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Measuring Satisfaction and Continuance Intention of Undergraduates towards E-Learning in Chengdu, China

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Abstract

Purpose: This study evaluates the factors significantly influencing e-learning satisfaction and continuance intention among undergraduate dance choreography students at three private universities in Chengdu, China. The present study investigates the impact of confirmation, system quality, service quality, perceived usefulness, satisfaction, and information quality on students' satisfaction and continuance intention towards e-learning. **Research design, data, and methodology:** The researcher used a quantitative approach to collect the data by distribuing an online questionnaire. The target population are 492 undergraduates majoring in dance choreography from three target universities. The sampling techniques involve purposive, quota and conveneince sampling. The relationships between the study variables were determined through factor analysis (CFA) and structural equation modeling (SEM). **Results:** The results of data analysis showed that confirmation, system quality, service quality, perceived usefulness, and information quality significantly impact satisfaction. It also indicated that perceived usefulness exerts the greatest impact on satisfaction. Futhermore, perceived usefulness and satisfaction significantly impact continuance intention. **Conclusions:** To ensure students' continuance intention and sustained use of e-learning, university administrators, teaching staff, and e-learning developers should focus on the development on the quality and ease of use of e-learning system to enhance the learning efficiency and performance of students.

Keywords : E-Learning, Perceived Usefulness, Satisfaction, Information Quality, Continuance Intention

JEL Classification Code: E44, F31, F37, G15

1. Introduction

E-learning is gaining popularity in higher education, driven by the increasing funding and enrollment of universities (Liaw, 2008; Pituch & Lee, 2006). With more individuals accessing online education at Internet-based institutions, e-learning has emerged as one of today's information society's most promising yet challenging aspects (Rosenberg, 2000). To enhance the learning experience, e-learning leverages web technologies to strategize, deliver, curate, administer, and expand education beyond geographical boundaries (Kulikowski et al., 2021). E-learning transforms from a teacher-centric approach to a student-centered one that prioritizes the active participation of learners in the course (Havik & Westergård, 2020). The pedagogical process is enriched by e-learning, revolutionizing how knowledge is imparted to students.

Fueled by a vast market, various policies, and capital, e-learning in China has experienced rapid growth in user base, enterprise numbers, infrastructure, and industrial system development. It has become an effective supplement to traditional education. The government has also vigorously promoted the deployment of MOOCs in China's top universities. The introduction of these material investments and guidelines shows the determination of the relevant authorities to develop e-learning in China, which has become a major advantage for the development of e-learning (Jiang & Wang, 2015). In many universities, many courses are

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being delivered through e-learning platforms (Yang & Zheng, 2022). E-learning, developed as a teaching method based on information technology, is both related to and an extension of traditional classroom teaching (Zhang, 2022). In higher education, e-learning exhibits great potential for teaching and learning and is rapidly evolving due to its unique advantages of flexibility, convenience, interactivity, and openness (Lin & Yong, 2022). According to the 2022 report on Internet development in China by the China Internet Network Information Center (CNNIC), this year marks the 28th anniversary of fully functional Internet access in China. Chinese universities are taking advantage of this opportunity to actively pursue change and promote a "quality revolution" in higher education talent cultivation (Dang, 2022). Revised sentence: Therefore, it is imperative to keep pace with the times, grasp the developmental trajectory of e-learning, and expeditiously prioritize online education as a crucial objective in the modernization strategy for education (Zhang et al., 2022). According to Zhen (2022), the number of papers published on e-learning in China Knowledge Network (CNKI) peaked in 2020. However, compared with the rapidly growing demand for e-learning, current academic achievements in this field are relatively limited domestically. There exist issues of insufficient depth and breadth and redundancy of qualitative research over quantitative research.

Satisfaction, perceived availability, quality, and value are critical predictors of students' future intentions to use a service (Chiu et al., 2005). Satisfaction can be defined as an individual's pleasure or disappointment when comparing their acceptance of a product or service with their perceptions of its performance (Hsu & Chiu, 2004). In actuality, the mediating role of value and satisfaction is crucial in the direct relationship between quality and willingness to continue (Chang, 2013). User loyalty toward a product is one of the benchmarks for evaluating user satisfaction and perceived post-acceptance utility (Oghuma et al., 2016). Therefore, in light of the prevailing trend towards digital education and the promotion of digital educational transformation, educators must accord utmost importance to their efforts aimed at enhancing students' e-learning satisfaction and users' continuous intention. The empirical research findings strongly support that the expectation-confirmation model (ECM) provides a more accurate description and prediction of students' intent to continue with e-learning (Ouyang et al., 2017).

