



## **FACTORS AFFECTING THE USE OF E-LEARNING LIBRARY SERVICES DURING COVID 19: THE STUDY OF BUSINESS MANAGEMENT STUDENTS**

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### **ABSTRACT**

The main purpose of the study is to examine the antecedents to e-learning using intention. The study has examined the continual model examining the impact of service quality, information quality, and system quality on the perceived value of e-learning. Meanwhile, the impact of the perceived value of e-learning on the satisfaction of the students during the time of COVID-19 is also examined. Finally, the impact of satisfaction of the students on the e-learning using intention is also examined. The study has employed structural equation modeling and data is analyzed using SEM-PL. The suggested e-learning systems continued with the adoption model which was investigated empirically by using the survey data from an appropriate sample containing graduates and undergraduates' students which were 302 totals in number from the university in eastern China. This research work recognized different variables that impact the continuance intention of the digital learner while practicing the e-learning mechanism in universities. Finally, this research work focused to synchronize the two factors such as satisfaction and perceived value, and by the perception of continuance intention in line with a broad context investigation of variables that impact the continuance intentions of digital-learning programs in universities. By practicing the structural equation model (SEM) analysis, this research examines the general associations which play a significant role in observed learning satisfaction and value. The main purpose is not to investigate the particular courses, or the commonly followed procedure rather investigate a specific sample of digital users relating to attaining a general perspective regarding the e-learning mechanism which is provided in universities. The results would be significant for university students, academicians and policymakers as they seek to link practices and outcomes. The study is among the pioneers on the issues related to e-learning mechanisms in eastern China.

**Keywords:** e-learning using intention, perceived value, student satisfaction, covid-19, China

**JEL Codes:** D83, J28

### **I. BACKGROUND**

Many educational institutions are more in business during the conventional way of learning before the pandemic, this wave of viruses hits their business strategies as well. This outbreak of the virus was not planned of course that's why all closure and lockdown decisions were implemented even on the universities level as well. No anticipation regarding the wave of coronavirus so the situation of lockdown was also so undefined, through e-learning programs the education would be supposed to continue. Libraries performed their duties or services by themselves even all physical institutions and their buildings were shut down during that uncertain situation of pandemics. Although during pandemic there was e-library concept popping out their success depends upon the acceptance among teachers and learners (Sithole, 2014; Bhebhe and Ngwenya, 2016). During the COVID-19 strict lockdown, even libraries introduced the e-library concept for the welfare of society.

During the first wave of COVID-19, every institution and organization was shut down because of the Coronavirus risk factor. Social distancing was advised by the government and health workers, in this scenario China announced lockdown with no defined period. When the lockdown was implemented among institutions then no academic libraries were allowed to run their operations. Online educational programs were replaced by conventional learning where students and teachers had face-to-face interaction in their institution. Libraries were operational then the rapid change

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due to pandemic they had to face the unseen scenario of closure no physical operations were allowed. Libraries abruptly switched towards digital library resources because in online programs it was the need of an hour that they offered their services virtually for the teachers and learners. Although it was a tough decision it stimulated the e-learning programs because the digital library was a very innovative decision. Due to the common and excessive use of the internet, it has been noticed that there has been a boom in the e-commerce industry. Among other ways of learning, digitalization and internet development have supported and led to the new course of action in the provisioning of online training and educational programs. Currently one of the mainstream discussions in recent times regarding the information industry is the e-learning platforms that are highly encouraging and widely expanding due to the rapid development in terms of capability building, most importantly the reason behind its growth is the popularity of the internet and its widespread usage which encourages online learning programs among the government, the institutes of higher education, the online education to people incorporations, and various other sectors (Astuti & Febrian, 2019).

In universities, the e-learning setup provides a very convenient and supportive environment for seamless access to knowledge both to the students as well as to the faculty. According to the structural perception, the digital media act as a mainstream medium of information for professors and teachers, and university students as well, digital media support advanced learning and teaching practices, and their implementation is also encouraged in these academic libraries (Ajegbomogun et al., 2017; Coetzer & Mapulanga, 2020). However, the uninterrupted education system is the current requirement where its demand is ever increasing and the presence of updated technology for digital media platforms for information plays a vital role in its growth (Attaran et al., 2019). The most suitable function for this is the usage of advanced technology for the support of E-learning that is the proper medium of the information system to ease the access and facilitate learning to resources and services is utilized and managed by the academic development department, faculty, and an academic library. From the other perspective based on the different viewpoint of users although in terms of its recognition it has been encouraged to different user's levels, yet it needs to be understood that the rate of acceptance for continuous usage of an e-learning system is not much promising as it is still at a very low level (Tawafak et al., 2018). However, the e-learning programs support the culture of digital learning regarding library resources, although the e-learning users never consistently use these systems and do not prefer to adapt to these practices since there is a low rate of stable efficiency regarding library portals and which are interrelated to service quality, information quality, and system quality (Kalia, 2017; Audi et al., 2021).

