossRef]
27. Nguyen, T.D.; Nguyen, T.M.; Pham, Q.T.; Misra, S. Acceptance and use of e-learning based on cloud computing: The role of consumer innovativeness. In *International Conference on Computational Science and Its Applications*; Springer: Cham, Switzerland, 2014; pp. 159–174. [CrossRef]
28. Harfoushi, O.; Akhorshaideh, A.H.; Aqqad, N.; Al Janini, M.; Obiedat, R. Factors affecting the intention of adopting cloud computing in Jordanian hospitals. *Commun. Netw.* **2016**, *8*, 88. [CrossRef]
29. Matar, N.; AlMalahmeh, T.; Sowan, B.; Al-Jaghoub, S.; Mater, W. A multi-group structural equation modeling for assessing behavioral intention of using mobile cloud computing-the case of Jordanian universities during the covid19 pandemic. *Int. Arab J. Inf. Technol.* **2022**, *19*, 203–221. [CrossRef]
30. Chang, V.; Walters, R.J.; Wills, G.B. Organisational sustainability modeling—An emerging service and analytics model for evaluating Cloud Computing adoption with two case studies. *Int. J. Inf. Manag.* **2016**, *36*, 167–179. [CrossRef]
31. Kumar, S.; Buyya, R. Green cloud computing and environmental sustainability. *Harnessing Green IT Princ. Pract.* **2012**, 315–339. [CrossRef]
32. Gill, S.S.; Buyya, R. A taxonomy and future directions for sustainable cloud computing: 360-degree view. *ACM Comput. Surv. (CSUR)* **2018**, *51*, 1–33. [CrossRef]
33. Gupta, P.; Seetharaman, A.; Raj, J.R. The usage and adoption of cloud computing by small and medium businesses. *Int. J. Inf. Manag.* **2013**, *33*, 861–874. [CrossRef]
34. Coccoli, M.; Guercio, A.; Maresca, P.; Stanganelli, L. Smarter universities: A vision for the fast-changing digital era. *J. Vis. Lang. Comput.* **2014**, *25*, 1003–1011. [CrossRef]
35. Sabi, H.M.; Uzoka, F.M.E.; Langmia, K.; Njeh, F.N. Conceptualizing a model for adoption of cloud computing in education. *Int. J. Inf. Manag.* **2016**, *36*, 183–191. [CrossRef]
36. Low, C.; Chen, Y.; Wu, M. Understanding the determinants of cloud computing adoption. *Ind. Manag. Data Syst.* **2011**, *111*, 1006–1023. [CrossRef]
37. Qian, L.; Luo, Z.; Du, Y.; Guo, L. Cloud computing: An overview. In *IEEE International Conference on Cloud Computing*; Springer: Berlin/Heidelberg, Germany, 2009; pp. 626–631. [CrossRef]
38. Alotaibi, M.B. Exploring Users' Attitudes and Intentions toward the Adoption of Cloud Computing in Saudi Arabia: An Empirical Investigation. *JCS* **2014**, *10*, 2315–2329. [CrossRef]
39. Oliveira, T.; Thomas, M.; Espadanal, M. Assessing the determinants of cloud computing adoption: An analysis of the manufacturing and services sectors. *Inf. Manag.* **2014**, *51*, 497–510. [CrossRef]
40. Shon, T.; Cho, J.; Han, K.; Choi, H. Toward advanced mobile cloud computing for the internet of things: Current issues and future direction. *Mob. Netw. Appl.* **2014**, *19*, 404–413. [CrossRef]

41. Arpaci, I. Understanding and predicting students' intention to use mobile cloud storage services. *Comput. Hum. Behav.* **2016**, *58*, 150–157. [CrossRef]
42. Fishbein, M.; Ajzen, I. *Understanding Attitudes and Predicting Social Behavior*; Prentice-Hall: Hoboken, NJ, USA, 1980.
43. Fishbein, M.; Ajzen, I. *Belief, Attitude, Intention, and Behavior: An Introduction to Theory and Research*; Addison-Wesley: Reading, MA, USA, 1975.
