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Undergraduates' Satisfaction and Continuance Intention Towards Online Education: A Case of Public University in Sichuan, China

Yuli Zeng*

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Abstract

Purpose: This study analyzes the satisfaction and continuance intention to use online education among undergraduates, who are pursuing a degree in accounting, translation, Chinese language and literature, and ideological and political education in Chengdu, China. The conceptual framework consists perceived ease of use, perceived usefulness, system quality, service quality, information quality, satisfaction, and continuance intention. **Research design, data, and methodology:** The study was carried out via a quantitative survey technique to collect the data among 500 undergraduates. Item-objective congruence is used to assess the research instrument's validity, and a pilot study was undertaken to evaluate the internal consistency reliability utilizing the Cronbach alpha coefficient. Furthermore, the sampling approach comprises judgmental, quota and convenience sampling. The data analysis encompassed assessing model fit, reliability, and validity through the utilization of Confirmatory Factor Analysis (CFA) and Structural Equation Models (SEM). **Results:** All hypotheses are supported in this study. Perceived ease of use, perceived usefulness, system quality, service quality, and information quality significantly impact satisfaction. Perceived ease of use has a significant impact on perceived usefulness. Furthermore, satisfaction has a significant impact on continuance intention. **Conclusions:** This research further demonstrated that learners' satisfaction improves if online educational settings present a range of methods for evaluating their progress and if they connect with others.

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

JEL Classification Code: E44, F31, F37, G15

1. Introduction

Learning via the Internet, frequently recognized as online education, is an alternative to enable learners to gain expertise and earn a credential that is recognized worldwide without requiring them to participate in campus-based courses of University of Edinburgh. Learning via the Internet can transform the educational system by enhancing educational options, promoting the number of learners, and encouraging the development of novel instructional strategies (Koehler et al., 2004; Platt et al., 2014), ensuring the learning procedure is more dependable, efficient, and considerably fewer demanding for both instructors and

learners. Around the turn of the century, the Internet was first introduced to China, where it swiftly grew in popularity. Because of the consistent development of the industry competition pattern and the revision of national laws and regulations, learning via the Internet has considerably advanced in 2018. By December 2020, 342 million Chinese internet users, or 34.6% of the population, according to CNNIC's 47th "Statistical Report on Internet Development in China," released in February 2021. It indicates that the demand and population of learners for distance education have mushroomed tremendously in China over the past few years.

China's internet-based schooling industry and user base

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

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have expanded considerably in the last few years. With 989 million users, China has the greatest number of active internet consumers worldwide. Online learning may be categorized into three different groups depending on the device's college students use to complete it: mobile terminals, computer terminals, and television terminals (Huang, 2019). Distance learning platforms are typically grouped into six major groups based on their business operations: B2C (business-to-customer), O2O (online-to-offline), C2C (customer-to-customer), MOOC (massive open online), OCWC (Open et al.), and other classes (open platform, question-and-answer sweepstakes, etc.).

The basic objective of this research is to ascertain undergraduate students' intentions about online education, majoring in ideological and political education, Chinese language and literature, accounting, and translation in China. It may be affected either directly or indirectly by six key factors: perceived usefulness, perceived ease of use, system quality, information quality, service quality, and satisfaction.

2. Literature Review

2.1 Perceived Usefulness

Perceived usefulness is the level at which a person perceives that deploying a certain application system could enhance their capacity to carry out tasks. (Davis, 1989). About Davis, the immanent prospect of implementing a certain domain system to improve a potential consumer's performance or productivity is perceived usefulness. Furthermore, it relates to the fundamental principles of the Technology Acceptance Model (TAM), which provides insight into why consumers adopt a specific form of technology. As per Davis (1989), it provides a gauge of how strongly online students perceive that applying LZM platforms would make it possible for them to do better in their selected programs. As a result, it might impact a person's goal while employing innovative approaches. In addition, the idea of perceived usefulness is characterized as "the amount to which a person views that the internet-based instructional system may contribute to improving his or her academic performance, by assisting the entire school procedure and engagement and also the accomplishment of learning-related duties in particular" within the frame of e-learning, Agudo-Peregrina et al. (2014).

Information might be incorporated into the TAM framework according to its perceived usefulness (Davis, 1989). Perceived usefulness was identified as one of the primary factors, according to TSM, that had a substantial direct impact on students' level of satisfaction while utilizing wireless networking for browsing (Islam et al., 2017). Nevertheless, Huang (2008) reported that PU affected

consumer satisfaction via behavioral attitudes. Further, it was argued that, in contrast to the general trend, learners' attitudes toward electronic learning remained unaffected by perceived usefulness across the COVID-19 period (Sukendro et al., 2020). Hence, this study indicates a hypothesis:

H1: Perceived usefulness has a significant impact on satisfaction.