In addition to this, Aljaafreh and Ma'aitah (2019) claimed that there has been certain limitations to the earlier research work regarding online learning since the objective of the research was limited to the practices for learning methods and the outcomes in terms of learning results, however, one of the important aspects of the framework was not addressed as the researchers hardly discovered any variables that determined the acceptance of e-learning platforms among its users and in Universities Another challenge associated with this that required attention was how to ensure for instance the user's acceptance for their constant practice of these online platforms. The background of continuance intention is already developed in the research work related to digital technology. The scholar's research about the factors which impact the digital learner's continuance intention. For instance, Lim et al., (2019) claimed about the experiences of electronic commerce service prolongation. While the earlier study has offered the understandings regarding the vital role of continuance intentions as per the reception of IT/IS, some other research work claimed that the continuance intention plays a vital role in e-learning systems practice, particularly in Universities As a result, this research is concerned about the upholding of the digital learners, the continuance intention to practice the e-learning methods in academic libraries which are planned and investigated empirically. Additionally, the opinion regarding value perception is an old concept that is not used in recent times, however, the widely used concept is focused on the behavior and behavioral intention; various researchers claimed about the absence of concentration in knowledge and determining observed value (Ramamoorthy et al., 2018).

Currently, the concentration regarding this concern has emerged again, the research work empirically investigated the association between continuance intention, quality, satisfaction, and value. The opinions regarding quality to IT/IS experience will influence the satisfaction and value, moreover, the satisfaction impacts the continuance intention (Kumar et al., 2018). Certainly, satisfaction and value act as moderators in determining the direct association between continuance intention and quality (Haider & Ali, 2015; Sajid & Ali, 2018; Kassem et al., 2019; Roussel et al., 2021; Senturk & Ali, 2021). According to the earlier discussion, the extent to which this research has explored specific parameters within the study relies upon the e-learning mechanism through the academic library and the main objective of this study is to explain the variables of e-learning in academic libraries and offer an overall perception of academic digital users ' regarding satisfaction and value of e-learning procedures.

## II. HYPOTHESIS DEVELOPMENT

Dhamdhare and Ganeshkhind (2017) stated that in the educational institution library play an important role, in the same way during the e-learning programs university libraries were very helpful and virtual learning is the way of education in which data usage, gadgets are very important for the learning and skills transformation through distance education. In the same way, Gruca (2010) claimed that virtual learning is the advanced way of distance education depending upon advanced technology and gadgets. Sharifabadi (2006) claimed that digital libraries are not just online access of educational resources but rather it has been transformed into a very complex yet powerful tool for the collection of data and provision as per the requirement with the integration of advanced searching techniques and ease of access.

Libraries play a vital part in the learning and teaching process because extra help is needed at both split ends (Mtega and Benard, 2014). The librarians from the educational institutions deliberately engage themselves in the digital system and this system played an important role in virtual learning programs. The transformation occurred in libraries as well, all operations of libraries transform into advanced and digital platforms because of the success of e-learning programs. This advancement in technologies and gadgets could be in the form of digital media for example video conferencing, intranets and extranets, digital versatile disc, compact disc-read only memory, internet, television, video/audiotape and satellite, and many more e-learning management systems for example Moodle, Classroom Board, and Blackboard. It's the need of an hour that libraries participate and operate into digital world services and provide content for the virtual learning programs. Moreover, libraries have to develop their resources and services according to the e-learning programs. In earlier studies, many research works and studies were conducted to understand the role of libraries in this pandemic (Chisita, 2020; Wang and Lund, 2020; Ali and Gatiti, 2020; Ahmed et al., 2018; Young, 2018). To support education in this tough time when physical libraries transformed into digital libraries and offer their services in all possible ways to promote education as possible. Chisita (2020) claimed that one of the roles of the library in this time of pandemic is to spread awareness among common peoples in their best possible way, libraries support social distancing and provide awareness among students as well. Libraries encourage all awareness programs regarding health by the different campaigns in the society. Ali and Gatiti (2020) claimed that during the pandemic situation all librarians played their role to ensure that all information about this pandemic was based on true evidence and data for example use of sanitizers, social distancing, general instructions on masks, hand washing, and other steps an individual can take to avoid this transmission of the virus. The libraries played an important role to start a joint venture with the big guns of the publishing business. For the development of digital association publishers and libraries will make a contract to provide resources to general peoples to connect with them. However, to develop interest among the general public regarding digital libraries and for their participation, the publishers and digital libraries provide free content and a vast range of collections that the public can read and educate themselves without any more difficulties (Falt and Das, 2020). For example, different known e-books and e-journals were made easy to approach through the digital libraries platform to the publisher's official websites (Nagarkar, 2020). Through the digital libraries platforms, the different libraries help the researchers and various teachers by providing resource content peer-viewed. Ali and Gatiti (2020) claimed that the librarians have to update the medical staff, researchers, and even the general public about the latest improvement and progress about the diagnosis kits, vaccination, and all the journals published about this pandemic COVID19.

