

pISSN: 1906 - 6406 The Scholar: Human Sciences
 eISSN: 2586 - 9388 The Scholar: Human Sciences
<http://www.assumptionjournal.au.edu/index.php/Scholar>

Factors Impacting Postgraduate Students' Satisfaction and Continuance Intention with Online Education in Chengdu, China

Yuli Zeng*

Received: September 29, 2023. Revised: January 9, 2024. Accepted: January 29, 2024.

Abstract

Purpose: This study examined the satisfaction and continuance intention of post-graduates pursuing a degree in accounting, translation, Chinese language and literature, and ideological and political education in Chengdu, China, for online learning. The conceptual framework includes perceived ease of use, perceived usefulness, system quality, service quality, information quality, satisfaction, and continuance intention. **Research design, data, and methodology:** This study employed a quantitative survey approach to gather data from a sample of 500 postgraduate participants. To gauge the research instrument's validity, Item-Objective Congruence (IOC) was employed, and the internal consistency reliability was assessed through a pilot study using the Cronbach alpha coefficient. The sampling methodology encompassed a combination of judgmental, quota, and convenience sampling techniques. Data analysis involved evaluating model fit, reliability, and validity through Confirmatory Factor Analysis (CFA) and Structural Equation Models (SEM). **Results:** In this study, all hypotheses find support. Perceived ease of use, perceived usefulness, system quality, service quality, and information quality exert significant influences on satisfaction. Notably, perceived ease of use significantly affects perceived usefulness, while satisfaction notably influences continuance intention. **Conclusions:** The findings help gain a greater awareness of the main variables that impact the acceptance and application of internet-based instruction in higher education institutions.

Keywords: Online Education, Perceived Ease of Use, Perceived Usefulness, Satisfaction, Continuance Intention

JEL Classification Code: E44, F31, F37, G15

1. Introduction

The fact that remote instruction unites every educational activity carried out by individuals or groups, digitally and physically, via web-based or standalone devices makes it possible to access a learning platform without being restricted by period or geographical limitation (Naidu, 2006). The following techniques can be implemented alone or in combination to deliver education online (Xin et al., 2020). The modern information society is still experiencing scientific and technical advancements, an immense increase in knowledge and information, and a demand for an educational environment that supports the expansion of e-learning. With more than 989 million consumers, China has the greatest number of frequent network members globally.

Moreover, China's total online usage rate currently stands at 70.4%, much higher than the average worldwide level, based on the 47th "Statistical Report on Internet Development in China."

According to the 47th "Statistical Report on Internet Development in China," China's internet browsing rate has surpassed 70.4%, more than the global average. Anybody can take advantage of educational websites through a laptop or cellphone. Mobile gadgets can cross both space and time boundaries. People can be categorized as learners and content suppliers due to the association of people using online learning platforms in educational pursuits (Huang, 2019). Nevertheless, there are two online educational activities: interactive online instruction and independent self-directed education. Independent, self-directed learning

*Yuli Zeng, School of Foreign Languages and Cultures, Xihua University, China. Email: 80773843@qq.com

© Copyright: The Author(s)

This is an Open Access article distributed under the terms of the Creative Commons Attribution Non-Commercial License (<http://creativecommons.org/licenses/by-nc/4.0/>) which permits unrestricted noncommercial use, distribution, and reproduction in any medium, provided the original work is properly cited.

is online, which students accomplish mainly by watching videos.

The present investigation, which relies on earlier studies, investigates the variables that have an essential effect on distance learning for postgraduate learners in China who specialize in ideological and political education, Chinese language and literature, accounting, and translation. The primary goal of the investigation was to determine Chinese students' intentions to continue adopting online learning and a sense of satisfaction with it.

Due to the associated components, it appears that a quantifiable study needs to be conducted to figure out how postgraduate students in Sichuan province, China, who specialize in ideological and political education, Chinese language and literature, accounting, and translation assess the extent of satisfaction and their willingness to continue utilizing online education.

2. Literature Review

2.1 Perceived Usefulness

The concept of "perceived usefulness" is an individual's feeling of trust that an item can aid them in carrying out an occupation, as defined by Zhang et al. (2008). Like numerous past scientific investigations, perceived usefulness is an especially significant factor in the Technology Acceptance Model (Teng, 2014). As stated by Agudo-Peregrina et al. (2014), the perceived usefulness of online educational programs is strongly linked to factors including location, best time, attitudes toward education, and preferred learning paradigm. It is also possible to gauge an individual's opinion of the value of online instruction by asking them the extent to which they believe it will encourage them to accomplish their objectives (Lin et al., 2011). The definition of "positive usefulness" (PU) refers to how people rate the advantages of applying internet connectivity that is wireless (Islam et al., 2017). The level to which somebody perceives that adopting a particular strategy could boost their productivity at work (Chang & Tung, 2008).

As stated by Saadé and Bahli (2005), an instrument that delivers unique benefits—like the capacity to submit assignments—would be seen as profitable to improve achievement and generate sufficient satisfaction. Therefore, this makes perceived usefulness a crucial variable in the present research. Jeong and Lambert (2001) noted that perceived usefulness was correlated more closely with technical use compared to perceived ease of use. Perceived usefulness is one of the most important key belief structures when applying information technology (Teng, 2014). As application experience grows, perceived ease of use might gradually diminish or even lose significance; yet, perceived

usefulness has been demonstrated to be a consistent construct that can forecast how users act before and following acceptance (Chang, 2013).

H1: Perceived usefulness has a significant impact on satisfaction.

2.2 Perceived Ease of Use

As defined by Davis (1989), PEOU indicates the rate at which someone feels that employing that data system is likely to be simple. As stated by Lin et al. (2011), PEOU in the context of online instruction refers to how much the individual believes that employing an internet-based instructional system is likely to be simple. Moreover, it was reported by Dishaw and Strong (1999) that perceived ease of use was an essential variable that influenced system acceptability and adoption. In the opinion of Zhang et al. (2008), perceived ease of use demonstrated that employing new technology could seem easy and simple. The perceived ease of use is the amount to which somebody feels that employing MOOCs takes minimal time and effort, as defined by Wu and Chen (2017). The summary of their assessment of a significant aspect of using technology, including the interface for users and the necessary processes, is the concept of PEOU, which is closely related to motivation among learners (Vululleh, 2018).