2.2 Perceived Ease of Use

Perceived ease of use (PEOU) represents the quantity of ease that students possessed while utilizing WiFi to access the internet for educational purposes and research (Islam et al., 2017). Perceived ease of use is a level at which a person finds that applying a specific technology might be simple (Davis, 1989; Liu et al., 2010). As noted by Davis (1989), perceived ease of use, summarized as the extent to which learners' sense while employing this LZM, does not depend on their mental and physical fortitude. Perceived ease of use is "the extent to which the person perceives employing a specific item as demanding no effort" (Garcia-Smith & Effken, 2013). How simple and straightforward a participant considers a certain technology will be to use (Jeong & Lambert, 2001).

Online educational uptake seems primarily motivated by perceived ease of use and perceived usefulness, which has been experimentally explored in Vululleh's (2018) research. Perceived utility and perceived simplicity of use are crucial indicators of the user's behavioral choices to accept instruction based on technology. Furthermore, it was anticipated that perceived ease of use would positively affect stated satisfaction (when using ILM). On the contrary, there was no discernible connection between perceived ease of use and students' opinions of ILM. As noted by Davis (1989), users of information technology (IT)-based systems will possess a favorable mindset and be prone to engage with the system again if they judge the IT platform as beneficial and straightforward to use. In multiple research studies, perceived ease of use has been used as an antecedent of online satisfaction (Jeong & Lambert, 2001). Hence, this study indicates below hypotheses:

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 defined by DeLone and McLean (2003) and Lin (2007), system quality gauges how effectively an IS performs in terms of its accuracy, usability, effectiveness, flexibility, reliability, and speed of response. System quality is affected by technical suitability and information system

processing. The quality of a system is influenced by its capacity, efficiency, and usability (Aparicio et al., 2017). System quality, defined by Zhang et al. in 2020, is related to the technical characteristics of this online educational system, which involve its usability, reliability, flexibility, reaction speed, and additional features. Furthermore, system quality can be employed to gauge the desired qualities of the system for distance education (Lwoga, 2014).

In the context of DeLone and McLean (2003) study from, system quality is related to the system's technological capacities, usability, and accessibility. A positive student experience with online learning is heavily predicated on the system's quality, as Ahn et al. argued in 2004. It is predicted to impact operational qualities, usefulness, and efficacy, among other things, according to McKinney et al. (2002). Following the study presented by Aparicio et al. (2017), system quality positively impacts utilization and satisfaction. According to a concept put forward by DeLone and McLean in 2002, which hypothesizes that it directly and favorably impacts a user's behavior, system quality measures the system's ease of use, utility, reliability, adaptability, information quality, mobility, connection, and value. When an online educational system can supply users with greater value functionalities of high quality and relevant to their learning objectives, learners will have confidence that it can suit their specific requirements. Seddon and Kiew (1996) only verified the DeLone and McLean model of IS Success partially. Nevertheless, the outcomes indicated that system quality did have a beneficial effect on satisfaction. Hence, this study indicates a hypothesis:

H3: System quality has a significant impact on satisfaction.

2.4 Information Quality

Information quality assesses "semantic success; usage, satisfaction; and user impacts" (DeLone & McLean, 2003). Information quality ought to be evaluated according to how much individuals think the information is accurate, precise, timely, and current (Lee et al., 2007). As McKinney et al. (2002) stated, individual perspectives on the information quality provided via an online platform are recognized as markers of information quality. It also entails evaluating the advantages information offers to an individual. Furthermore, the term "information" in this context generally implies data presented to web-based application users (i.e., clients and companies). Superior information systems (IS) are likely to have been regarded as essential since they aid users in making thoughtful choices and doing their jobs better, following Saeed and Abdinnour-Helm (2008). Its validity, dependability, and correctness can measure the quality of the information and how much the customer can comprehend.

Information ought to be necessary for accomplishing the desired results in schooling and learning (Freeze et al.,

2019). The model constructed by Seddon (1997) and DeLone and McLean (2003) indicated a substantial correlation between perceived usefulness with satisfaction and Information quality. These academics (DeLone & McLean, 2003) declare that information quality symbolizes the system's accuracy, reliability, and consistency concerning its components. Kurt (2019) clarified that for an online education system to be efficient, qualities involving information quality, functional requirements, and the ability to impart knowledge swiftly are vital. Following past studies, McKinney et al. (2002) hypothesized that IQ has an optimistic impact on the usage of information systems (IS) and user satisfaction. Machado da Silva et al. (2014) looked at the impacts of information quality (IQ) on students' online education satisfaction and use. Hence, this study indicates a hypothesis:

H4: Information quality has a significant impact on satisfaction.