"E-learning" is a perception that is used to explain the digital learning and teaching platforms and related resources for further understanding these are the systems that principally provide information electronically (Ajegbomogun et al., 2017). According to the academic circle, e-learning has been flourishing in the private business sector and institutions of higher education, the vigorous developments in the digital learning systems provide the supreme advantages (Ellis & Goodyear, 2019). The general extensive usage of the internet and linked information and communication technology (ICT) support to reform of the educational learning plans into e-learning systems which massively support the growth of the network as a mechanism for the advanced educational system (Troussas & Sgouropoulou, 2020). One of the well-established and recognized software firms provides advanced e-learning systems that are fully capable at a multi-level, completely synchronized, and connected system to support the provision of the distance learning program and have the potential of interactive communication that is a core objective for learning and understanding. For motivation of the masses and support for the digital learner improvement, various universities established libraries and employed an electronic library portal (Ebner, Schön, & Braun, 2020). However, e-portal provides all possible ways to find the solution to various problems which has been acknowledged in academic libraries for the e-learning mechanisms.

The terminology “academic library” is mentioned as a factor of educational systems, the IT practice efficiently empowered the libraries to participate in the educational learning systems by various possible methods (Cox, 2020). Digital technology eases the understanding and availability of electronic information sources, facilitating the academic staff for their research projects and they use IT in their educational teaching programs as well, on the other hand, digital technology ease the life of students as it is much more convenient as it helps them in their studies they can easily search topic from web pages and electronic sources, this technology is equally helpful for the staff of academic institution because it supports them to enhance their capabilities for practicing the refined system of information (Pateria, 2019). Consequently, in the universities, the e-learning forum not only consists of course content that has to be tested, learned, and read, but it also has links to the infrastructure for these platforms that includes digital resources, a platform for the students and teachers facilitation for discussion, sometimes, for their interactive sessions, and meetings to schedule their plans, tests, movies, and interactive exercises for their participation (Chen, Yang, & Huang, 2015). Moreover, the teachers employed in academic libraries are the teachers of a new era with the knowledge of these digital platforms and how to operate these. They serve their services in a digital and online set-up they work in both formats including the digital online and conventional face-to-face classroom environments. The Academic librarians mostly assist the subject academicians and deliver information related to the research, learning, and teaching. Academic libraries with the support of e-learning operate with suitable communication technologies by offering the continuous availability of electronic services and resources. According to Joo et al., (2017), the “post-acceptance model of IS continuance” strives to discuss the IS user’s plan to stay with IS usage. Since the system of digital learning is not the latest one and it has already been popular in a large number of people who acknowledged this technology, the scholars considered the individual’s intention to constantly use the e-learning systems in universities they took it as a substitute for her or his behavioral intention. However, the researcher claimed that the extent to which a student agrees to practice the e-learning systems in the future and refers to this system in his or her social circle in the future is known as the continuance intention to use e-learning systems in universities. The definition of perceived value for a consumer is “the customer’s complete evaluation of the benefits of services or product that he believes he will get and that depends upon the comparison which is based on what the customer is expecting and what is being provided to him” such as, a trade-off among perceived costs and perceived benefits (Chen & Lin, 2019). EUGENE (2017) claimed that when library user feels that the service value of a library is commendable, the library users in return refer to the library among their friends and family. The scholars anticipated that in the academic libraries the user’s continuance of e-learning using intention systems will be impacted by the perception of user value.