Building upon prior research, this study examines factors significantly influencing e-learning satisfaction and continuance intention among undergraduate dance choreography students at three private universities in Chengdu, China. Specifically, the study focuses on satisfaction and sustained intention and proposes a quantifiable methodology to analyze these key characteristics within this population.

2. Literature Review

2.1 E-learning in China

Fueled by a vast market, various policies, and ample capital, e-learning in China rapidly expands regarding user base, enterprise count, infrastructure development, and industrial system establishment. It has emerged as a valuable complement to traditional education. With the swift evolution of internet mechanisms and the widespread adoption of 5G and broadband technologies, mobile e-learning in China is flourishing. As Chinese residents' living standards continue to rise, their consumption patterns are evolving, with a significant increase in spending on education and cultural entertainment. This trend provides a robust economic foundation for the growth of the e-education industry (Zeng & Liu, 2022).

According to a study by Zhen (2022), the number of published articles on e-learning in China Knowledge Network (CNKI) has declined from 2020 to 2021. As of October 2022, only 828 articles related to e-learning have been published in CNKI's database, which is less than one-third of the total articles published in 2020. The top three institutions in China's online learning research field are all teacher-training colleges and universities. Researchers at these institutions typically possess a strong educational theory background and a solid foundation for conducting online education research. Additionally, the requirements of senior teacher education reform serve as objective factors motivating teachers to engage in research continuously. Although private universities have made significant progress and improvements over the past 20 years, they still need to catch up in scientific research, particularly in areas related to e-learning. Additionally, the proportion of qualitative research outweighs that of quantitative research in these findings.

2.2 Expectation-Confirmation Model (ECM)

Oliver (1980) introduced the expectancy-confirmation theory (ECT), which serves as the foundation of ECM. Thong et al. (2006) noted in their research that Bhattacherjee (2001), the pioneering researcher who proposed ECM, has established it as a widely-used theory for predicting participants' intentions to continue using information technology (IT) and information systems (IS). According to Lee (2010), ECM represents an enhanced iteration of ECT. As scholars Cheng (2019) and Thong et al. (2006) posited, this enhancement is achieved by translating the variance between pre-expenditure expectations and actual implementation into a model for sustained IS/IT utilization post-full acceptance. According to the ECM, users' intention to continue using an information system or technology is

contingent upon their post-adoption expectations of its perceived benefits, the extent of validation received, and overall satisfaction (Bhattacherjee, 2001; Lee, 2010).

EMC is widely utilized in various research projects, including MOOC research. The students' self-discipline, self-awareness, and perceived usefulness of the course are closely linked to their continued willingness to participate in MOOCs. Xu (2015) has applied a more scientific and improved ECM in researching the continuance intention of participants in MOOCs, which is like what Alraimi et al. (2015) have done.

2.3 Technology Acceptance Model (TAM)

Davis (1989) initially proposed the Technology Acceptance Model (TAM) following a series of studies aimed at accurately predicting or hypothesizing the scientific and practical ease with which participants would accept various types of information. Subsequently, other researchers have refined this model. Revised sentence: The technology acceptance model proposed by Ngai et al. (2005) was developed out of practical necessity and aimed to facilitate the scientific explanation and prediction of users' adoption behaviors towards specific technologies. Through collective discovery, this model gradually revealed that accepting a given technology can significantly influence users' intervention in favor of it, resulting in positive outcomes.TAM is a highly regarded theoretical model (Chen et al., 2007) that has gained widespread acceptance and application (Dillon & Morris, 1996). It has provided robust support in various domains (Masrom, 2007), including the comprehension and management of technology adoption (Park, 2009).

TAM is gradually gaining recognition and attracting widespread attention (Weng et al., 2018). These factors have also contributed to its benign development (Ngai et al., 2005). In a comprehensive analysis, the utilization of TAM is highly prevalent, and numerous scholars have validated its efficacy in their respective fields (Muhamad Sufi, 2019). The acceptance of e-learning, particularly among university educators, has been extensively researched across various countries. The significance of the Technology Acceptance Model (TAM) is evident from its widespread application in such studies. In the context of e-learning, reliable data have yielded corresponding outcomes.