2.5 Service Quality

According to Gorla et al. (2010), service quality for higher education institutes has been defined as a difference between what students generally anticipate from online instruction and how they perceive its advantages. The capacity to provide personalized information in a secure environment through recognizing user wants and preferences and individualized interaction is referred to as service quality in distance learning, based on Seta et al. (2018). Service quality, as defined by Wang and Wang (2009), depends on how well users are assisted by the information system success model, particularly via training and assistance from the helpdesk (Petter & McLean, 2009). In the words of Stodnick and Rogers (2008), service quality corresponds to the discrepancy between service expectations and learners' reported experiences when investigated from an overview of online education.

DeLone proved in 2003 that the system's quality is impacted by the user's support, just like with any other kind of service (DeLone & McLean, 2003). Service quality is defined by the way users are taken care of by computer technicians or IT helpers (Mtebe & Raphael, 2018). Providing users access to service information may enhance their sense of satisfaction and aid online businesses in keeping clients satisfied, based on Park and Kim's 2003 investigation. User satisfaction as well as perceived value are both greatly affected by service quality, as demonstrated by Petter & McLean's 2009 analysis. When evaluating the quality of the services they get, individuals balance what they are expecting with how they utilize the system (Conrath & Mignen, 1990). In the opinion of Ozkan and Koseler (2009), the extent of aid supplied by instructors and IT specialists is a gauge of the service quality for online context learning.

These products and services offer coaching, a support desk, a hotline, and additional services (Urbach & Müller, 2012). Hence, this study indicates a hypothesis:

H5: Service quality has a significant impact on satisfaction.

2.6 Satisfaction

Satisfaction has been claimed to be feelings and personal mood related to or expanding out of the evaluative assessment of the performance gap (Bhattacharjee, 2001). Bhattacharjee (2001) states that satisfaction in this research corresponds to a person's physical or emotional condition when employing online communications. Kurt (2019) asserted that consumer satisfaction represents a marker for how well actuality (customers' perception) and anticipation (customers' expectations) are in harmony. Furthermore, it would consider how well a customer-facing information system conveys. Satisfaction for consumers demonstrates how much publications, internet pages, and value-added services have pleased individuals, as Ojo (2017) indicated. As stated by DeLone and McLean (2003), customer satisfaction is a particularly essential variable when determining how effective a system is. Oliver declared 1980 that satisfaction is an expression based on the expectation-confirmation theory. In the opinion of Islam et al. (2017), the consumer's degree of satisfaction with an application is gauged by how effective they find it and how willing they are to utilize it afterward.

Bhattacharjee (2001) suggests that perceived usefulness substantially impacts customers' satisfaction and willingness to employ banking services via the Internet. Previous research indicates that users long to maintain the system, and their satisfaction in employing it is significantly influenced by how helpful they perceive an IS to be, as Lin et al. (2005) reported. Ismail et al. (2012) claimed that in an LMS setting, satisfaction is recognized as a crucial indicator of how possible it is that users will continue to use the system for online education in the coming years. Based on Seddon (1997), user satisfaction indicates how students perceive how they interact with other internet users. Wang (2003) investigated on how students regarded online instruction and focused on several primary variables involving the learning group, the material, learner access, and personalization. User satisfaction is a marker of the degree to which learners' expectations are satisfied (Sun et al., 2008). Hence, this study indicates a hypothesis:

H7: Satisfaction has a significant impact on continuance intention.

2.7 Continued Intention

The intention of maintaining the usage of a product after selecting it can be referred to as continuance (Bhattacharjee, 2001). Continuing with the intention of employing online education platforms via university libraries is a level at which an individual is inclined to apply and suggest online educational platforms for other people (including friends or acquaintances) (Chang & King, 2005). Future use of, and intention to use, online learning materials by students (Chang & King, 2005). The continuing intention is the goal of the ECM model.

To enable to discover greater detail regarding how their demands for online education can be confirmed, how this affects future post-adoption expectations (PAE), and how each of these factors impacts their satisfaction and willingness to continue, Lee (2010) developed the expectation-confirmation model (ECM). According to the ECM, individuals could be more satisfied and probably preserve adopting the product if they notice their post-adoption expectations as achieving a greater standard (Bhattacharjee, 2001). Bhattacharjee enhanced the expectation-confirmation theory (ECT) and then implemented the ECM (IS) to understand better consumers' desire to continue employing an information system. The expectation-confirmation theory (ECT), constructed by Oliver in 1980, has found widespread application in marketing to assess customer satisfaction and follow-up behavior.