Perceived usefulness and perceived ease of use are essential when forecasting an individual's behavioral decision to accept educational technologies. Furthermore, as previously demonstrated in some investigations, perceived usefulness influences the relationship between users' attitudes and perceived ease of use. Through views of its usefulness and satisfaction, PEOU indirectly boosted the willingness of learners to adopt web-based education, as demonstrated by Lee and Park (2008). The effectiveness and perceived ease of use of online educational platforms are correlated in Roca and Gagne (2008) research. An individual may also employ an internet-based educational system under the explicit or implicit influence of PEOU via PU. According to Yakubu and Dasuki (2018), Davis's perceived ease of use is only one of the six characteristics used to evaluate system quality.

H2: Perceived ease of use has a significant impact on satisfaction.

H6: Perceived ease of use has a significant impact on perceived usefulness.

2.3 System Quality

As Chang et al. (2015) stated, system quality describes a system's adaptability, accessibility, navigation, and dependability. DeLone and McLean (2003) thought the IS success model could be employed to demonstrate how

system quality impacts customer satisfaction. Moreover, previous work has proven that system quality impacts user satisfaction (Chen, 2010); it is based on the requirements of those who use the system, as noted throughout the systems' analysis or development. Hong et al. (2006) investigation from asserts that SYQ has been considered the basis for readoption intents and actions, which is a measurement for information processing systems overall. Following a purchase made via the Internet, the customer's satisfaction is significantly impacted due to appearance, technological suitability, reaction speed, support, security, and protection (Ahn et al., 2007).

System quality has been defined in online education by its suitability for the purpose it was designed for and customers' requirements (Freeze et al., 2019). Marjanovic et al. (2016), respectively, published literature that suggested a link between system quality and application. Based on Roca and Gagne (2008) investigation, SYQ might boost users' contentment and motivation. Ahn et al. (2007) argued that system quality, which comprises factors like design, technological adequacy, responsiveness, instruction, safeguarding, and data security, has an important impact on customer satisfaction with purchasing online. Zhang et al. (2020) argue that system attributes, specifically those that affect how individuals interact with a device, enormously benefit performance expectations. Individuals' motivational incentives for using the SYQ may increase if they think it is outstanding.

H3: System quality has a significant impact on satisfaction.

2.4 Information Quality

In the opinion of Yakubu and Dasuki, who established this claim in 2018, IQ is perceived as a feature that system outputs ought to have and is assessed in terms of their authenticity, availability, completeness, accuracy, continuity, and responsiveness. Seta et al. (2018) suggested that the precision of the data could subsequently be assessed according to the back-feed made. The level of the entire material that the system supplies is typically called information quality, just as Zhang et al. (2020). The material of an internet-based learning system should be original, comprehensive, relevant, intelligible, reliable, etc. Typically, IQ has been employed to assess system efficiency, including the caliber of the system's output, mostly through reporting (Freeze et al., 2019).

Information quality assumptions affect attitudes toward system satisfaction (Wixom & Todd, 2005). Information quality encompassed efficiency, relevance, suitability, and readability of report contents, while form involved the quality of the structure, timeliness of presentations, reporting style, and data ordering (Chang, 2013). The worth of the information supplied to learners by the online education

system is an indicator of the information's caliber. Information quality is affected by completeness, timeliness, correctness, practicability, and coherence of information transmission (Aparicio et al., 2017). Information quality, usually considered a vital antecedent, favored behavioral intention when deploying an online learning system (Seta et al., 2018). Information quality reveals issues in online education content. Enabling learners to access instructional resources is the primary aim of a course website (Freeze et al., 2019).

H4: Information quality has a significant impact on satisfaction.

2.5 Service Quality

According to Mtebe and Raphael (2018) investigation, service quality illustrates a provider's capabilities of providing buyers with the service they have been offered. In the opinion of Yakubu and Dasuki (2018), adaptability, reliability, commitment, and even comprehension are the main characteristics affecting the quality of a service. Highly efficient service support must exist in a system for online learning to supply service quality, which may be evaluated by features including responsiveness, empathy, trust, and security (DeLone & McLean, 2003). Service quality can be assessed by both technological qualities, representing the services supplied, and functional elements, which demonstrate the method by which the services are supplied (Gronroos, 1984).

The supporting elements' flexibility, comprehension, dependability, and security are vital for an online educational system's service quality. This effect of service quality on equipment utilization and user satisfaction has been verified by conducting investigations. Pitt et al. (1995) revealed that, in order to improve the quality of subsequent connections, service quality must be assessed against satisfaction; Machado da Silva et al. (2014) and Aparicio et al. (2017) stated that, in this context, service quality possesses a beneficial effect on both the use of online education and satisfaction among learners. SEQ must enormously affect consumer satisfaction, claim Liu et al. (2010). Additionally, as Roca and Gagne (2008) revealed, SEQ has been proven to have an important beneficial impact on satisfaction in the context of online education. The amount of service offered through the whole system, the company, and the department is evaluated. It might be rated according to how dependable, responsive, tangible, and understandable it appears.

H5: Service quality has a significant impact on satisfaction.

2.6 Satisfaction

As reported by Lin and Wang (2012), client satisfaction is the degree to which an individual is satisfied with the

system's caliber, performance, and appearance. User satisfaction is a psychological state of attitude experienced by someone who regularly uses a particular software application on a computer. According to the description provided by Mtebe and Raphael (2018), it consists of gathering views and emotions on the system from users who use it. User satisfaction indicates how well a user-information system connects with its users. Moreover, it may be identified as the extent to which learners feel the information system fulfills their expectations (Freeze et al., 2019). Application to or satisfaction with an ELS is not necessarily associated, owing to the strength and possible discrepancy in distance learning (Freeze et al., 2019). The amount to which students are satisfied with the tool, the material, and the service can be referred to as satisfaction. According to Machado da Silva et al. (2014), users' perceptions of and attitudes toward the environment should symbolize their satisfaction.