2.4 Information System Success Model (ISSM)

According to the Information Systems Success Model, many interrelated factors impact an information system's performance (Wang et al., 2007). The ISSM (DeLone & McLean, 2004) presents a comprehensive framework for evaluating information system performance. The comprehensiveness, adaptability, reliability, user-friendliness, ease of learning and use, system correctness (Elifoğlu-Kurt, 2016), as well as the efficiency of information generated (Petter et al., 2008) and the presence or absence of system errors (Rabaai, 2009), are all factors to be considered in evaluating software quality. These aspects constitute the SQ dimensions proposed by ISSM (Petter et al., 2013). Another aspect of the model is the quality of technical services, which refers to the level of support that customers receive from their systems, including training in system use and help desk assistance (Petter et al., 2008).

Although educational quality is a possible perspective for examining this variable, recent developments in distance education systems have led many scholars to consider it more appropriate to analyze as an independent variable (Wang et al., 2007). The degree to which participants perceive their needs, goals, and desires adequately addressed by the educational system and their satisfaction level regarding the support and services provided are crucial factors (Sanchez-Franco, 2009).

2.5 Confirmation

Confirmation, as defined by Bhattacherjee (2001) in his study, refers to the user's evaluation of the alignment between their expectations of an information system/technology and its actual performance. Tan and Kim (2015) contend that confirmation is a more salient construct driving satisfaction. Roca et al. (2006) et al., through their ongoing research, posit that cognitive uptake is influenced by perceived utility, satisfaction, and perceived ease of use, with changes in these three variables resulting in significant alterations to cognitive uptake. The confirmation construct can accurately predict student satisfaction with online instruction. Expected confirmation positively relates to how students utilize online learning to obtain the expected benefits (Chow & Shi, 2014). Users' satisfaction with an information system (IS) stem from realizing its existence and attaining greater satisfaction than anticipated through usage (Ouyang et al., 2017). Therefore, a hypothesis is developed:
H1: Confirmation has a significant impact on satisfaction.

2.6 System Quality

Aspects of system quality encompass the presence of defects in the system, consistency and intuitiveness of the user interface, usability, quality of documentation, and occasional excellence and maintainability of computer code (Seddon, 1997). The required functionality of information systems, such as usability and availability, is called system quality (Kim et al., 2022). The system quality of an e-learning platform can be perceived as a crucial factor in its effectiveness (Fianu et al., 2018). Similarly, Albelbisi et al.

(2021) refer to the overall quality of MOOCs as "system quality." According to Petter et al. (2013), system quality is one of the key indicators determining information processing systems' performance and efficiency. System quality is an important external factor that impacts consumer perceptions of technology use (Fearnley & Amora, 2020). High-quality systems on learning management platforms can enhance users' overall satisfaction with the system (Abu Seman et al., 2019). Information systems researchers often employ system quality characteristics to elucidate user satisfaction with the system (Rahim & Razak, 2021). Thus, a hypothesis is set:
H2: System quality has a significant impact on satisfaction.

2.7 Service Quality

The Information Systems Success Model highlights the significant relationship between service quality and information systems assistance, as Halilovic and Cicic (2013) identified. Additionally, Oghuma et al. (2016) emphasize the crucial role of perceived service quality in shaping affirmation and satisfaction within the extension of the expectation-confirmation model. Information systems quality encompasses the effectiveness and functionality of a specific information system, including its features and outcomes (Roca et al., 2006). Service quality pertains to desirable aspects of student-professor interactions, such as timeliness, responsiveness, fairness, intellectual competence, and faculty availability (Ching et al., 2021). The full support and assistance provided by the MOOC provider are encompassed within the concept of service quality (Kim et al., 2022). Service quality specifically pertains to the aid furnished by MOOC providers' faculty and IT staff members (Albelbisi et al., 2021). Accordingly, a hypothesis is put forward:
H3: Service quality has a significant impact on satisfaction.

2.8 Perceived Usefulness

The quality of a system typically only impacts its perceived usefulness, as Aboelmaged (2018) argues. However, Sørebø et al. (2009) suggests that perceived utility and satisfaction are key factors in explaining why users continue to use information systems. The technology acceptance model posits two distinct constructs, namely perceived usefulness and perceived usability, which are grounded in the theory of rational behavior and considered primary drivers of technology adoption (Roca et al., 2006). Empirical evidence suggests that users' hedonic experience is significantly influenced by their perceived usefulness (Chiu et al., 2005). Self-efficacy for online learning emerges as the sole significant predictor of perceived usefulness (Landrum, 2020). Perceived usefulness refers to the expected overall beneficial impact of system utilization on work outcomes (Mailizar et al., 2021), which is influenced by innovation in terms of perceived usefulness and usability (Md Noh & Amron, 2021). Based on the above discussions, this study can be hypothesized that:
H4: Perceived usefulness has a significant impact on satisfaction.
H7: Perceived usefulness has a significant impact on continuance intention.