3. Research Methods and Materials

3.1 Research Framework

The conceptual framework for this study was established after analyzing the theoretical framework of previous research studies. The TAM and ISSM from four theoretical frameworks founded the basis of it. An association among system quality, information quality, service quality, and satisfaction were established by Chang (2013). Moreover, Kashive and Powale (2021) proved how interrelated perceived usefulness, perceived ease of use, and satisfaction are. In addition, Cheng (2012) suggested an association between perceived usefulness and observed straightforwardness of operation. The conceptual framework was developed based on these structures, as illustrated in Figure 1.

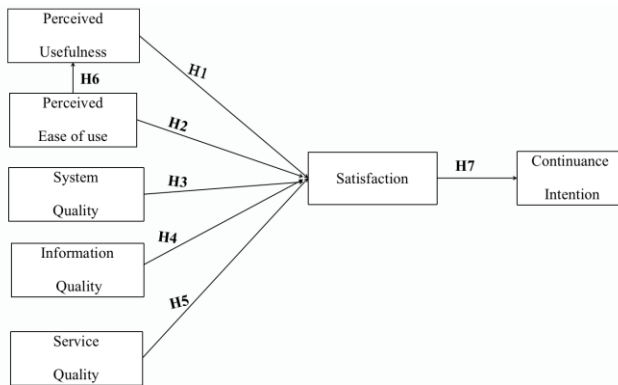


Figure 1: Conceptual Framework

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 variables impacting undergraduates' satisfaction with and willingness to maintain employing the internet for learning in ideological and political education, Chinese language and literature, accounting, and translation at Xihua University of China were analyzed applying the methodology described in the present study. The technique of quantitative surveys has been employed in this study due to it was the most effective technique of gathering data from students and evaluate their psychological reaction. The data analysis encompassed assessing model fit, reliability, and validity through the utilization of 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 Sarmiento and Costa (2016).

3.3 Population and Sample Size

The participants in the present investigation are college students from XiHua University with majors in ideological and political education, Chinese language and literature, accounting, and translation. Hair et al. (2010) proposed a minimum sample size of 500 for models with additional components. Therefore, five hundred learners were selected as the final sample size from a population of 1988, resulting from screening and quota sampling. The sample size is considered to be 500 per appropriate.

3.4 Sampling Technique

The sampling approach comprises judgmental, quota and convenience sampling. The researcher uses judgmental sampling to select a total of 1988 college students from Xihua University of China who fulfilled the screening demands of having at least 30 days of online learning experience in the ideological and political education, Chinese language and literature, accounting, and translation subjects. Subsequently, 500 respondents were picked as the final stage sample by quota selection from four divisions, as demonstrated in Table 1. Online questionnaire was use as a tool per convenience sampling. After survey responses had been gathered, 493 were deemed legitimate, and seven were deemed invalid.

Table 1: Sample Units and Sample Size

Educational Background	Population Size	Proportional Sample Size
Ideological and Political Education	330	83
Chinese language and Literature	632	159
Accounting	588	148
Translation	438	110
Total	1988	500

Source: Constructed by author

4. Results and Discussion

4.1 Demographic Information

Table 2 offers an overview of the entire profile information for 493 interviewees. Of the total respondents, 52.54% were male students, while 47.46% were female. With majors in Ideological and Political Education making up 18.05% of undergraduate students, Chinese language and literature making up 21.10%, Accounting making up 26.77%, and Translation making up 34.08%. 18.86% of participants were first-year students, 33.27% were sophomores, 27.99% were juniors, and 19.88% were seniors, depending on their academic year.

Table 2: Demographic Profile

Demographic and General Data (N=493)		Frequency	Percentage
Gender	Male	259	52.54%
	Female	234	47.46%
Subjects	Ideological and Political Education	89	18.05%
	Chinese language and Literature	104	21.10%
	Accounting	132	26.77%
	Translation	168	34.08%
Academic Year	Freshman	93	18.86%
	Sophomore	164	33.27%
	Junior	138	27.99%
	Senior	98	19.88%

Source: Constructed by author

4.2 Confirmatory Factor Analysis (CFA)

Confirmatory factor analysis (CFA), a statistical technique, is utilized when assessing the factor composition of a data set that can be observed. Through CFA, a scholar may evaluate the presumption that there is a relationship between the variables that have been observed and the latent constructs that underlie them. The researcher employs theoretical knowledge, actual study, or combination to establish an a priori connection pattern. Statistical analysis is the premise (Suhr, 2006).