The level of satisfaction gained from the usage of an e-learning system refers to the individual’s assessment and its reaction which impact his or her overall experience of goods or services (Susanto, Chang, & Ha, 2016). The degree to which individuals perceive those positive feelings are gained from a particular experience is called satisfaction (Mouakket & Bettayeb, 2015). Expectation Confirmation Theory suggested that future intention had a positive impact on the satisfaction level of product and service (Susanto et al., 2016). Kim, Chang, and Park (2015) claimed the empirical research work about the concept that a customer who is more satisfied with a particular service will be engaged more on its usage and would feel more comfortable in using it more frequently. This concept is hooked along with the adaptive expectation's theory, which explains that the consumers' anticipation about the upcoming preferences will depend upon the recent preferences, and variation in future taste is not integrated with it (Chatzigeorgiou, Christou, & Simeli, 2017). Certainly, the relation between the usage of IT services and the re-purchasing of services in a consumer perspective, for the IS success the satisfaction has also been generally assumed as a vital component (Lee & Kim, 2017; Rahi & Ghani, 2019). For example, satisfaction was used as a vital component in earlier research as well for the continuance intention of online tax-filing, web-based learning, and electronic commerce service (Abbas & Hamdy, 2015; Joo et al., 2017). However, recently, the research developed the baseline based on the previous study to acknowledge that the more satisfied users who have great experience of service or product will have continuance intention for e-learning system usage. The earlier research work represents the vital role of satisfaction on the continued usage of services or products. The continuance intentions and effectiveness of e-learning are determined by the level of satisfaction because satisfaction acts as the main factor in it. In the same way, Hsu, Lin, and Fu (2015) claimed that value has a direct relationship with satisfaction because when the library users are satisfied, they perceive the higher value of service, and they will have a more perception of satisfaction in the future as well.

Kim et al. (2015) recognized that the perceived value can be impacted on the satisfaction and continuance intentions for the future usage of IT/IS. The scholars studied to evaluate whether in the relationship of continuance intention and perceived value the important factor i-e satisfaction act as a mediating factor or not. Therefore, the following hypotheses are presented in past studies related to satisfaction and perceived value, the researcher claimed that the

usage of IS and the satisfaction level of the user has a direct impact on the information quality and system quality (Lee & Kim, 2017; Rahi & Ghani, 2019). The modification of this model which is designed for the applications of user development and the researchers claimed the significant link between system quality and satisfaction and the information quality and satisfaction. Arunachalam (2019) investigated the empirical research regarding web-based decision support systems and measured that decision-making satisfaction has strong antecedents through system quality and information quality. Moreover, the web quality which consists of service quality, system quality, and information quality positively impacts users' satisfaction in terms of online tax-filing systems and the setting of e-learning (Ramos et al., 2015; Rodríguez & Meseguer, 2016; Naseem et al., 2021; Sarfarz et al., 2021). Web quality has three important antecedents which are service quality, information quality, and system quality; they measure satisfaction and additionally anticipate academic libraries regarding continuance intention of e-learning.

System quality by itself determines the information processing system; it is influenced by the user's needs, which are well-defined during the development and the system's analysis (Rodríguez & Meseguer, 2016). System quality act as a significant variable in the satisfaction of user with a web purchase: privacy, security, navigation, appearance, delay, and technical adequacy are the significant variables. Rodríguez and Meseguer (2016) have not completely investigated DeLone and McLean's model of IS success. The outcomes showed that user satisfaction is positively impacted by the system quality. (Lee & Kim, 2017; Rahi & Ghani, 2019; Mohsin et al., 2021) claimed that user satisfaction and perceived value have a positive impact on the system quality. Gürkut and Nat (2017) select "report content and form" as a degree of user-perceived efficiency of the mechanism; content consists of the sequencing of the information, accuracy, mode of presentation, relevance, timeliness of reports, adequacy, the form included quality of format and understandability of report. Information quality defines as the degree to which the users perceive that information is complete, accurate, timely, and relevant. Currently, information quality is referred to as the user's perception regarding the quality of information existing on a website Laumer et al., (2017); information quality also determines the value that the user acquired information from this website. On the other hand, "information" is defined as "the content available on the online application which is presented for the businesses and customers. Moreover, the user's intention to visit again and satisfaction from the product and service are significantly impacted by the information quality. Kang and Namkung (2019) claimed that IS that gives information of high quality will be referred to as beneficial as it supports the user to enhance his or her work performance and make comprehensive decisions. However, the scholars claimed that information quality will tend towards user satisfaction and perceived value.

The functionality of systems is determined by system quality. Satisfaction is a comprehensive emotion that is impacted by contextual and personal factors, price, product quality, and service quality. With the acknowledgment of the significant role of the IS department and the significance of e-commerce and information systems, now these days, scholars started to consider service quality as a determinant of IS success and satisfaction level. For example, Kang and Namkung (2019) claimed that the service information has the condition to motivate the consumer satisfaction level and in the same way support the online stores to sustain their healthy relationships with the customers. The author recognized that customer satisfaction is impacted by service quality which is a significant variable. Moreover, Hapsari, Clemes, and Dean (2017) showed that user satisfaction, as well as perceived value, significantly impacted the service quality. The continuance intentions describe both satisfaction and perceived value of users. However, this research work stated the following hypotheses:

**H1:** System quality (SQU) has a significant impact on the perceived value of the academic library for e-learning during COVID-19.