2.9 Satisfaction

A mediating variable, namely student satisfaction, may influence the relationship between e-learning outcomes and quality (Ching et al., 2021). Usage and user satisfaction are critical factors that directly impact net benefits (Kim et al., 2022). In this study, "satisfaction" refers to learners' contentment with their participation and performance in the MOOC course (Albelbisi et al., 2021). This study has identified personal qualities, system characteristics, and course characteristics as the key factors that affect student satisfaction (Abu Seman et al., 2019). The effectiveness of course design plays a crucial role in determining students' satisfaction with cloud-based e-learning platforms (Cheng, 2020). Research studies have demonstrated that one of the most significant predictors of enhancing student engagement in a course is their level of satisfaction (Dehghan et al., 2014). The realization of anticipated benefits from e-learning technology will significantly enhance user satisfaction and foster user affirmation of the information system employed, thus indicating a positive correlation between them (Sørebø et al., 2009). User satisfaction is a prerequisite for exerting personal and organizational influence (Roca et al., 2006). Confirmation maintains moderate happiness levels, while positive disconfirmation amplifies it, and negative disconfirmation diminishes it (Chiu et al., 2005). Hence, a hypothesis is suggested:
H5: Satisfaction has a significant impact on continuance intention.

2.10 Information Quality

When utilizing an e-learning system, users may prioritize excellent service over superior systems and information (Chang, 2013). The quality of information has the most significant impact on nurse performance in a blended e-learning system (Cheng, 2014). The content issue is closely linked to the quality of information (Kim et al., 2022). In this study, "information quality" refers to MOOC's ability to provide clear, timely, relevant, and consistently available information (Albelbisi et al., 2021). However, due to students' positive attitudes toward using learning management systems (Abu Seman et al., 2019), information quality is no longer a top priority. The terms information

quality, system quality, and service quality all pertain to the overall excellence of the system and its provider (Hussein & Hilmi, 2021). Revised sentence: According to studies conducted by relevant scholars, information quality has a greater impact on satisfaction than service and system quality, while confirmation has the most significant influence (Roca et al., 2006). The results indicate a strong positive correlation between user happiness and customer loyalty, while information quality significantly impacts user happiness (Chiu et al., 2005). The findings highlight the crucial roles of social influence and information caliber as drivers for users' sustained adoption of Facebook for learning purposes (Aboelmaged, 2018). As a result, a proposed hypothesis is indicated per below:

H6: Information quality has a significant impact on satisfaction.

2.11 Continuance Intention

The user's intention to continue using the product is influenced by their perceived usefulness, information quality, confirmation, service quality, system quality, perceived usability, and cognitive absorption (Roca et al., 2006). The results indicate that users' enjoyment significantly impacts their persistent intention to use the product, which is jointly determined by perceived usability, quality, value, and discomfort (Chiu et al., 2005). Persistent intention refers to users' continuing to use a service after acquisition (Cheng, 2021). The perceived value and well-being of e-learning systems in higher education libraries significantly impact users' intention to continue learning, as demonstrated by the strong predictive validity of the expectation-confirmation model of information system/information technology continuation (Chang, 2013; Cheng, 2014). The intention to continue using MOOC indefinitely is influenced by system quality, computer self-efficacy, and performance expectations (Albelbisi et al., 2021). Li and Kitcharoen (2022) posted that continuance intention can promote actual behavior.

3. Research Methods and Materials

3.1 Research Framework

The conceptual framework of this study is carefully designed, drawing on a large body of prior research. We incorporated three prominent theories- ECM, TAM, and ISSM-as- and three a priori theoretical frameworks to ensure their robustness and comprehensiveness. By interweaving these different ideas, our framework provides a nuanced understanding of the complex phenomena under investigation. Cheng (2020) put forth an initial theoretical framework that illuminated the intricate interplay among three key variables in the extended ECM: confirmation, satisfaction, and continuance intention. Chang (2013) put forward a theoretical framework that expounds on the impact of System Quality (SYQ), Information Quality (IQ), and Service Quality (SQ) on customer satisfaction in an eloquent manner. Cheng (2014) put forth a third theoretical framework that delves into the impact of perceived usefulness - a fundamental variable in TAM - on satisfaction and continuance intention. Figure 1 presents an all-encompassing conceptual framework for this study.