Customer satisfaction with a product or service is essential when considering whether employment will remain (Thong et al., 2006). It is based on personal experiences, which implies that positive and negative events can affect satisfaction. Customers' views of satisfaction are critical when considering whether to stay with a system since they substantially impact how dependable the system seems to be (Mtebe & Raphael, 2018). Total satisfaction is described as an affective state that is an emotional response to the entire Web site search procedure. This concept emphasizes the procedural assessment involved with the act of purchasing more than the goal-oriented strategy, which demonstrates the buyer's psychological state as a result of the consuming process (McKinney et al., 2002). Client satisfaction with the transaction process might be crucial for a business to remain operational and draw fresh customers (Huang, 2008). DeLone and McLean (2003) assessed user satisfaction articles for their analysis. They agreed that user satisfaction was a crucial barometer of IS success.

H7: Satisfaction has a significant impact on continuance intention.

2.7 Continued Intention

A continuance intention is the readiness to use a data system (Wu & Chen, 2017). A participant's continuation intention is to continue employing an offering after recognizing it (Cheng, 2014). The motivation to keep deploying a service after attempting to accept it is identified as a continuous intention, according to Roca and Gagne (2008). Future aspirations of learners and potential MOOC adoption (Wu & Chen, 2017). In the words of Lin et al. (2005), a plan to continue using Web Portal Context is considered a continuance intention.

The expectation-confirmation model states that satisfaction and perceived utility (PU) are two important factors driving ongoing intention. Previous studies have shown a link between consumers' happiness and intention to continue using a certain IS (Lee, 2010). The recommended ECM was predicated on the assumption that system usage satisfaction and perceived utility would influence a system's desire to continue being utilized (Bhattacharjee, 2001). According to a report by Basak and Calisir (2015), psychological incentives might arise when an individual starts using an information system and can affect a person's decision to stay employing the system. Given this, if MOOC use is valued, an individual is likely inclined to use it in the future.

3. Research Methods and Materials

3.1 Research Framework

The conceptual framework of this research was developed by examining the theoretical underpinnings of previous studies. It was built upon the foundations of four theoretical frameworks, namely the Technology Acceptance Model (TAM) and Information System Success Model (ISSM). Previous research conducted by Chang (2013) established a relationship between system quality, information quality, service quality, and satisfaction. Kashive and Powale (2021) also demonstrated the interconnectedness of perceived usefulness, perceived ease of use, and satisfaction. Additionally, Cheng (2012) revealed a link between perceived usefulness and ease of use. Based on these structures, the conceptual framework depicted in Figure 1 was established.

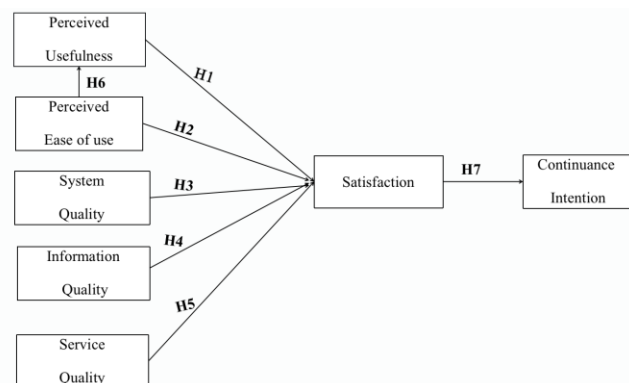


Figure 1: Conceptual Framework

H1: Perceived usefulness has a significant impact on satisfaction.

H2: Perceived ease of use has a significant impact on satisfaction.

H3: System quality has a significant impact on satisfaction.

H4: Information quality has a significant impact on satisfaction.

H5: Service quality has a significant impact on satisfaction.

H6: Perceived ease of use has a significant impact on perceived usefulness.

H7: Satisfaction has a significant impact on continuance intention.

3.2 Research Methodology

The approach employed to estimate the variables determining the postgraduate students at Chinese XiHua University having majors in accounting, interpreting, Chinese language and literature, political and ideological education, and persistent employing purpose for learning via the internet has been outlined in this investigation. The approach of quantitative surveys was deployed in this study since it was the best way to get the responses of individuals and discover how they feel and their reactions. Data analysis involved evaluating model fit, reliability, and validity through Confirmatory Factor Analysis (CFA) and Structural Equation Models (SEM).

To gauge the questionnaire's reliability and validity, this process involved a comprehensive assessment that encompassed both Item-Objective Congruence (IOC) scrutiny and a pilot test. In the IOC analysis, a panel of three experts evaluated each scale item, all of which achieved a rating of 0.6 or higher. Additionally, a pilot test was conducted with a cohort of 50 participants, and we calculated reliability using the Cronbach alpha coefficient. The results affirmed the robust internal consistency of all questionnaire items, with a reliability score surpassing 0.7, as reported in Sarmento and Costa (2016).

3.3 Population and Sample Size

The investigation's sample group comprises graduates from XiHua University with majors in accounting, Chinese language and literature, political and ideological education, and translation. A basic grading scale was set up by Comrey and Lee (1992): 100 symbolizes a poor grade, 200 is passing, 300 is equitable, and 500 is superb. In agreement with screening and quota sampling, five hundred learners were ultimately chosen from a total enrolment of 514 learners.

3.4 Sampling Technique

The sampling approach comprises judgmental, quota and convenience sampling. The researcher uses judgmental sampling to select 514 postgraduate learners at Xihua University in the Chinese Sichuan Province who were involved in web-based instruction for a minimum of 30 days beforehand. The last sample stage, five hundred participants, was selected through quota selection from the four sampling units, as demonstrated in Table 1. Online questionnaire was use as a tool per convenience sampling. 497of the responses submitted were taken to be valid when they were all collected, while three were considered invalid.

Table 1: Sample Units and Sample Size

Educational Background	Population Size	Proportional Sample Size
Ideological and Political Education	160	156
Chinese language and Literature	139	135
Accounting	146	142
Translation	69	67
Total	514	500

Source: Constructed by author

4. Results and Discussion

4.1 Demographic Information

Table 2 indicates all 497 respondents' data on demographics in full. In terms of participants, men who participated comprised 46.28%, and female responses comprised 53.72%. The fields of study for postgraduate learners are various, with 25.75% focusing on Chinese language and literature, 25.56% on ideological and political education, 28.17% on accounting, and 20.52% on translation. 61.97% of those who participated were in the first year of study, 25.55% were in the 2nd year of postgraduate education, and 12.48% were in their last academic year due to their scholastic years.