In accordance with Fornell and Larcker's (1981) recommendations, factor loadings exceeding 0.5 and P-values below 0.05 were considered. The structural reliability values in Table 3 surpassed the threshold of 0.7, and the extracted mean variance exceeded 0.4. These outcomes signify strong internal consistency for all questionnaire items, as supported by a reliability score exceeding 0.7 (Sarmento & Costa, 2016). Consequently, all estimates within this study hold 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	0.851	0.733-0.806	0.852	0.590
Perceived Ease of Use (PEOU)	Abbas (2016)	4	0.895	0.769-0.788	0.859	0.603
System Quality (SQ)	Cheng (2014)	4	0.814	0.766-0.863	0.882	0.653
Information Quality (IQ)	Chang (2013)	6	0.859	0.720-0.781	0.886	0.564
Service Quality (SQ)	Cheng (2014)	3	0.722	0.730-0.788	0.809	0.585
Satisfaction SAT)	Cheng (2014)	4	0.895	0.734-0.821	0.852	0.592
Continuance Intention (CI)	Cheng (2014)	4	0.872	0.750-0.792	0.855	0.596

Furthermore, all applicable thresholds for the absolute fit indicators, such as CMIN/DF, GFI, AGFI, and RMSEA, as well as the incremental fit measures, such as CFI, NFI, and TLI, are laid out in Table 4 and satisfy the criteria. As a result, all of this goodness of fit metrics applied in the CFA were appropriate.

Table 4: Goodness of Fit for Measurement Model

Fit Index	Acceptable Criteria	Statistical Values
CMIN/DF	<3 (Hair et al., 2010)	1.807
GFI	≥ 0.85 (Sica & Ghisi, 2007)	0.919
AGFI	≥ 0.80 (Sica & Ghisi, 2007)	0.902
RMSEA	<0.08 (Pedroso et al., 2016)	0.041
CFI	≥ 0.90 (Hair et al., 2010)	0.959
NFI	≥ 0.80 (Wu & Wang, 2006)	0.913
TLI	≥ 0.90 (Hair et al., 2010)	0.953
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.

The outcome of the investigation into and portrayal of the discriminant validity are outlined in Table 5. The diagonally described quantity is the AVE square root of the variables, and neither of the coefficients linking any latent variables was above 0.80. As it turned out, the discriminant validity was determined by employing such numerical metrics (Fornell & Larcker, 1981).

Table 5: Discriminant Validity

	SEQ	IQ	SYQ	PEOU	PU	SAT	CI
SEQ	0.765						
IQ	0.179	0.751					
SYQ	0.169	0.201	0.808				
PEOU	0.151	0.176	0.190	0.777			
PU	0.201	0.180	0.164	0.308	0.768		
SAT	0.299	0.290	0.302	0.287	0.337	0.769	
CI	0.204	0.190	0.206	0.203	0.197	0.348	0.772

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 structural equation model (SEM) confirmation was performed as anticipated in this study right after the CFA evaluation. Structural equation modeling (SEM), a statistical tool, can be employed to depict the multivariate correlation of the various factors. It is frequently alluded to as a fusion of regression and factor analysis and goes by simultaneous equation modeling and covariance structure analysis (Khine, 2013). Table 6 demonstrates that when adjusted by SPSS AMOS version 24, the aggregate values of CMIN/DF, GFI, AGFI, CFI, NFI, TLI, and RMSEA were above acceptable bounds. As an outcome, the level of fit of the SEM was proven.

Table 6: Goodness of Fit for Structural Model

Index	Acceptable	Statistical Values
CMIN/DF	<3 (Hair et al., 2010)	1.940
GFI	≥ 0.85 (Sica & Ghisi, 2007)	0.911
AGFI	≥ 0.80 (Sica & Ghisi, 2007)	0.895
RMSEA	<0.08 (Pedroso et al., 2016)	0.044
CFI	≥ 0.90 (Hair et al., 2010)	0.951
NFI	≥ 0.80 (Wu & Wang, 2006)	0.904
TLI	≥ 0.90 (Hair et al., 2010)	0.946
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

The consequences of each estimation are presented in Table 7. Satisfaction contains the largest effect on continuance intention with a standardized path coefficient (β).