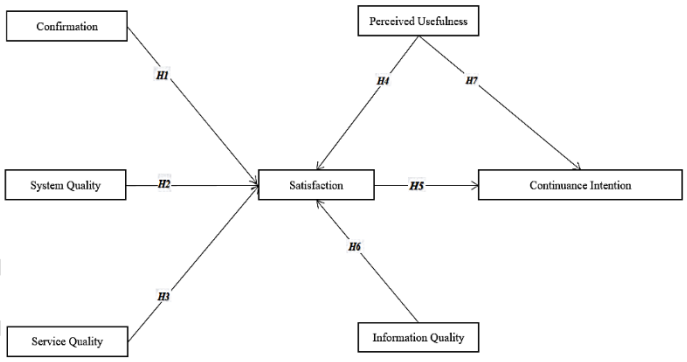

Figure 1: Conceptual Framework

H1: Confirmation has a significant impact on satisfaction.
H2: System quality has a significant impact on satisfaction.
H3: Service quality has a significant impact on satisfaction.
H4: Perceived usefulness has a significant impact on satisfaction.
H5: Satisfaction has a significant impact on continuance intention.
H6: Information quality has a significant impact on satisfaction.
H7: Perceived usefulness has a significant impact on continuance intention.

3.2 Research Methodology

The research instrument employed in this study is a quantitative questionnaire comprising three distinct sections: a screening question, demographic information, and scale items designed to measure all observed variables. The researcher utilized a single screening question to ensure that the sample met the criteria for subsequent study. The screening questions serve two purposes: First, they must elicit specific information about the participant while preventing the disclosure of precise details regarding the study. Procedural questions should be asked initially to obtain more detailed information from respondents, followed by further research as necessary (Lodico et al., 2006). The researcher

used information on four characteristics, including gender, university affiliation, years of study, and field of study, to determine the respondents' demographic information. A further 29 scale items were used to assess the potential variables, including three items for confirmation, five for system quality, three for service quality, four for satisfaction, six for information quality, four for perceived usefulness, and four for continuance intention. A five-point Likert scale was utilized to assess the entire range of items on the scale. Per Salkind (2017), the Likert scale is an instrument for evaluating attitudes that employs a five or seven-point system to gauge participants' levels of agreement or disagreement with a series of test questions.

For validity and reliability test, three experts were invited to validate the content by using the index of item-objective congruence (IOC) with all items are approved at a score of 0.6 or over. Subsequently, the pilot test of 30 samples were investigated. In addition, the researcher tested the internal consistency reliability by applying Cronbach's alpha reliability (CA) test. The results show that all items were passed at a score of 0.7 or above (Nunnally, 1978).

3.3 Population and Sample Size

The sample size of a study refers to the number of observations included in each sample. Taherdoost (2017) states that any empirical research that aims to conclude the entire population must consider the sample size. Therefore, after screening and quota selection, 500 individuals were chosen as the final sample from a total population 670. The survey targeted undergraduate dance choreography students from three prestigious private universities in Chengdu, China: Sichuan University of Media and Communications (SUMC), Sichuan Technology and Business University (STBU), and Sichuan Film and Television University (SFTU). The final count revealed 492 valid responses and 8 invalid questionnaires.

3.4 Sampling Technique

This study applied purposive sampling to select undergraduates majoring in dance choreography with at least one month of e-learning experience from three prestigious private universities in Chengdu, China: Sichuan University of Media and Communications (SUMC), Sichuan Technology and Business University (STBU), and Sichuan Film and Television University (SFTU). A quota selection was employed to select 500 out of 670 undergraduates from three private universities in Chengdu, China. Convenience sampling was conducted by distributing an online questionnaire.

Table 1: Sample Units and Sample Size

Target private Universities	Grade Level	Population	Proportional Sample Size
Sichuan University of Media and Communications	Freshmen	69	51
	Sophomore	72	54
	Junior	65	49
	Senior	48	36
Sichuan Technology and Business University	Freshmen	36	27
	Sophomore	51	38
	Junior	57	43
	Senior	29	22
Sichuan Film and Television University	Freshmen	63	47
	Sophomore	61	46
	Junior	69	51
	Senior	50	36
Total		**670**	**500**

Source: Constructed by author

4. Results and Discussion

4.1 Demographic Information

The demographic characteristics of the 492 respondents are comprehensively summarized in Table 3. Among all respondents, 25.6% were male, and 74.4% were female, with a distribution of 40%, 22.8%, and 37.2% enrolled in Sichuan University of Media and Communications (SUMC), Sichuan Technology and Business University (STBU), and Sichuan Film and Television University (SFTU) respectively. By academic year, first-year students accounted for 25%, sophomores accounted for 27.4%, juniors accounted for 28.5 %, and seniors accounted for 19.1%.