Table 2: Demographic Profile

Demographic and General Data (N=497)		Frequency	Percentage
Gender	Male	230	46.28%
	Female	267	53.72%
Subjects	Ideological and Political Education	127	25.56%
	Chinese language and Literature	128	25.75%
	Accounting	140	28.17%
	Translation	102	20.52%
Academic Year	1st-year	308	61.97%
	2nd-year	127	25.55%
	3rd-year	62	12.48%

Source: Constructed by author

4.2 Confirmatory Factor Analysis (CFA)

CFA is frequently used in mathematical modeling for evaluating the anticipated interactions among numerous factors (Hurley et al., 1997). Contrary to traditional exploratory factor evaluation, which places weak pre-constraints on that model's structure under consideration, CFA demanded that the analyzing study participants define the exact number of factors and the load patterns for every

variable evaluated on the base grouping of components.

As per the guidelines outlined by Fornell and Larcker (1981), factor loadings above 0.5 and P-values below 0.05 were taken into account. Table 3 reveals structural reliability values that comfortably exceed the 0.7 threshold, while the extracted mean variance surpasses 0.4. These results affirm robust internal consistency across all questionnaire items, as further corroborated by a reliability score surpassing 0.7 (Sarmiento & Costa, 2016). Therefore, all estimates within this study demonstrate statistical significance.

Table 3: Confirmatory Factor Analysis Result, Composite Reliability (CR) and Average Variance Extracted (AVE)

Variables	Source of Questionnaire (Measurement Indicator)	No. of Item	Cronbach's Alpha	Factors Loading	CR	AVE
Perceived Usefulness (PU)	Abbas (2016)	4	0.825	0.741-0.863	0.877	0.642
Perceived Ease of Use (PEOU)	Abbas (2016)	4	0.915	0.713-0.846	0.860	0.608
System Quality (SQ)	Cheng (2014)	4	0.848	0.731-0.802	0.853	0.593
Information Quality (IQ)	Chang (2013)	6	0.912	0.747-0.830	0.908	0.623
Service Quality (SQ)	Cheng (2014)	3	0.880	0.814-0.833	0.864	0.680
Satisfaction SAT)	Cheng (2014)	4	0.866	0.694-0.862	0.863	0.613
Continuance Intention (CI)	Cheng (2014)	4	0.910	0.719-0.817	0.878	0.645

The pertinent thresholds for the incremental fit measures, such as CFI, NFI, and TLI, and the absolute fit indicators, like CMIN/DF, GFI, AGFI, and RMSEA, are all presented in Table 4 and match the requirements. Since then, the CFA exams' goodness of fit metrics has all been thoroughly reliable.

Table 4: Goodness of Fit for Measurement Model

Fit Index	Acceptable Criteria	Statistical Values
CMIN/DF	<3 (Hair et al., 2010)	1.691
GFI	≥ 0.85 (Sica & Ghisi, 2007)	0.926
AGFI	≥ 0.80 (Sica & Ghisi, 2007)	0.909
RMSEA	<0.08 (Pedroso et al., 2016)	0.037
CFI	≥ 0.90 (Hair et al., 2010)	0.971
NFI	≥ 0.80 (Wu & Wang, 2006)	0.932
TLI	≥ 0.90 (Hair et al., 2010)	0.967
Model Summary		In harmony with empirical data

Remark: CMIN/DF = The ratio of the chi-square value to degree of freedom, GFI = Goodness-of-fit index, AGFI = Adjusted goodness-of-fit index, RMSEA = Root mean square error of approximation, NFI = Normed fit index, CFI = Comparative fit index and TLI = Tucker-Lewis index.

Table 5 provides the results of the evaluation and portrayal of the discriminant validity. None of the connections through a pair of latent variables appeared more than 0.80, with the diagonally stated number being the AVE square root of the AVE (Liu et al., 2020; Schmitt & Stults, 1986). The discriminant validity was thus established via these measurements.

Table 5: Discriminant Validity

	PU	PEOU	SYQ	IQ	SEQ	SAT	CI
PU	0.801						
PEOU	0.374	0.780					
SYQ	0.498	0.371	0.770				
IQ	0.408	0.463	0.461	0.789			
SEQ	0.446	0.389	0.500	0.451	0.825		
SAT	0.441	0.487	0.484	0.550	0.473	0.783	
CI	0.378	0.349	0.422	0.499	0.416	0.484	0.803

Note: The diagonally listed value is the AVE square roots of the variables

Source: Created by the author.

4.3 Structural Equation Model (SEM)

The CFA assessment has been followed by the structural equation model (SEM) confirmation in the present investigation. The SEM technique is implemented in evaluating specific combinations of linearity coefficients to determine the likelihood that the proposed causality explanation fits. Investigators can assess the preciseness of a conceptual model for the connections in the data when implementing structural equation modeling (SEM) through various fit indices (Brosseau-Liard & Savalei, 2014). Either a model of structure or a measurement model can be found in structural equation models (Khine, 2013). Table 7 displays that the sum of the values of CMIN/DF, GFI, AGFI, CFI, NFI, TLI, and RMSEA remained all over allowable limits after being corrected using AMOS version 24. The observations suggest that the SEM's goodness of fit has been verified.

Table 6: Goodness of Fit for Structural Model

Index	Acceptable	Statistical Values
CMIN/DF	<3 (Hair et al., 2010)	2.756
GFI	≥ 0.85 (Sica & Ghisi, 2007)	0.863
AGFI	≥ 0.80 (Sica & Ghisi, 2007)	0.832
RMSEA	<0.08 (Pedroso et al., 2016)	0.060
CFI	≥ 0.90 (Hair et al., 2010)	0.926
NFI	≥ 0.80 (Wu & Wang, 2006)	0.889
TLI	≥ 0.90 (Hair et al., 2010)	0.916
Model Summary		In harmony with Empirical data

Remark: CMIN/DF = The ratio of the chi-square value to degree of freedom, GFI = Goodness-of-fit index, AGFI = Adjusted goodness-of-fit index, RMSEA = Root mean square error of approximation, NFI = Normed fit index, CFI = Comparative fit index and TLI = Tucker-Lewis index.