**H2:** Information quality (INQ) has a significant impact on the perceived value of the academic library for e-learning during COVID-19.

**H3:** Service quality (SRQ) has a significant impact on the perceived value of the academic library for e-learning during COVID-19.

**H4:** Perceived value (PV) has a significant impact on satisfaction for the academic library for e-learning during COVID-19.

**H5:** Satisfaction (SAT) has a significant impact on the intention of using e-learning services continuously academic library for e-learning during COVID-19.

### III. METHODOLOGY

#### III.I. SAMPLE

The suggested e-learning systems continued with the adoption model which was investigated empirically by using the survey data from an appropriate sample containing graduates and undergraduate's students which were 302 total in

number from the university in eastern China, they all had experience in an academic library of a university in Eastern China of practicing online learning programs. From the sample of a total of 302 students, there was 57 percent of females and 43 percent were males; their mean age was 21.3. In this analysis, age and gender were counted as control variables. The data is gathered during the time of COVID-19

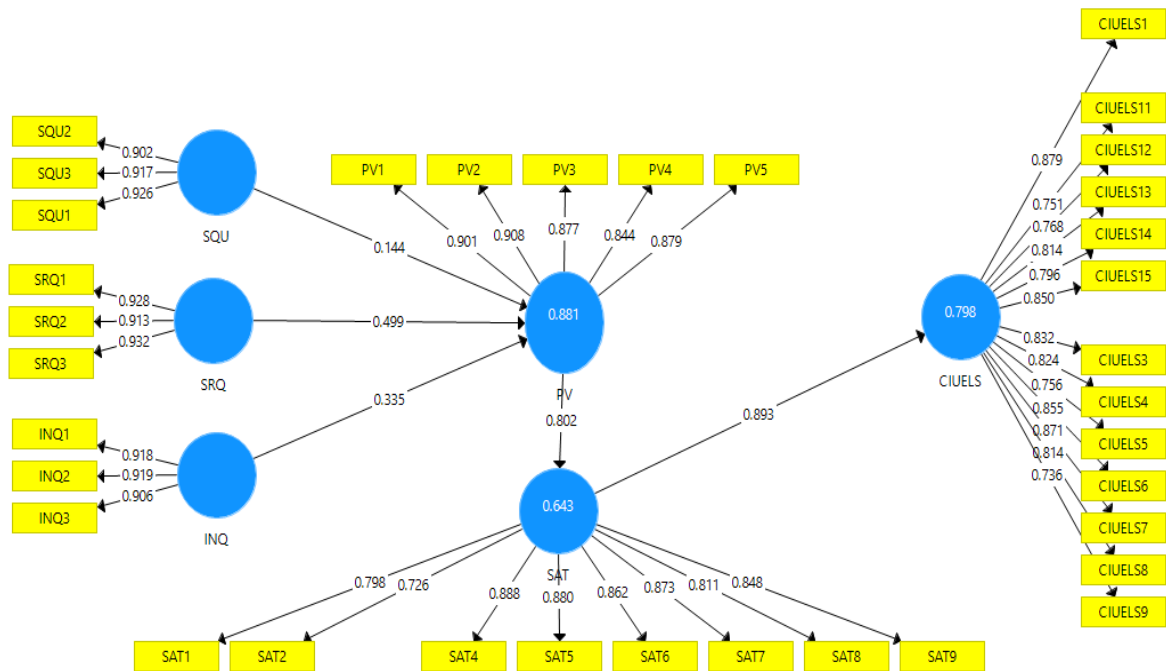
### III.II. SURVEY QUESTIONNAIRE

The questions asked in the questionnaire were structured on an analysis of the previous research results and particular features of the experience of e-learning systems and their continuance intention. The questionnaire is divided into seven parts. Part 1 and Part 2 contained the measured amount of information quality and system quality, which is reformed from (Lee & Kim, 2017; Rahi & Ghani, 2019) They are further divided into eleven items. Part3 contained the measured amount of service quality, which was further divided into three items found from research. Part 4 consists of three items that are allocated with the amount of perceived value modified from. Part 5 consists of the value of satisfactions adapted from Susanto et al. (2016) and this part is further divided into three items. Part 6, contained the measurement of continuance intentions, modified from Joo et al. (2017), this part is further divided into three items. Lastly, part 7 contained the defendant data source, it is further divided into three items: class year, gender, and age. The whole questionnaire was revised and already investigated to guarantee content authenticity. Besides the respondent data, which is calculated through a categorical scale, all items of the first six parts of the questionnaire were calculated by using the five-point Likert-type scale from “strongly disagree (1)” to “strongly agree (5)”.