Table 2: Demographic Profile

Demographic and General Data (N=492)		Frequency	Percentage
Gender	Male	126	25.6
	Female	366	74.4
Use which M-banking app	SUMC	197	40
	STBU	112	22.8
	SFTU	183	37.2
Grade Level	Freshman	123	25
	Sophomore	135	27.4
	Junior	140	28.5
	Senior	94	19.1

Source: Constructed by author

4.2 Confirmatory Factor Analysis (CFA)

In CFA, the factor analysis is a theoretically supported method for assessing the fit of a factor composed of multiple variables to actual data. By utilizing this measure, researchers can more accurately determine the relationship between potential and observed variables (Amalia, 2019). For Cronbach's alpha reliability (CA) test, the results show that

all items were passed at a score of 0.7 or above (Nunnally, 1978). The average variance extracted (AVE) is a numerical indicator ranging from 0 to 1, with a recommended threshold of 0.50 or higher for ensuring convergent validity, as suggested by Bagozzi and Yi (1988), Kennett-Hensel et al. (2009), and Hair et al. (2013). Based on the data presented in Table 5, it can be concluded that all average extracted variance (AVE) values exceeded 0.50, composite reliability (CR) was greater than 0.70, and factor loading values were higher than 0.50.

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
Confirmation (CON)	Cheng (2020)	3	0.801	0.845-0.901	0.903	0.757
System Quality (SYQ)	Chang (2013)	5	0.836	0.733-0.821	0.837	0.567
Service Quality (SQ)	Chang (2013)	3	0.836	0.767-0.827	0.837	0.632
Information Quality (IQ)	Chang (2013)	6	0.818	0.727-0.774	0.887	0.887
Perceived Usefulness (PU)	Cheng (2020)	4	0.889	0.747-0.794	0.855	0.596
Satisfaction (SAT)	Cheng (2020)	4	0.813	0.763-0.807	0.870	0.627
Continuance Intention (CI)	Cheng (2020)	4	0.826	0.801-0.832	0.879	0.645

Therefore, as presented in Table 4, all applicable thresholds for absolute fit indices such as CMIN/DF, GFI, AGFI, and RMSEA and incremental fit measures such as CFI, NFI, and TLI are satisfied. Henceforth, all goodness-of-fit measures utilized for the CFA examination are deemed acceptable.

Table 4: Goodness of Fit for Measurement Model

Fit Index	Acceptable Criteria	Statistical Values
CMIN/DF	< 3.00 (Hair et al., 2010)	1.093
GFI	≥ 0.90 (Bagozzi & Yi, 1988)	0.949
AGFI	≥ 0.85 Schermelleh-Engel et al., 2003)	0.938
RMSEA	< 0.08 (Pedroso et al., 2016)	0.014
CFI	≥ 0.90 (Hair et al., 2010)	0.996
NFI	≥ 0.80 (Wu & Wang, 2006)	0.952
TLI	≥ 0.90 (Hair et al., 2010)	0.995
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, CFI = Comparative fit index, NFI = Normed fit index, and TLI = Tucker–Lewis index.

The values on the diagonal line of Table 5 represent the square root of AVE, and all potential variable correlations were below 0.80 (Schmitt & Stults, 1986). These quantitative measures were utilized to examine and report findings related to discriminant validity.

Table 5: Discriminant Validity

	CON	SYQ	SQ	IQ	PU	SAT	CI
CON	**0.870**						
SYQ	0.328	**0.766**					
SQ	0.352	0.305	**0.795**				
IQ	0.249	0.267	0.277	**0.753**			
PU	0.288	0.200	0.323	0.141	**0.772**		
SAT	0.447	0.362	0.428	0.267	0.521	**0.792**	
CI	0.341	0.274	0.400	0.236	0.537	0.570	**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)

SEM is frequently employed to assess the adequacy of a model in capturing variation and covariance among observable or latent variables. In this study, validation of the structural equation modeling (SEM) was conducted after CFA evaluation. To assess the validity of the assumed causal interpretation, specific combinations of linear coefficients were evaluated using SEM techniques. It is worth noting that many applications of structural equation modeling (SEM) employ flawed or inaccurate models (Box, 1979; MacCallum, 2003). As shown in Table 6, the adjusted values of CMIN/DF, GFI, AGFI, CFI, NFI, TLI, and RMSEA all exceed the acceptable range according to AMOS version 24. These results suggest that the model fits well.