4.4 Research Hypothesis Testing Result

Table 7 displays the outcomes of each estimation. It is observed that satisfaction exhibits the highest impact on continuance intention, as evidenced by the standardized path coefficient (β).

Table 7: Hypothesis Results of the Structural Equation Modeling

Hypothesis	(β)	t-Value	Result
H1: PU→SAT	0.193	4.183***	Supported
H2: PEOU→SAT	0.278	4.484***	Supported
H3: SYQ→SAT	0.208	4.772***	Supported
H4: IQ→SAT	0.401	8.589***	Supported
H5: SEQ→SAT	0.220	5.105***	Supported
H6: PEOU→PU	0.362	7.483***	Supported
H7: SAT→CI	0.701	7.573***	Supported

Note: *** $p < 0.001$

Source: Created by the author

The connection between perceived usefulness and satisfaction in **H1** is substantial, as evidenced by the research outcomes in Table 8, and its standard coefficient value is 0.193, indicating the least effect point in this academic study. In the words of Lee (2010), the perceived usefulness of the online education platform must have a beneficial effect on user satisfaction with the system. The perceived usefulness of a platform for online instruction is a key factor in assessing user satisfaction with a platform (Cheng, 2019).

Having a standardized path coefficient of 0.278 in **H2**, the investigation suggested that perceived ease of use constitutes one of the most important components of satisfaction. In the opinion of Islam (2011), PEOU possesses an immediate effect on SAT while utilizing mobile broadband technology to further educational objectives in tertiary education. Meanwhile, current studies demonstrated that PEOU quantitatively affects consumer satisfaction with mobile technology (Lee & Park, 2008).

The results of the observable statistics for **H3** verified the premise that system quality impacted satisfaction significantly, with the standard coefficient value of 0.208 representing the most significant impact in this quantification analysis. According to previous studies conducted by Ho et al. (2010) and Rai et al. (2002), system quality positively affects people's satisfaction. According to research, system quality benefits applications and satisfaction (Aparicio et al., 2017).

Furthermore, **H4** suggested that, with a typical coefficient value of 0.401, the quality of the information exhibited a substantial effect on satisfaction. Multiple studies demonstrate a beneficial relationship between information quality, application, and satisfaction (Urbach et al., 2010). The information quality additionally plays an important influence on satisfaction and continued utilization intention (Ranganathan & Ganapathy, 2002).

Through a standard coefficient value of 0.220, **H5** further revealed that service quality significantly affected satisfaction in the current study. Providing customers access to service information might boost their satisfaction and enable online retailers to maintain their purchaser's pleasure, as Park and Kim's 2003 studies demonstrated. In the words of Liu et al. (2010), service quality significantly impacts customer satisfaction.

With a defined path parameter threshold of 0.362 for this structural method, **H6** proved that its perceived usefulness is greatly affected by its ease of use. PEOU positively enormously impacts perceived usefulness (Sharma et al., 2022). Renear and Salo (2003) stated that perceived ease of use could have impacted increased perceived usefulness.

The standard coefficient of the active influence, which has the greatest effect in this qualitative inquiry, has a statistical value of 0.701, demonstrating that **H7** has ultimately decided that satisfaction is strongly associated with continuance intention. Satisfaction, as stated by Bhattacharjee, remained an essential variable for identifying a sustained desire to utilize payments via the Internet in 2001. When someone remains satisfied with the whole application experience, they are inclined to stay with an online learning system (Chang, 2013).

5. Conclusion and Recommendation

5.1 Conclusion and Discussion

The aim of this research appeared to figure out the variables impacting postgraduate students majoring in ideological and political education, Chinese literary and language studies, the accounting profession, and translation's satisfaction with and motivation to carry on their education via the internet at an intended university in the Chengdu

geographical area of China. The seven assumptions were put forward via the theoretical structure to back up the connections involving perceived usefulness, perceived ease of use, system quality, information quality, service quality, satisfaction, and continuance intention. Five hundred postgraduate students with enough experience in studying online receive a list of items as part of the research strategy. Mathematical calculations confirmed the conceptual framework's reliability and validity through confirmatory factor analysis (CFA). Further, the Structural Equation Model (SEM) was implemented to validate the key factors affecting satisfaction and the intention to continue, and the outcomes revealed that all of the assumptions were validated.

The outcomes of the present investigation suggest that satisfaction has the most substantial immediate influence on willingness for continuation. The quality of the information triggered the most dramatic impact on satisfaction. Further, with a lower standardized path coefficient, perceived usefulness, ease of use, and system quality substantially impacted satisfaction. In addition, in this statistical investigation, perceived ease of use indicated a substantial active influence impact on perceived usefulness, as indicated through the TAM model.

5.2 Recommendation

The investigation's discoveries will help gain a greater awareness of the main variables that impact the acceptance and application of internet-based instruction in higher education institutions. By offering data on factors that promote more favorable adoption of online education systems by postgraduate students, this study will assist HEIs and others in developing online education systems. In light of this, the investigation proposes that HEIs concentrate more heavily on strengthening the quality of the information available through the web-based educational environment to learners and designing student-centered programs that take into account students' requirements for learning, types, and knowledge the amount to maximize the utilization benefits of the system.

System quality contributed substantially to satisfaction, which motivated students to persist in utilizing the system. According to the research results (Pituch & Lee, 2006; Roca et al., 2006), students who are picky about the system's quality may mostly discover the online educational system to be more beneficial, verifiable, and appealing because of its functionality. These functionalities involve flexibility of control, adaptability, connectivity, and responsiveness. In order to increase the adoption of the online learning system, HEIs are encouraged to be cautious regarding the compatibility between system characteristics and students' requests and establish interactive methods to satisfy these kinds of requirements swiftly. To further enhance the

benefits and pleasures of system usage, system manufacturers ought to raise the system quality of the online education system. This will foster learners' satisfaction with and desire to continue employing the system by encouraging their initial expectations of the system.