### IV. RESULTS

The study has used SEM-PLS for the data analysis which comprises two steps namely the assessment of the measurement model and assessment of the structural model. The measurement model assessment is carried out to determine the reliability and validity of the model as well as the individual items used. The measurement model of the current study is shown in figure 1.

Figure 1



### V. MEASUREMENT MODEL

To measure the individual item loading, a PLS algorithm is used and the threshold value is equal to or above 0.7 that is acceptable ((Ong & Puteh, 2017; Richter, Cepeda, & Roldán, 2016; Adeleke, Bahaudin, & Kamaruddeen, 2015; Henseler, Hubona, & Ray, 2016; Naala, Nordin, & Omar, 2017).

**Table 1: Outer Loadings**

	CIUELS	INQ	PV	SAT	SQU	SRQ
CIUELS1	0.879					
CIUELS11	0.751					
CIUELS12	0.768					
CIUELS13	0.814					
CIUELS14	0.796					
CIUELS15	0.850					
CIUELS3	0.832					
CIUELS4	0.824					
CIUELS5	0.756					
CIUELS6	0.855					
CIUELS7	0.871					
CIUELS8	0.814					
CIUELS9	0.736					
INQ1		0.918				
INQ2		0.919				
INQ3		0.906				
PV1			0.901			
PV2			0.908			
PV3			0.877			
PV4			0.844			
PV5			0.879			
SAT1				0.798		
SAT2				0.726		
SAT4				0.888		
SAT5				0.880		
SAT6				0.862		
SAT7				0.873		
SAT8				0.811		
SAT9				0.848		
SQU2					0.902	
SQU3					0.917	
SRQ1						0.928
SRQ2						0.913
SRQ3						0.932
SQU1					0.926	

The reliability test shown in table 2 below confirms that there is no issue of reliability in our study.

**Table 2: Reliability**

	Cronbach's Alpha	rho_A	Composite Reliability	Average Variance Extracted (AVE)
CHISELS	0.957	0.962	0.962	0.660
INC	0.902	0.905	0.939	0.837
PV	0.929	0.930	0.946	0.778
SAT	0.938	0.939	0.949	0.701
SQU	0.902	0.903	0.939	0.837
SQR	0.915	0.918	0.946	0.855

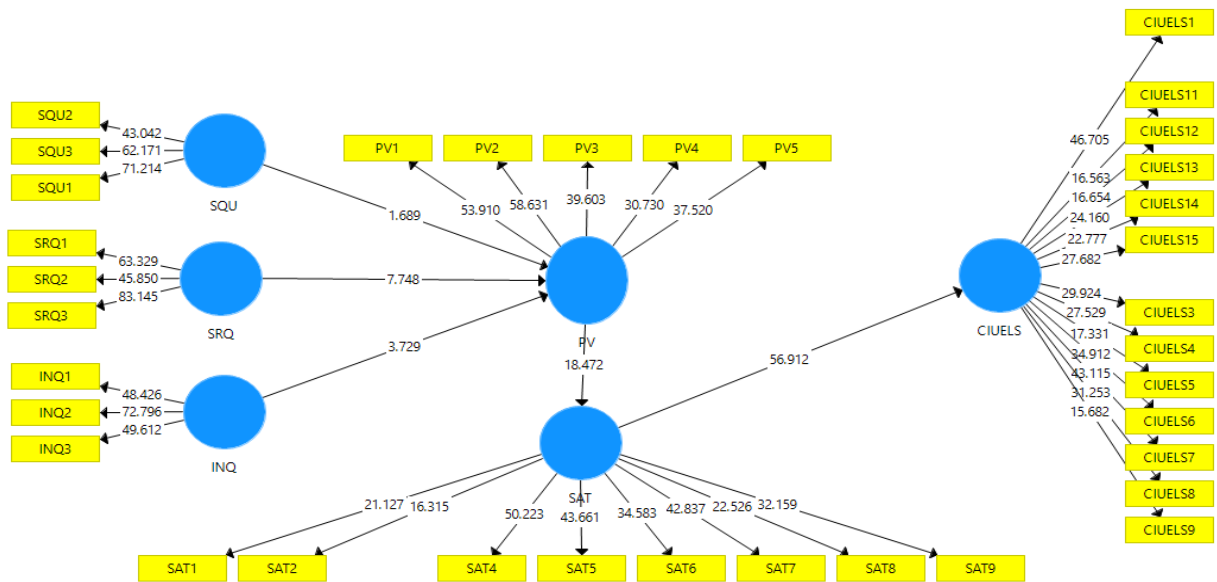
Furthermore, the Fornell-Larcker criterion and cross-loadings techniques are the main measures that are generally employed for the discriminant validity (Henseler et al., 2016; Ringle et al., 2018(Basheer, Hafeez, Hassan, & Haroon, 2018; Ringle, Sarstedt, & Mitchell, 2018). The results of the PLS algorithm confirm that there is no issue of validity in our case.