Table 7: Hypothesis Results of the Structural Equation Modeling

Hypothesis	(β)	t-Value	Result
H1: PU→SAT	0.245	4.531***	Supported
H2: PEOU→SAT	0.252	3.099**	Supported
H3: SYQ→SAT	0.219	4.604***	Supported
H4: IQ→SAT	0.205	4.253***	Supported
H5: SEQ→SAT	0.238	4.647***	Supported
H6: PEOU→PU	0.359	6.683***	Supported
H7: SAT→CI	0.405	7.423***	Supported

Note: *** $p < 0.001$, ** $p < 0.01$

Source: Created by the author

The information provided in Table 7. demonstrates that it may gain further expansions. Together with a standardized

coefficient of 0.245, the pertinent findings from statistical analysis for **H1** established the hypothesis that perceived usefulness substantially affects satisfaction. According to Islam et al. (2017), perceived usefulness comprises one of the primary factors that affect satisfaction. H1 was accordingly supported.

With a standardized path coefficient value of 0.252 in the structured method, **H2** revealed that perceived ease of use is one of the essential elements of satisfaction and possesses the highest effect on how satisfied users are. Kashive and Powale (2021) predicted that satisfaction is greatly affected by perceived ease of use. H2 was accordingly supported.

With a representative standard coefficient value of 0.219 for **H3**, the research results suggested that system quality significantly affected satisfaction. Based on Pour et al. (2021), perceived usefulness directly impacted satisfaction. H3 was, therefore, supported.

H4 demonstrates that information quality considerably affects satisfaction, exhibiting a standard value of 0.205. As demonstrated by Cidral et al. (2018) search into the success of e-learning systems; information quality benefits learners' satisfaction. H4 was consequently supported.

Considering a standard coefficient of 0.238, the Pearson correlation data for **H5** backs up the notable connection between service quality and satisfaction. Pour et al. (2021) state that service quality is an important component for predicting satisfaction. H5 was accordingly supported.

An expected coefficient value of 0.359 resulted from **H6's** statement that perceived usefulness has been affected by perceived ease of use. Perceived usefulness is positively correlated with perceived ease of use, according to study by Zhen (2017). H6 was thereby supported.

Finally, this study established that satisfaction had the largest impact on continuing intention, with an overall coefficient value of 0.405, with the greatest variance in the results obtained. The hypothesis that satisfaction has a favorable impact on continuing intention has been demonstrated by Cheng et al. (2007). **H7** was accordingly supported.

5. Conclusion and Recommendation

5.1 Conclusion and Discussion

This investigation aimed to figure out which variables affect college students majoring in ideological and political education, Chinese language and literature, accounting, and translation who participated in distance-learning courses at a target university in the Chengdu region of China. The conceptual framework formulated the seven hypotheses to verify the processes that react between perceived usefulness, perceived ease of use, system quality, information quality,

service quality, satisfaction, and continuance intention. Five hundred college students with appropriate expertise in online education were provided with the scale items as part of an investigation approach. The conceptual framework's reliability and validity have been confirmed by mathematical modeling by confirmatory factor analysis (CFA). Moreover, the Structural Equation Model (SEM) was employed to test the essential factors that affected satisfaction and motivation to continue, and the outcomes revealed that all of the hypotheses were validated.

The outcome of the current research reveals that satisfaction has a particularly significant direct effect on continuance intention. The most significant factor driving satisfaction was perceived ease of use. Apart from that, with a lower standardized route coefficient, system quality, service quality, information quality, and perceived usefulness all substantially influenced satisfaction. Besides, in this quantitative research, reported ease of use demonstrated a significant positive impact on perceived usefulness, as suggested by the TAM theory.

5.2 Recommendation

The study established primary factors of online education adoption, and this data can be employed to establish guidelines for strengthening the platform's popularity among prospective students. The component in this study that affects students' intentions to continue applying online education is satisfaction. A large number of students select e-learning since they are satisfied with it. The online educational system can enhance satisfaction while encouraging continuous use by establishing the perfect setting for the user depending on their particular demands and motivations. Second, the perceived ease of use most impacts consumer satisfaction. As a result, in the future, the teaching equipment ought to concentrate on successfully decreasing the technical complexity of online instruction for students, which would be embodied in further optimizing the instructional layout of the online educational system along with offering equivalent guide documents as well as manual support, for students to effortlessly comprehend that each of the learning operations of online learning systems is considerably easier, more clearly and even more practical.

The study's applications provide fresh viewpoints for designers and suppliers of online educational platforms. According to this investigation, the quality of information, such as course materials, greatly influences satisfaction. Retrievable, practical, comprehensible, captivating, and trustworthy content is essential. Institutions should offer numerous forms of self-evaluation through examinations, quizzes, and additional approaches to knowledge evaluation. By investing in the course materials, providers would enhance the overall success level. This research further

demonstrated that learners' satisfaction improves if online educational settings present a range of methods for evaluating their progress and if they connect with others. This investigation led us to conclude that satisfaction indicates how well students perceive the system. The satisfaction and continued use of online educational programs will increase if the system is simple to operate and contains good content and functional structure.