In this study, five latent variables influence students' satisfaction, with information quality constituting the most significant. While using online educational platforms, users may place a higher value on information quality than system and service quality. This insight will help educators and system providers offer a wide variety of excellent, thorough, and substantial information to define users' needs concerning online resources. Due to the technical requirements of online instruction, educators should also give a sizable volume of instructional material on the network educational system from the standpoint of perceived usefulness. Beyond class hours, the online learning environment may involve video tutorials. This might help resolve the students' learning difficulties and let them realize that online education can enhance efficient learning.

5.3 Limitation and Further Study

The investigation has been restricted by its selection of just seven relevant variables that might impact continuation intention directly or indirectly. Moreover, there may exist certain constraints on the collection of statistics. A total of four majors at a single university had been selected for the research following its objectives, and little data was obtained. Therefore, the findings and information gathered from this study need to be verified in additional research because they may have limitations.

References

- Abbas, T. (2016). Social Factors Affecting Students' Acceptance of E-learning Environments in Developing and Developed Countries: A Structural Equation Modeling Approach. *Journal of Hospitality & Tourism Technology*, 7(2), 200-212. <https://doi.org/10.1108/jhtt-11-2015-0042>
- Agudo-Peregrina, Á. F., Hernandez-Garcia, Á., & Pascual-Miguel, F. J. (2014). Behavioral Intention, Use Behavior, and the Acceptance of Electronic Learning Systems: Differences between Higher Education and Lifelong Learning. *Computers in Human Behavior*, 34, 301-314. <https://doi.org/10.1016/j.chb.2013.10.035>
- Ahn, T., Ryu, S., & Han, I. (2007). The Impact of the Online and Offline Features on the User Acceptance of Internet shopping malls. *Electronic Commerce Research & Applications*, 3(4), 405-420. <https://doi.org/10.1016/j.elerap.2004.05.001>
- Aparicio, M., Bacao, F., & Oliveira, T. (2017). Grit in the Path to E-learning Success. *Computers in Human Behavior*, 66(2), 388-399. <https://doi.org/10.1016/j.chb.2016.10.009>

- Basak, E., & Calisir, F. (2015). An Empirical Study on Factors Affecting Continuance Intention of Using Facebook. *Computers in Human Behavior*, 48, 181-189. <https://doi.org/10.1016/j.chb.2015.01.055>
- Bhattacharjee, A. (2001). Understanding Information Systems Continuance: An Expectation-confirmation Model. *MIS Quarterly*, 25(3), 351-370. <https://doi.org/10.2307/3250921>
- Brousseau-Liard, P. E., & Savalei, V. (2014). Adjusting incremental fit indices for nonnormality. *Multivariate Behavioral Research*, 49(5), 460-470. <https://doi.org/10.1080/00273171.2014.933697>
- Chang, A.-M., Aeschbach, D., Duffy, J. F., & Czeisler, C. A. (2015). Evening use of light-emitting eReaders negatively affects sleep, circadian timing, and next-morning alertness. *Pubmed*, 112(4), 1232-1237.
- Chang, C. C. (2013). Exploring the Determinants of E-learning Systems Continuance Intention in Academic Libraries. *Library Management*, 34(1/2), 40-55. <https://doi.org/10.1108/01435121311298261>
- Chang, S., & Tung, F. C. (2008). An Empirical Investigation of Students' Behavioural Intentions to Use the Online Learning Course Websites. *British Journal of Educational Technology*, 39(1), 71-83. <https://doi.org/10.1111/j.1467-8535.2007.00742.x>
- Chen, C. W. (2010). Impact of Quality Antecedents on Taxpayer Satisfaction with Online Tax-filing systems: an empirical study. *Information & Management*, 47, 308-315. <https://doi.org/10.1016/j.im.2010.06.005>
- Cheng, Y. M. (2012). Effects of Quality Antecedents on E-learning Acceptance. *Internet Research*, 22(3), 361-390. <https://doi.org/10.1108/10662241211235699>
- Cheng, Y. M. (2014). Extending the Expectation Confirmation Model with Quality and Flow to Explore Nurses' Continued Blended E-learning Intention. *Information Technology & People*, 27(3), 230-258. <https://doi.org/10.1108/itp-01-2013-0024>
- Cheng, Y. M. (2019). How does Task-technology Fit Influence Cloud-based E-learning Continuance and Impact? *Education & Training*, 61(4), 480-499. <https://doi.org/10.1108/et-09-2018-0203>
- Comrey, A. L., & Lee, H. B. (1992). A First Course in Factor Analysis (1st ed.). Lawrence Erlbaum Associates, Publishers.
- Davis, F. D. (1989). Perceived Usefulness, Perceived Ease of Use, and User Acceptance of Information Technology. *MIS Quarterly*, 13(3), 319-340. <https://doi.org/10.2307/249008>
- DeLone, W. H., & McLean, E. R. (2003). The DeLone and McLean Model of Information Systems Success: A Ten-year Update. *Journal of Management Information Systems/ Spring*, 19(4), 9-30.
- Dishaw, M. T., & Strong, D. M. (1999). Extending the technology acceptance model with task-technology fit constructs. *Information & Management*, 36(1), 9-21. [https://doi.org/10.1016/s0378-7206\(98\)00101-3](https://doi.org/10.1016/s0378-7206(98)00101-3)
- Fornell, C. G., & Larcker, D. F. (1981). Evaluating structural equation models with unobservable variables and measurement error. *Journal of Marketing Research*, 18(1), 39-50. <https://doi.org/10.2307/3151312>
- Freeze, R. D., Alshare, K. A., Lane, P. L., & Wen, H. J. (2019). IS Success Model in E-Learning Context Based on Students' Perceptions. *Journal of Information Systems Education*, 21(2), 173-184.
- Gronroos, C. (1984). A Service Quality Model and Its Marketing Implications. *European Journal of Marketing*, 18(4), 36-44. <https://doi.org/10.1108/eum0000000004784>
- Hair, J. F., Anderson, R. E., Tatham, R. L., & Black, W. C. (2010). *Multivariate Data Analysis* (6th ed.). Prentice Hall.
- Ho, L. A., Kuo, T. H., & Lin, B. (2010). Influence of Online Learning Skills in Cyberspace. *Internet Research*, 20(1), 55-71. <https://doi.org/10.1108/10662241011020833>
- Hong, S.-J., Thong, J., & Tam, K. (2006). Understanding Continued Information Technology Usage Behavior: A Comparison of Three Models in the Context of Mobile Internet. *Decision Support Systems*, 42, 1819-1834. <http://dx.doi.org/10.1016/j.dss.2006.03.009>
- Huang, E. (2008). Use and Gratification in E-consumers. *Internet Research*, 18(4), 405-426. <https://doi.org/10.1108/10662240810897817>
- Huang, Z. P. (2019). *Survey and Analysis on the Influencing Factors of College Students' Willingness to Use Online Education Based on the Research of University in Wuhan* [Doctoral Dissertation], Zhongnan University of Economics and Law.
- Hurley, A., Scandura, T., & Schriesheim, B. (1997). Exploratory and Confirmatory Factor Analysis: Guidelines, Issues, and Alternatives. *Journal of Organizational Behavior*, 18(6), 667-683.
- Islam, A., Magdalena, M., Qian, X., & Chin, H. (2017). Factors Influencing students' satisfaction in Using Wireless Internet in Higher Education Cross-validation of TSM. *The Electronic Library*, 36(1), 2-20. <https://doi.org/10.1108/el-07-2016-0150>
- Islam, A. Y. M. A. (2011). Viability of the Extended Technology Acceptance Model: An Empirical Study. *Journal of Information and Communication Technology*, 1(2), 85-98. <https://doi.org/10.32890/jict.10.2011.8110>
- Jeong, M., & Lambert, C. (2001). Adaptation of An Information Quality Framework to Measure Customers' Behavioral Intentions to Use Lodging Web Sites. *International Journal of Hospitality Management*, 20(2), 129-146. [https://doi.org/10.1016/s0278-4319\(00\)00041-4](https://doi.org/10.1016/s0278-4319(00)00041-4)
- Kashive, N., & Powale, L. (2021). Understanding User Perception Toward Artificial Intelligence (AI) Enabled E-learning. *The International Journal of Information and Learning Technology*, 38(1), 1-19. <https://doi.org/10.1108/ijilt-05-2020-0090>
- Khine, M. S. (2013). *Application of Structural Equation Modeling in Educational Research and Practice* (1st ed.). Sense Publishers.
- Lee, M. C. (2010). Explaining and Predicting Users' Continuance Intention Toward E-learning: An Extension of the Expectation - Confirmation Model. *Computers and Education*, 54(2), 506-516. <https://doi.org/10.1016/j.compedu.2009.09.002>
- Lee, T. M., & Park, C. (2008). Mobile Technology Usage and B2B Market Performance Under Mandatory Adoption. *Industrial Marketing Management*, 37(7), 833-840. <https://doi.org/10.1016/j.indmarman.2008.02.008>