**Table 3: Validity**

	CIUELS	INQ	PV	SAT	SQU	SRQ
<b>CHISELS</b>	0.893					
<b>INQ</b>	0.723	0.905				
<b>PV</b>	0.755	0.894	0.882			
<b>SAT</b>	0.863	0.786	0.802	0.837		
<b>SQU</b>	0.688	0.910	0.879	0.769	0.905	
<b>SRQ</b>	0.707	0.856	0.710	0.756	0.861	0.900

Once the measurement model is established, the next step is to determine the structural model (Hatamifar, Darban, & Rezvani, 2018). Structural models explain the structural relationship between and among the variables of the study. The structural model of the current study is shown in figure 2 below.

**Figure 2**



**VI. STRUCTURAL MODEL**

The results of the Path relationship are shown in table 4 below. The results indicate that all the direct paths are significant at a p-value less than 0.05

**Table 4: Direct Relationship**

	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	T Statistics ( O/STDEV )	P Values
<b>INQ -&gt; PV</b>	0.335	0.329	0.090	3.729	<b>0.000</b>
<b>PV -&gt; SAT</b>	0.802	0.802	0.043	18.472	<b>0.000</b>
<b>SAT -&gt; CIUELS</b>	0.893	0.895	0.016	56.912	<b>0.000</b>
<b>SQU -&gt; PV</b>	0.144	0.146	0.085	1.689	<b>0.046</b>
<b>SRQ -&gt; PV</b>	0.499	0.503	0.064	7.748	<b>0.000</b>

In the estimation of structural models, R-square, which is the coefficient of determination, is considered as one of the

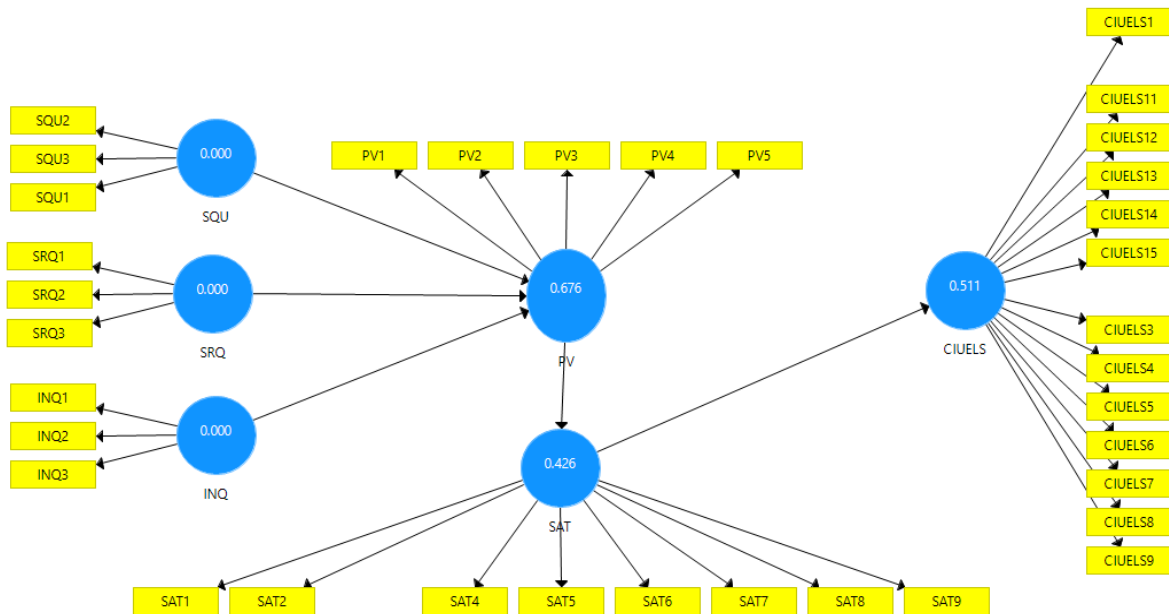


main factors (Hair et al., 2017; Henseler et al., 2016; Naiwen et al., 2021; Li et al., 2021) with a standard range between 0 to 1.