5.3 Limitation and Further Study

The only seven latent characteristics that impact continuance intention have been incorporated in the current investigation, which is a drawback. Second, the sample data may be subject to some limitations. A single university had been chosen for the research by the study's aims, and only a limited quantity of data was obtained. The sample data for this study is only partially reliable as a result. More testing in follow-up studies is suggested because of potential limitations in the research data and conclusions.

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. (2004). 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>
- Bhattacharjee, A. (2001). Understanding Information Systems Continuance: An Expectation-confirmation Model. *MIS Quarterly*, 25(3), 351-370. <https://doi.org/10.2307/3250921>
- 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, J. C.-J., & King, W. R. (2005). Measuring the Performance of Information Systems: A Functional Scorecard. *Journal of Management Information Systems*, 22(1), 85-115. <https://doi.org/10.1080/07421222.2003.11045833>

- Cheng, X., Dale, C., & Liu, J. (2007). Understanding the Characteristics of Internet Short Video Sharing: YouTube as a Case Study. *IEEE Transactions on Multimedia*, 15, 1184-1194. <http://dx.doi.org/10.1109/TMM.2013.2265531>
- 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). What Drives Nurses' Blended E-learning Continuance Intention?. *Educational Technology and Society*, 17(4), 203-215.
- Cidral, W. A., Oliveira, T., Felice, M. D., & Aparicio, M. (2018). E-learning Success Determinants: Brazilian Empirical Study. *Computer & Education*, 122, 273-290. <https://doi.org/10.1016/j.compedu.2017.12.001>
- Conrath, D. W., & Mignen, O. P. (1990). What is Being Done to Measure User Satisfaction With EDP/MIS. *Information & Management*, 19(1), 7-19. [https://doi.org/10.1016/0378-7206\(90\)90010-f](https://doi.org/10.1016/0378-7206(90)90010-f)
- 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. (2002). Information Systems Success Revisited. *Proceeding of the 35th Hawaii International Conference on System Sciences*, 1(2), 2966-2976. <https://doi.org/10.1109/hicss.2002.994345>
- 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.
- 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.
- Garcia-Smith, D., & Effken, J. A. (2013). Development and Initial Evaluation of the Clinical Information Systems Success Model (CISSM). *International Journal of Medical Informatics*, 82(6), 539-552. <https://doi.org/10.1016/j.ijmedinf.2013.01.011>
- Gorla, N., Somers, T. M., & Wong, B. (2010). Organizational Impact of System Quality, Information Quality, and Service Quality. *The Journal of Strategic Information Systems*, 19(3), 207-228. <https://doi.org/10.1016/j.jsis.2010.05.001>
- Hair, J. F., Anderson, R. E., Tatham, R. L., & Black, W. C. (2010). *Multivariate Data Analysis* (6th ed.). Prentice Hall.
- 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.
- 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.
- Ismail, N. Z., Razak, M. R., Zakariah, Z., Alias, N., & Abd Aziz, M. N. (2012). E-Learning Continuance Intention Among Higher Learning Institution Students in Malaysia. *Procedia-Social and Behavioral Sciences*, 1(2), 409-415.
- 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.
- Koehler, M. J., Mishra, P., Hershey, K., & Peruski, L. (2004). With A Little Help from Your Students: A New Model for Faculty Development and Online Course Design. *Technol. Teach. Educ.*, 1(2), 25-55.
- Kurt, O. E. (2019). Examining an E-learning System through the Lens of the Information Systems Success Model: Empirical Evidence from Italy. *Education and Information Technologies*, 24(2), 1173-1184. <https://doi.org/10.1007/s10639-018-9821-4>
- Lee, H., Kim, J., & Kim, J. (2007). Determinants of Success for Application Service Provider: An Empirical Test in Small Businesses. *International Journal of Human-Computer Studies*, 65(9), 796-815. <https://doi.org/10.1016/j.ijhcs.2007.04.004>
- 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>
- 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, H. F. (2007). The Role of Online and Offline Features in Sustaining Virtual Communities: An Empirical Study. *Internet Research*, 17(2), 119-138.
- 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.
- Lwoga, E. T. (2014). Critical Success Factors for the Adoption of Web-based Learning Management Systems in Tanzania. *International Journal of Education and Development using Information and Communication Technology*, 10(1), 4-21. <https://doi.org/10.1108/et-02-2014-0014>