- Lin, C. S., Wu, S., & Tsai, R. J. (2005). Integrating Perceived Playfulness into Expectation-Confirmation Model for Web Portal Context. *Information & Management*, 42(5), 683-693. <https://doi.org/10.1016/j.im.2004.04.003>
- Lin, K. M., Chen, N.-S., & Fang, K. (2011). Understanding E-Learning Continuance Intention: A Negative Critical Incidents Perspective. *Behavior and Information Technology*, 30(1), 77-89. <https://doi.org/10.1080/01449291003752948>
- Lin, W. S., & Wang, C. H. (2012). Antecedences to Continued Intentions of Adopting E-learning System in Blended Learning Instruction: A Contingency Framework Based on Models of Information System Success and Task-technology Fit. *Computers and Education*, 58(1), 88-99. <https://doi.org/10.1016/j.compedu.2011.07.008>
- Liu, C. T., Guo, Y. M., & Lee, C. H. (2010). The Effects of Relationship Quality and Switching Barriers on Customer Loyalty. *International Journal of Information Management*, 31(1), 71-79. <https://doi.org/10.1016/j.ijinfomgt.2010.05.008>
- Liu, J., Li, Q., & Wang, J. (2020). Influencing Factors of Online Office APP Users' Intention Based on UTAUT. *Information Science*, 38(9), 49-68.
- Machado da Silva, F. N., Meireles, F. S., Filenga, D., & Brugnolo Filho, M. (2014). Student Satisfaction Process in Virtual Learning System: Considerations Based in Information and Service Quality from Brazil's Experience. *Turkish Online Journal of Distance Education*, 15(3), 122-142. <https://doi.org/10.17718/tojde.52605>
- Marjanovic, U., Delic, M., & Lalic, B. (2016). Developing a Model to Assess the Success of E-learning Systems: Evidence from A Manufacturing Company in Transitional Economy. *Information Systems and e-Business Management*, 14(2), 253-272. <https://doi.org/10.1007/s10257-015-0282-7>
- McKinney, V., Yoon, K., & Zahedi, F. (2002). The Measurement of Web Customer Satisfaction: An Expectation and Disconfirmation Approach. *Information Systems Research*, 13(3), 296-315. <https://doi.org/10.1287/isre.13.3.296.76>
- Mtebe, J. S., & Raphael, C. (2018). Key Factors in Learners' Satisfaction With the E-learning System at the University of Dar es Salaam, Tanzania. *Australasian Journal of Educational Technology*, 34(4), 107-122. <https://doi.org/10.14742/ajet.2993>
- Naidu, S. (2006). *E-Learning a Guide of Principles, Procedures and Practices* (1st ed.). Commonwealth Educational Media Centre for Asia.
- Park, C. H., & Kim, Y. G. (2003). Identifying Key Factors Affecting Consumer Purchase Behavior in an Online Shopping Context. *International Journal of Retail & Distribution Management*, 31(1), 16-29. <https://doi.org/10.1108/09590550310457818>
- Pedroso, R., Zanetello, L., Guimarães, L., Pettenon, M., Gonçalves, V., Scherer, J., Kessler, F., & Pechansky, F. (2016). Confirmatory factor analysis (CFA) of the Crack Use Relapse Scale (CURS). *Archives of Clinical Psychiatry (São Paulo)*, 43(3), 37-40. <https://doi.org/10.1590/0101-60830000000081>
- Pitt, L. F., Watson, R. T., & Kavan, C. B. (1995). Service Quality: A Measure of Information Systems Effectiveness. *IS Service Quarterly--Measurement*, 19(2), 173-187. <https://doi.org/10.2307/249687>
- Pituch, K. A., & Lee, Y. K. (2006). The Influence of System Characteristics on E-learning Use. *Computers & Education*, 47(2), 222-244. <https://doi.org/10.1016/j.compedu.2004.10.007>
- Rai, A., Lang, S. S., & Welker, R. B. (2002). Assessing the Validity of IS Success Models: An Empirical Test and Theoretical Analysis. *Information Systems Research*, 13(1), 50-69. <https://doi.org/10.1287/isre.13.1.50.96>
- Ranganathan, C., & Ganapathy, S. (2002). Key Dimensions of Business-to-consumer Web Sites. *Information & Management*, 39(6), 457-465. [https://doi.org/10.1016/s0378-7206\(01\)00112-4](https://doi.org/10.1016/s0378-7206(01)00112-4)
- Renear, A., & Salo, D. (2003). Electronic Books and the Open E-book Publication Structure. *The Columbia Guide to Digital Publishing*, 1(2), 455-520.
- Roca, J. C., Chiu, C. M., & Martinez, F. J. (2006). Understanding E-learning Continuance Intention: An Extension of the Technology Acceptance Model. *International Journal of Human-Computer Studies*, 64(8), 683-696.
- Roca, J. C., & Gagne, M. (2008). Understanding E-learning Continuance Intention in the Workplace: a Self-determination. *Theory Perspective. Computers in Human Behavior*, 24(4), 1585-1604.
- Saadé, R., & Bahli, B. (2005). The Impact of Cognitive Absorption on Perceived Usefulness and Perceived Ease of Use in Online Learning: An Extension of the Technology Acceptance Model. *Information and Management*, 42(2), 317-327. <https://doi.org/10.1016/j.im.2003.12.013>
- Sarmiento, R., & Costa, V. (2016). *Comparative Approaches to Using R and Python for Statistical Data Analysis* (1st ed.). IGI Global Press
- Schmitt, N., & Stults, D. M. (1986). Methodology review: Analysis of Multitrait-Multimethod Matrices. *Applied Psychological Measurement*, 10(1), 1-22. <https://doi.org/10.1177/014662168601000101>
- Seta, H. B., Wati, T., Muliawati, A., & Hidayanto, A. N. (2018). E-learning Success Model: An Extension of DeLone and McLean IS' Success Model. *Indonesian Journal of Electrical Engineering and Informatics*, 6(3), 281-291. <https://doi.org/10.11591/ijeei.v6i3.505>
- Sharma, S., Vaidya, A., & Deepika, K. (2022). Effectiveness and Satisfaction of Technology-mediated Learning During Global Crisis: Understanding the Role of Pre-developed Videos. *On the Horizon: The International Journal of Learning Futures*, 30(1), 28-43. <https://doi.org/10.1108/oth-04-2021-0057>
- Sica, C., & Ghisi, M. (2007). The Italian versions of the Beck Anxiety Inventory and the Beck Depression Inventory-II: Psychometric properties and discriminant power (1st ed.). In M. A. Lange (Ed.), *Leading-edge psychological tests and testing research* (pp. 27-50). Nova Science Publishers.
- Teng, K. E. (2014). An analysis of ODL Student Perception and Adoption Behavior Using the Technology Acceptance Model. *International Review of Research in Open and Distance Learning*, 15(6), 275-288. <https://doi.org/10.19173/irrodl.v15i6.1732>