Table 6: Goodness of Fit for Structural Model

Fit Index	Acceptable Criteria	Statistical Values
CMIN/DF	< 3.00 (Hair et al., 2010)	1.782
GFI	≥ 0.90 (Bagozzi & Yi, 1988)	0.906
AGFI	≥ 0.85 Schermelleh-Engel et al., 2003)	0.888
RMSEA	< 0.08 (Pedroso et al., 2016)	0.040
CFI	≥ 0.90 (Hair et al., 2010)	0.963
NFI	≥ 0.80 (Wu & Wang, 2006)	0.919
TLI	≥ 0.90 (Hair et al., 2010)	0.959
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, CFI = Comparative fit index, NFI = Normed fit index, and TLI = Tucker–Lewis index.

4.4 Research Hypothesis Testing Result

Perceived usefulness was found to directly and significantly impact satisfaction, as indicated by the results presented in Table 7. The quantitative method yielded the strongest effect with a standardized pass-through coefficient (β) of 0.478 (t-value = 9.092***). Additionally, satisfaction demonstrated a strong interaction effect on continuance intention with a β-value of 0.446 (t-value = 7.938***).

Additionally, the perceived usefulness significantly influenced the intention to continue using it with a β-value of 0.337 (t-value 6.365***). In contrast, confirmation significantly impacted satisfaction with a β-value of 0.283 (t-value 6.174***), and service quality significantly affected satisfaction with a β-value of 0.244 (t-value 5.163***). The study also examined the system's quality and found that it significantly impacted satisfaction, with a β value of 0.196 (t-value of 4.275***). In contrast, information quality had the least impact on satisfaction in this quantifiable survey, with a β-value of 0.115 (t-value 2.575**).

Table 7: Hypothesis Results of the Structural Equation Modeling

Hypothesis	(β)	t-Value	Result
H1: CON→SAT	0.283	6.174***	Supported
H2: SYQ→SAT	0.196	4.275***	Supported
H3: SQ→SAT	0.244	5.163***	Supported
H4: PU→SAT	0.478	9.092***	Supported
H5: SAT→CI	0.446	7.938***	Supported
H6: IQ→SAT	0.115	2.575**	Supported
H7: PU→CI	0.337	6.365***	Supported

Note: *** p<0.001, ** p<0.01
Source: Created by the author

According to the results presented in Table 7, utilizing a standardized path parameter threshold of 0.283 for this construct approach, **H1** suggests that confirmation significantly influences satisfaction. Confirmation can assist users in clarifying their level of satisfaction with the product or service and enable them to realize the expected benefits through their usage experience (Xu et al., 2017).

System quality was identified as one of the primary determinants of analysis satisfaction in **H2**, with a normalized path coefficient of 0.196. Revised sentence: Based on the relevant literature, system quality is associated with time management, user interface quality, and video quality. The rationale for ensuring system quality in an e-learning environment is to ensure that the system aligns with its intended application and meets user needs (Kim et al., 2022).

The empirical findings of **H3** support the proposition that service quality significantly impacts satisfaction, as evidenced by a standardized coefficient value of 0.244, which indicates a more pronounced effect in this quantitative survey. According to the analysis of program service quality items in related studies, students value tangible services more (Dehghan et al., 2014). In face-to-face education systems, the quality of program services directly impacts student engagement with the course (Hennig-Thurau et al., 2001).

Furthermore, the results of **H4** indicate a significant positive impact of perceived usefulness on participants' attitudes, as evidenced by a standardized coefficient value of 0.478. Revised sentence: According to relevant academic research, the perceived usefulness after adoption and early validation of information system use expectations significantly impacts user well-being (Hsu & Chiu, 2004).

The survey conducted in **H5** confirmed that satisfaction had a highly significant impact on continuation intention, with a standardized coefficient of 0.446. As satisfaction levels increase, the quality of e-learning can significantly contribute to improved learning outcomes (Ching et al., 2021). Additionally, satisfaction plays a crucial role as a mediator in the direct relationship between quality and intention to continue (Chang, 2013).

The capacity of a product to furnish information that is lucid, punctual, pertinent, and consistently accessible is denoted as information quality (Albelbisi et al., 2021). Regarding **H6**, a relatively substantial correlation between information quality and satisfaction was discernible, with a common coefficient value of 0.115, which also constituted this study's weakest point of influence. Revised sentence: The positive attitude of students towards using the learning management system has led to a shift in priorities, with information quality no longer being the primary concern (Abu Seman et al., 2019).