**Table 6: R-Square**

	R Square
CIUELS	0.798
PV	0.881
SAT	0.643

**Figure 3.**



**VII. BLINDFOLDING**

To confirm that model has predictive relevance, the Q2 should be greater than zero i.e.  $Q^2 > 0$ . In our case the Q2 value of all the factors is non-zero

**Table 7: Q-Square**

	SSO	SSE	Q <sup>2</sup> (=1-SSE/SSO)
CIUELS	2821.000	1379.449	0.511
INQ	651.000	651.000	
PV	1085.000	351.246	0.676
SAT	1736.000	996.385	0.426

**VIII. RESULTS**

The latest research work shows that satisfaction and perceived value have significantly positive impacts on web quality (Which included service quality, information quality, and system quality). System quality has a significant and direct impact on user satisfaction and perceived value, Lowry and Wilson (2016) claimed this relationship, which showed that a developed, well-designed, and implemented system is an essential requirement to develop user satisfaction and user-perceived values. This online survey has a completely automatic Question-Answering (QA) System that permits the students to ask any query in a general language and obtain their answers concisely and rapidly. The user satisfaction and user-perceived value have positive impacts on the information quality, for the reason, that information quality indicates the quality of outputs which are produced by the information system and these outputs are in the form of online screens or reports (Lee & Kim, 2017; Lowry & Wilson, 2016; Rahi & Ghani, 2019).

Moreover, in service quality, for instance, the rapid reply of any query plays a vital role as compared to the information quality and system quality which impact the user’s satisfaction and perceived value. Research work which claimed

that enhancement in the web technologies, the addition of the user-familiar, and more appropriate solutions, contained virtual reality, user customization, and audio-visual support has resulted in a refined and user-friendly experience. The results are in conforming with Rodríguez and Meseguer (2016), who claimed that rapid and appropriate reaction towards service requests and quick acknowledgment of the user's questions to evaluate what they demand more proficiently, will also impact the user's perception and user's continuance intentions.

Additionally, user satisfaction is directly impacted by the user-perceived value, and for continuance intentions of using e-learning systems in universities, the user-perceived value and user satisfaction are considered as direct antecedents, which helps Mittal (2015) in getting the results. However, according to the value-added e-learning systems, e-learning workers must practice different plans to encourage the customization of user's perception through digitalization and integration of different smart tools, for instance, bulletin boards, value-added search mechanism, the transmission of personalized relevant messages, and personalized web page, are linked to gain the user satisfaction and user perceptions value.

Consequently, this research work indicates that satisfaction plays as a mediator among the relationship of continuance intentions and perceived value, in line with earlier research. It indicates that the significant role of perceived value in willingness to use e-learning systems in future is to understand through the mediating impact of satisfaction. However, few operating plans could be implemented through digital learners in planning and designing their services, for instance, availability of several e-learning programs by manual instructions and support the continuity of the system through quick response through the service quality, however, it leads towards the higher user satisfaction and continuance intention as well.

## IX. CONCLUSIONS

This study discussed three significant influences which impact academic values. Firstly, in the context of IT./IS the continuance model was structured, but unfortunately, no results found that what are the variables that impact the digital user's continuance intention from the user's satisfaction perspective and perceived value. The results at an extensive level highlight the value of perception capability and the anticipation about the satisfaction level that the individuals will continue the e-learning program practice in their university library set-up. The above-discussed continuance model was investigated appropriately and this study claimed about the intermediating role of satisfaction and perceived value towards continuance intention of the digital learner while experiencing the e-learning programs in universities. Second, this study literature discussed the web quality which was practicing and investigating three further quality variables to evaluate that how to improve the digital learner's perception of value and their satisfaction level towards the online learning programs systems in Universities. Most importantly, in the process of e-learning, the digital learner considers service quality more importantly as compare to the information quality and system quality; this understanding offers further details related to information for teachers and service system suppliers for various mechanics for efficient and effective tools and techniques to understand digital learner's need associated to e-resources. Third, to sustain the appreciated and satisfied e-learner's experience of using the online systems in the future in universities teachers might develop suitable e-teaching and e-learning materials to support the competitive market benefits of this digital market in link to encourage the digital learner's interests and inspiration. However, the digital user holding is a vital concern, the digital learner who is satisfied are never an expensive and more efficient ambassador of the e-learning program through word-of-mouth as compared to the other modes of communication or mass media and print media because higher authenticity is linked with the user's experiences

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