- Thong, J. Y., Hong, S. J., & Tam, K. Y. (2006). The Effects of Post-adoption Beliefs on the Expectation-confirmation Model for Information Technology Continuance. *International Journal of Human-Computer Studies*, 64(9), 799-810. <https://doi.org/10.1016/j.ijhcs.2006.05.001>
- Urbach, N., Smolnik, S., & Riempp, G. (2010). An Empirical Investigation of Employee Portal Success. *Journal of Strategic Information Systems*, 19(3), 184-206. <https://doi.org/10.1016/j.jsis.2010.06.002>
- Vululleh, P. (2018). Determinants of Students' E-learning Acceptance in Developing Countries: An Approach Based on Structural Equation Modeling (SEM). *International Journal of Education and Development Using Information and Communication Technology*, 14(1), 141-151.
- Wixom, B. H., & Todd, P. A. (2005). A Theoretical Integration of User Satisfaction and Technology Acceptance. *Information Systems Research*, 16(1), 85-102. <https://doi.org/10.1287/isre.1050.0042>
- Wu, B., & Chen, X. (2017). Continuance Intention to Use MOOCs: Integrating the Technology Acceptance Model (TAM) and Task Technology Fit (TTF) Model. *Computers in Human Behavior*, 67, 221-232. <https://doi.org/10.1016/j.chb.2016.10.028>
- Wu, J.-H., & Wang, Y.-M. (2006). Measuring KMS success: A respecification of the DeLone and McLean's model. *Information & Management*, 43(6), 728-739. <https://doi.org/10.1016/j.im.2006.05.002>
- Xin, X., Keng, S., & Fiona, F. N. (2020). COVID-19 Pandemic-Online Education in the New Normal and the Next Normal. *Journal of Information Technology Case and Application Research*, 22(3), 175-187.
- Yakubu, M. N., & Dasuki, S. (2018). Assessing eLearning Systems Success in Nigeria: An Application of the DeLone and McLean Information Systems Success Model. *Journal of Information Technology Education: Research*, 17, 183-203. <https://doi.org/10.28945/4077>
- Zhang, S., Zhao, J., & Tan, W. (2008). Extending TAM for Online Learning Systems: An Intrinsic Motivation Perspective. *Tsinghua Science and Technology*, 13(3), 312-317. [https://doi.org/10.1016/s1007-0214\(08\)70050-6](https://doi.org/10.1016/s1007-0214(08)70050-6)
- Zhang, Z., Cao, T., Shu, J., & Liu, H. (2020). Identifying Key Factors Affecting College Students' Adoption of the E-learning System in Mandatory Blended Learning Environments. *Interactive Learning Environments*, 29(1), 1-14. <https://doi.org/10.1080/10494820.2020.1723113>