Their usefulness and ease of use influence users' perceptions of system usage (Roca et al., 2006). In the end, **H7** concluded that perceived usefulness had a significant and positive impact on satisfaction, as evidenced by a standard coefficient statistic score of 0.337 - the second strongest predictor of sustained intention in this study. As students' self-efficacy in online learning improves, the perceived utility of online courses also increases (Landrum, 2020).

5. Conclusion and Recommendation

5.1 Conclusion and Discussion

This research will ascertain the significant factors influencing the satisfaction and continuance intention toward e-learning among undergraduate dance choreography students at three prominent private universities in Chengdu, China.

The conceptual framework has identified seven hypotheses for testing the relationships among confirmation, system quality, service quality, perceived usefulness,

satisfaction, information quality, and continuance intention. A sample of 492 undergraduate dance choreography students with e-learning experience was selected to participate in the questionnaire survey, which enabled an objective assessment of the interplay between these variables. The researcher employed confirmatory factor analysis (CFA) to determine the fit of research data with the specified theory-derived measurement model. At the same time, Structural Equation Modeling (SEM) was utilized for testing hypotheses and evaluating the relationships between observed and potential variables that influence satisfaction and continuance intention.

The present study reveals that perceived usefulness exerts the most significant direct impact on satisfaction, strongly predicting continuance intention. Moreover, perceived usefulness also has an equally substantial effect on continuance intention. Additionally, confirmation, system quality, service quality, and information quality are all found to be equally influential factors affecting satisfaction with relatively low standardized path coefficients.

5.2 Recommendation

In this study, satisfaction was found to have the most direct and pronounced impact on sustained intention, while perceived usefulness also strongly influenced sustained intention. Based on these findings, the researcher recommends that various approaches be employed to facilitate the further development of e-learning, including those involving educational institutions and instructors.

In this study, perceived usefulness was found to have the most significant impact on satisfaction. Therefore, it is recommended that teachers enhance students' confidence and awareness of independent learning and fully stimulate their interest in utilizing e-learning resources. Furthermore, educators can devise customized learning plans tailored to dance choreography students' specific needs to facilitate their mastery of e-learning. Simultaneously, in conjunction with activities such as thematic learning and group discussions, students are encouraged to utilize the e-learning platform for collecting and retrieving materials related to their choreography assignments. This further enhances their independent abilities and gradually instills a sense of efficacy toward e-learning resources.

In today's developed Internet, it is imperative for schools to proactively guide university students in redefining their learning concepts, leveraging the convenience of e-learning platforms, and innovating new approaches. Meanwhile, the vast data resources and interactive advantages offered by e-learning spaces can be harnessed by university students to expand their knowledge base and enhance their information literacy.

From the perspective of service quality and system quality, teachers, as cultural and knowledge disseminators, should take the initiative to enhance their proficiency in utilizing e-learning systems and provide more instructional guidance for students to expedite their mastery of e-learning skills while increasing their interest in participation. Simultaneously, proactively upload self-made, refined, and efficacious course materials onto the e-learning platform to foster students' sense of inclusion and engagement in their academic pursuits. Teaching units should maintain active and effective communication with e-learning system developers to provide prompt feedback on user issues and expedite the resolution of student queries related to system usage. Simultaneously, provide constructive feedback to the developers to facilitate ongoing enhancements and optimizations of the system's responsiveness, interface, and operational methodologies, ensuring that users can seamlessly access many valuable learning resources while enjoying an optimal e-learning experience.

E-learning is a highly educational information system that should be designed with the learner in mind, aiming to enhance learner satisfaction and continuity. Meanwhile, platform resources should be selected based on dance choreography students' learning styles and habits, providing quality service while ensuring the quality of information resources and promoting subjective and continuous learning behavior.

5.3 Limitation and Further Study

It should be noted that this study has certain limitations, and future efforts in this field will focus on conducting more comprehensive research. Additionally, the data used for this study was exclusively obtained from private universities located in Chengdu, China. Given the limited scope of this study, further research could expand the sample size to include respondents from public universities and other cities in Sichuan Province. Cross-province comparisons should also be conducted to enhance the integrity of this study. Additionally, incorporating more theories, such as the Theory of Rational Action (TRA) and the Theory of Planned Behaviour (TPB), into future studies would help develop a more comprehensive conceptual framework.

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