44. Ajzen, I. The theory of planned behavior. *Organ. Behav. Hum. Decis. Process.* **1991**, *50*, 179–211. [CrossRef]
45. Venkatesh, V.; Morris, M.G.; Davis, G.B.; Davis, F.D. User acceptance of information technology: Toward a unified view. *MIS Q.* **2003**, *27*, 425–478. [CrossRef]
46. Venkatesh, V.; Goyal, S. Expectation disconfirmation and technology adoption: Polynomial modeling and response surface analysis. *MIS Q.* **2010**, *34*, 281–303. [CrossRef]
47. Venkatesh, V.; Thong, J.Y.; Xu, X. Consumer acceptance and use of information technology: Extending the unified theory of acceptance and use of technology. *MIS Q.* **2012**, *36*, 157–178. [CrossRef]
48. Thong, J.Y.; Hong, S.J.; Tam, K.Y. The effects of post-adoption beliefs on the expectation-confirmation model for information technology continuance. *Int. J. Hum. Comput. Stud.* **2006**, *64*, 799–810. [CrossRef]
49. Parasuraman, A.; Zeithaml, V.A.; Malhotra, A. ES-QUAL: A multiple-item scale for assessing electronic service quality. *J. Serv. Res.* **2005**, *7*, 213–233. [CrossRef]
50. Kim, Y.; Krishnan, R. On product-level uncertainty and online purchase behavior: An empirical analysis. *Manag. Sci.* **2015**, *61*, 2449–2467. [CrossRef]
51. Pahnila, S.; Mikko, S.; Viasong, Z. Integrated Habit into UTAUT: The Chinese eBay Case. *Pac.-Asia J. Assoc. Inf. Syst.* **2011**, *3*, 1–30.
52. Davis, F.D. A Technology Acceptance Model for Empirically Testing New End-User Information Systems Theory and Result. Ph.D. Dissertation, Massachusetts Institute of Technology, Sloan School of Management, Cambridge, MA, USA, 1986. Available online: https://dspace.mit.edu/bitstream/handle/1721.1/15192/14927137-MIT.pdf (accessed on 10 July 2022).
53. Lee, Y.; Kozar, K.A.; Larsen, K.R. The technology acceptance model: Past, present, and future. *Commun. Assoc. Inf. Syst.* **2003**, *12*, 50. [CrossRef]
54. Yaseen, S.G.; Dajani, D.; Hasan, Y. The impact of intellectual capital on the competitive advantage: Applied study in Jordanian telecommunication companies. *Comput. Hum. Behav.* **2016**, *62*, 168–175. [CrossRef]
55. Hew, T.S.; Kadir, S.L.S.A. Behavioral intention in cloud-based VLE: An extension to Channel Expansion Theory. *Comput. Hum. Behav.* **2016**, *64*, 9–20. [CrossRef]
56. Williams, M.D.; Rana, N.P.; Dwivedi, Y.K. The unified theory of acceptance and use of technology (UTAUT): A literature review. *J. Enterp. Inf. Manag.* **2015**, *28*, 443–488. [CrossRef]
57. Dajani, D.; Hegleh, A.S.A. Behavior intention of animation usage among university students. *Heliyon* **2019**, *5*, e02536. [CrossRef]
58. Abushakra, A.; Nikbin, D. Extending the UTAUT2 model to understand the entrepreneur acceptance and adoption internet of things (IoT). In Proceedings of the International Conference on Knowledge Management in Organizations (KMO 2019), Zamora, Spain, 15–18 July 2019; Springer: Cham, Switzerland, 2019; pp. 339–347.