- 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>
- 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>
- Ojo, A. I. (2017). Validation of the DeLone and McLean Information Systems Success Model. *Healthcare Informatics Research*, 23(1), 60-66. <https://doi.org/10.4258/hir.2017.23.1.60>
- Oliver, R. L. (1980). A Cognitive Model of the Antecedents and Consequences of Satisfaction Decisions. *Journal of Marketing Research*, 17(4), 460-469. <https://doi.org/10.1177/002224378001700405>
- Ozkan, S., & Koseler, R. (2009). Multi-dimensional Students' Evaluation of E-learning Systems in the Higher Education Context: An Empirical Investigation. *Computers & Education*, 53(4), 1285-1296. <https://doi.org/10.1016/j.compedu.2009.06.011>
- Park, C. H., & Kim, Y. G. (2003). Identifying Key Factors Affecting Consumer Purchase Behaviour 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>
- Petter, S., & McLean, E. R. (2009). A Meta-Analytic Assessment of the DeLone and McLean IS success Model: An Examination of IS Success at the Individual Level. *Information & Management*, 46(3), 159-166. <https://doi.org/10.1016/j.im.2008.12.006>
- Platt, C. A., Raile, A., & Yu, N. (2014). Virtually the Same? Student Perceptions of the Equivalence of Online Classes vs. Face-to-face Classes. *Journal of Online Learning and Teaching*, 2014(10), 489-494.
- Pour, M. J., Mesrabadi, J., & Asarian, M. (2021). Meta-analysis of the DeLone and McLean Models in E-learning Success: The Moderating Role of User Type. *Online Information Review*, 46(3), 590-615. <https://doi.org/10.1108/oir-01-2021-0011>
- Saeed, K. A., & Abdinnour-Helm, S. (2008). Examining the Effects of Information System Characteristics and Perceived Usefulness on Post Adoption Usage of Information Systems. *Information & Management*, 45(6), 376-386. <https://doi.org/10.1016/j.im.2008.06.002>
- Sarmiento, R., & Costa, V. (2016). *Comparative Approaches to Using R and Python for Statistical Data Analysis* (1st ed.). IGI Global Press
- Seddon, P., & Kiew, M. Y. (1996). A Partial Test and Development of the DeLone and McLean Model of IS Success. *Australian Journal of Information Systems*, 4(1), 90-109. <https://doi.org/10.3127/ajis.v4i1.379>
- Seddon, P. B. (1997). A Respecification and Extension of the DeLone and McLean Model of is Success. *Information Systems Research*, 8(3), 240-253. <https://doi.org/10.1287/isre.8.3.240>
- Seta, H. B., Wati, T., Muliawati, A., & Hidayanto, A. N. (2018). E-learning Success Model: An Extention 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>
- 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.
- Stodnick, M., & Rogers, P. (2008). Using SERVQUAL to Measure the Quality of the Classroom Experience. *Decision Science Journal of Innovative Education*, 6(1), 115-133. <https://doi.org/10.1111/j.1540-4609.2007.00162.x>
- Suhr, D. (2006). Exploratory or Confirmatory Factor Analysis? *Statistics and Data Analysis*, 45(4), 243-248.
- Sukendro, S., Habibi, A., Khaeruddin, K., Indrayana, B., Syahrudin, S., Makadada, F. A., & Hakim, H. (2020). Using An Extended Technology Acceptance Model to Understand Students' Use of E-learning During Covid-19. *Heliyon*, 6(11), 1-9. <https://doi.org/10.1016/j.heliyon.2020.e05410>
- Sun, P. C., Tsai, R. J., Finger, G., Chen, Y. Y., & Yeh, D. (2008). What Drives a Successful E-learning? An Empirical Investigation of the Critical Factors Influencing Learner Satisfaction. *Computers and Education*, 50(4), 1183-1202. <https://doi.org/10.1016/j.compedu.2006.11.007>
- Urbach, N., & Müller, B. (2012). *The Updated DeLone and McLean Model of Information Systems Success* (1st ed.). Information Systems Theory.
- 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.
- Wang, W. T., & Wang, C. C. (2009). An Empirical Study of Instructor Adoption of Webbased Learning Systems. *Computers & Education*, 53(3), 761-774. <https://doi.org/10.1016/j.compedu.2009.02.021>
- Wang, Y. S. (2003). Assessment of Learner Satisfaction with Asynchronous Electronic Learning Systems. *Information and Management*, 41(1), 75-86. [https://doi.org/10.1016/s0378-7206\(03\)00028-4](https://doi.org/10.1016/s0378-7206(03)00028-4)
- 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>
- 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>
- Zhen, S. (2017). Examining the Impact Mechanism of Social Psychological Motivations on Individuals' Continuance Intention of MOOCs The Moderating Effect of Gender. *Internet Research*, 28(1), 232-250.