59. El-Masri, M.; Tarhini, A. Factors affecting the adoption of e-learning systems in Qatar and USA: Extending the Unified Theory of Acceptance and Use of Technology 2 (UTAUT2). *Educ. Technol. Res. Dev.* **2017**, *65*, 743–763. [CrossRef]
60. Alshirah, M.; Lutfi, A.; Alshirah, A.; Saad, M.; Ibrahim, N.M.E.S.; Mohammed, F. Influences of the environmental factors on the intention to adopt cloud-based accounting information system among SMEs in Jordan. *Accounting* **2021**, *7*, 645–654. [CrossRef]
61. Olson, J.M.; Zanna, M.P. Attitudes and attitudes change. *Annu. Rev. Psychol.* **1993**, *44*, 117. [CrossRef]
62. Wicker, A.W. Attitudes versus actions: The relationship of verbal and overt behavioral responses to attitude objects. *J. Soc.* **1969**, *25*, 41–78. [CrossRef]
63. Hale, J.L.; Householder, B.J.; Greene, K.L. The theory of reasoned action. In *The Sage Handbook of Persuasion: Developments in Theory and Practice*, 2nd ed.; Dillard, J.P., Shen, L., Eds.; Sage Publications: Thousand Oaks, CA, USA, 2002; pp. 259–286. [CrossRef]
64. Faham, E.; Asghari, H. Determinants of behavioral intention to use e-textbooks: A study in Iran's agricultural sector. *Comput. Electron. Agric.* **2019**, *165*, 104935. [CrossRef]
65. Sparks, P.; Shepherd, R.; Wieringa, N.; Zimmermanns, N. Perceived behavioral control, unrealistic optimism and dietary change: An exploratory study. *Appetite* **1995**, *24*, 243–255. [CrossRef]
66. Banerjee, D.; Cronan, T.P.; Jones, T.W. Modeling it ethics: A study in situational ethics. *MIS Q.* **1998**, *22*, 31–60. [CrossRef]
67. Leonard, L.N.K.; Cronan, T.P.; Kreie, J. What influences ethical behavior Intentions planned behavior, reasoned action, perceived importance or individual characteristics? *Inf. Manag.* **2004**, *42*, 143–158. [CrossRef]
68. Chan, M.; Woon, I.; Kankanhalli, A. Perceptions of information security in the workplace: Linking information security climate to compliant behavior. *J. Inf. Priv. Secur.* **2005**, *1*, 18–41. [CrossRef]
69. Cox, J. Information systems user security: A structured model of the knowing-doing gap. *Comput. Hum. Behav.* **2012**, *28*, 1849–1858. [CrossRef]
70. Johnston, A.C.; Warkentin, M. Fear appeals and information security behaviors: An empirical study. *MIS Q.* **2010**, *34*, 549–566. [CrossRef]
71. Knapp, K.J.; Marshall, T.E.; Rainer, R.K.; Ford, F.N. Information security: Management's effect on culture and policy. *Inf. Manag. Comput. Secur.* **2006**, *14*, 24–36. [CrossRef]

72. Armitage, C.J.; Conner, M. Efficacy of the theory of planned behavior: Ameta-analytic review. *Br. J. Soc. Psychol.* **2001**, *40*, 471–499. [CrossRef] [PubMed]
73. Greaves, M.; Zibarras, L.D.; Stride, C. Using the theory of planned behavior to explore environmental behavioral intentions in the workplace. *J. Environ. Psychol.* **2013**, *34*, 109–120. [CrossRef]
74. Kidwell, B.; Jewell, R.D. An examination of perceived behavioral control: Internal and external influences on intention. *Psychol. Mark.* **2003**, *20*, 625–642. [CrossRef]
75. Lam, T.; Hsu, C.H. Predicting behavioral intention of choosing a travel destination. *Tour. Manag.* **2006**, *27*, 589–599. [CrossRef]
76. Alalwan, A.A.; Dwivedi, Y.K.; Rana, N.P. Factors influencing adoption of mobile banking by Jordanian bank customers: Extending UTAUT2 with trust. *Int. J. Inf. Manag.* **2017**, *37*, 99–110. [CrossRef]
77. Shiau, W.L.; Chau, P.Y. Understanding behavioral intention to use a cloud computing classroom: A multiple model comparison approach. *Inf. Manag.* **2016**, *53*, 355–365. [CrossRef]
78. Mahardika, H.; Thomas, D.; Ewing, M.T.; Japutra, A. Comparing the temporal stability of behavioral expectation and behavioral intention in the prediction of consumers' pro-environmental behavior. *J. Retail. Consum. Serv.* **2020**, *54*, 101943. [CrossRef]
79. Cheng, T.E.; Lam, D.Y.; Yeung, A.C. Adoption of internet banking: An empirical study in Hong Kong. *Decis. Support Syst.* **2006**, *42*, 1558–1572. [CrossRef]
80. Madden, T.J.; Ellen, P.S.; Ajzen, I. A comparison of the theory of planned behavior and the theory of reasoned action. *Personal. Soc. Psychol. Bull.* **1992**, *18*, 3–9. [CrossRef]
81. Wu, L.; Chen, J.L. An extension of trust and TAM model with TPB in the initial adoption of online tax: An empirical study. *Int. J. Hum. Comput. Stud.* **2005**, *62*, 784–808. [CrossRef]
82. Ringle, C.M.; Sarstedt, M. Gain more insight from your PLS-SEM results: The importance-performance map analysis. *Ind. Manag. Data Syst.* **2016**, *116*, 1865–1886. [CrossRef]
83. Hair, J.F., Jr.; Hult, G.T.M.; Ringle, C.M.; Sarstedt, M. *A Primer on Partial Least Squares Structural Equation Modeling (PLS-SEM)*; Sage Publications: Thousand Oaks, CA, USA, 2021.
84. Michalos, A.C. (Ed.) . *Encyclopedia of Quality of Life and Well-Being Research*; Springer: Dordrecht, The Netherlands, 2014.
85. Cronbach, L.J. Coefficient alpha and the internal structure of tests. *Psychometrika* **1951**, *16*, 297–334. [CrossRef]
86. Netemeyer, R.G.; Bearden, W.O.; Sharma, S. *Scaling Procedures: Issues and Applications*; Sage Publications: Thousand Oaks, CA, USA, 2003.
87. Fornell, C.; Larcker, D. Evaluating Structural Equation Models with Unobservable Variables and Measurement Error. *J. Mark. Res.* **1981**, *18*, 39–50. [CrossRef]
88. Hair, J.F.; Ringle, C.M.; Sarstedt, M. PLS-SEM: Indeed, a silver bullet. *J. Mark. Theory Pract.* **2011**, *19*, 139–152. [CrossRef]
89. Henseler, J.; Ringle, C.M.; Sarstedt, M. A new criterion for assessing discriminant validity in variance-based structural equation modeling. *J. Acad. Mark. Sci.* **2015**, *43*, 115–135. [CrossRef]
90. Venkatesh, V.; Thong, J.Y.; Xu, X. Unified theory of acceptance and use of technology: A synthesis and the road ahead. *J. Assoc. Inf. Syst.* **2016**, *17*, 328–376. [CrossRef]
91. Sharif, A.; Afshan, S.; Qureshi, M.A. Acceptance of learning management system in university students: An integrating framework of modified UTAUT2 and TTF theories. *Int. J. Technol. Enhanc. Learn.* **2019**, *11*, 201–229. [CrossRef]
92. Yen, Y.; Wang, Z.; Shi, Y.; Xu, F.; Soeung, B.; Sohail, M.T.; Juma, S.A. The predictors of the behavioral intention to the use of urban green spaces: The perspectives of young residents in Phnom Penh, Cambodia. *Habitat Int.* **2017**, *64*, 98–108. [CrossRef]
93. Jafarkarimi, H.; Saadatdoost, R.; Sim, A.T.H.; Hee, J.M. Behavioral intention in social networking sites ethical dilemmas: An extended model based on theory of planned behavior. *Comput. Hum. Behav.* **2016**, *62*, 545–561. [CrossRef]
94. Gleim, M.R.; Smith, J.S.; Andrews, D.; Cronin, J.J., Jr. Against the green: A multi-method examination of the barriers to green consumption. *J. Retail.* **2013**, *89*, 44–61. [CrossRef]
95. Xu, X.; Wang, S.; Yu, Y. Consumer's intention to purchase green furniture: Do health consciousness and environmental awareness matter? *Sci. Total Environ.* **2020**, *704*, 135275. [CrossRef] [PubMed]
96. Sheppard, B.H.; Jon, H.; Warshaw, P.R. The theory of reasoned action: A meta-analysis of past research with recommendations for modifications and future research. *J. Consum. Res.* **1988**, *15*, 325–343. [CrossRef]
97. Davis, F.D.; Bagozzi, R.P.; Warshaw, P.R. User acceptance of computer technology: A comparison of two theoretical models. *Manag. Sci.* **1989**, *35*, 982–1003. [CrossRef]
98. Mathieson, K. Predicting user intentions: Comparing the technology acceptance model with the theory of planned behavior. *Inf. Syst. Res.* **1991**, *2*, 173–191. [CrossRef]