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Antecedences to Satisfaction and Continuance Intention to Use E-learning of Postgraduate Students in Beijing, China

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Abstract

This article aims to investigate the critical factors impacting postgraduate students' satisfaction and continuance intention to use e-learning in the Beijing Film Academy, Beijing, China. The main theories were Information Systems Success Model (ISSM), Expectation Confirmation Theory (ECT), and Technology Acceptance Model (TAM). This study comprises perceived usefulness, confirmation, satisfaction, system quality, information quality, service quality, and continuance intention. The sample size is 500. After the data screening, 483 responses were used. The study employed three sampling techniques: purposive sampling, quota sampling, and convenience sampling. To ensure content validity, the index of item-objective congruence (IOC) was utilized. In addition, a pilot test was conducted with a sample of 50 participants, and the reliability of the measurements was assessed using Cronbach's alpha coefficient. Additionally, confirmatory factor analysis (CFA) and structural equation modeling (SEM) were employed to analyze the data and generate the findings. The results showed that confirmation has a significant impact on perceived usefulness. Perceived usefulness, confirmation, system quality, information quality, and service quality significantly impact satisfaction. Perceived usefulness and satisfaction significantly impact continuance intention. In conclusion, educators and e-learning system developers should exploit the benefits of online learning in order to increase students' learning efficiency.

Keywords: e-learning, satisfaction, continuance intention, system quality, information quality

Introduction

Through media comparison studies, it has been 'shown' that the learning outcomes of e-learning and traditional face-to-face instruction are identical. The cloud-based e-learning system is adaptive and scalable for educational institutions since it does not have the high costs of expensive gadgets, the slow network transmission rate, and the constrained storage capacity associated with the conventional e-learning system. It can make scalability easier and prevent data overload on users' terminals. (Hew & Syed Abdul Kadir, 2016). Various software businesses such as TenCent Class, Odoos and WeChat now offer interactive communication and multi-level, fully integrated remote education options through modern e-

learning systems. Multiple libraries at higher education institutions have created and are using a library portal to provide users with a better experience (Masrek & Gaskin., 2016).

After the o the global health pandemic event broke out in 2020, many schools were shut down, and most students used online learning to finish their homework at home. Several relevant documents have been made available, promoting "Internet + education" and strengthening the transformation of core educational practices by including and using technological advancements in teaching. 423 million Chinese citizens are currently enrolled in online courses, according to the 45th China Online Marketing Information Report from 2020, released by Internet Live Stats. 2020 will bring significant growth opportunities for China's online education business, enticing numerous institutions and financial investment (Jia & Han, 2022). The market demand for the services, which is driving these innovations, is driving both the teaching and learning methodologies teachers and students use in online education in the direction of individualized methods, content specialization, and product enrichment. The Central Broadcasting Network reported that, based on insufficient data, there are already about 100,000 off-campus tutoring centers in China.

The effectiveness of online instruction is significantly impacted, following Jia and Han (2022), by the available infrastructure quality of the network. During the teaching process, students participate in class via computers, mobile phone activities, and other portable devices. According to Teng et al. (2012), online students' total happiness and learning experience are considered. Udo et al. (2011) created a conceptual framework with five components: assurance, empathy, responsiveness, reliability, and website content, while also considering student satisfaction and perseverance as learning experiences. Thus, this study provides significant research value for assessing factors impacting postgraduate students' satisfaction and continuance intention with e-learning in Beijing, China.

Literature Review

Online Education of China

According to several media publications, 2013 was "the first year of online education in China." Online learning is rapidly expanding in terms of new products, improvements to existing ones, and endeavors to bring offline learning online. The number of users and the rate at which they use online learning in China keep expanding. China's online education business will open a variety of development chances in 2020 and draw a lot of institutional and financial investment (Hao & Akoorie, 2021). Under the government's ongoing promotion, online learning is becoming a more stable foundation, investments in educational science and technology are continuously expanding, and my nation's state of educational science and technology keeps improving. Off-campus tutoring organizations have started to expand their practices in a way that combines offline and online teaching in response to the recent growth of online education. The percentage of households that took an online course was 21% among those who received business education counseling (Office of Educational Technology, n.d.).

Technology Acceptance Model (TAM)

A technology that is easy to use can break down barriers. Everyone has a negative attitude toward anything if its interface is complicated (Mouakket & Bettayeb, 2015). External factors, such as societal impact, greatly influence attitude. Once these elements (TAM) are in place, the mindset and intention to use the system will also be there. Sadly, because each person is different, opinions based on gender and age would vary. Much scientific research has been conducted regarding acceptance. Among the models most frequently used to describe how people adopt new technologies is the Technology User Acceptance Model. (Davis, 1989). Davis (1989) did the initial research into the TAM. According to Davis (1989), the theories of Planned Behavior and Reasoned Action, founded on psychologically based behavioral theories, are designed to understand, and explain how humans accept and use technological improvements. TAM was created in the 1980s in response to concerns that employees were not making the most of information technology accessible to them. It is generally accepted that behavioral intention is what is meant when one talks about acceptance because it is the essential requirement for adopting information technology. Another frequently used definition of acceptance is user satisfaction. Sometimes the sole observable result of interest in a TAM inquiry is behavioral intention. Real use is hard to measure and is believed to predict actual usage accurately. Their attitude toward using technology influences a person's behavioral intention. Perceived utility and perceived usability are the two main aspects of attitude. Furthermore, it is asserted that PU has a different impact on the behavioral intention from PEOU and that PEOU influences perceived usefulness (Cheng, 2020).

Information Systems Success Model (ISSM)

DeLone and McLean (1992) started developing the idea and a decade later, they kept doing so in response to comments from other academics researching the subject. The IS success model is one of the most well-known ideas in the field of research on modern information systems, and it has been cited in tens of thousands of academic publications. The paradigm for information systems proposed by DeLone and McLean (1992) is the most used. The Information Systems Success Model provides a complete framework for calculating the effectiveness of information systems. (DeLone & McLean, 2004). The information a system creates must be comprehensive, flexible, reliable, easy to use, accurate, and cost-effective to be considered high quality with no mistakes. Popular information quality attributes include readability and utility of system outputs like administrative reports and web pages. (DeLone & McLean, 2004). This suggests that it comprises evaluations concentrating on the accuracy and value of the system's data. (DeLone & McLean, 2004). The additional component of the model (help desk, system usage training, etc.) is the caliber of the technical support or the degree of assistance responders receive from their system. (Petter & McLean, 2009). The notion of net benefit refers to the educational system's advantage (higher production, cheaper expenses, etc.) or how it helps an individual or organization succeed. (Petter & McLean, 2009). The concept of education quality, viewed as a new element of the model, is the extent to which the educational system has provided students with a productive learning environment. (Petter & McLean, 2009).

Expectation Confirmation Theory (ECT)

The expectation-confirmation theory (ECT), created by Bhattacharjee (2001) and based on the original ECT Oliver (1980), was first developed. Developing a pure post-acceptance model from the gap between expected and actual vitality usage performance modifies the ECT to keep employing information systems and technology. It also discusses how users' cognitive beliefs impact their intention to continue using such systems. According to ECM, users' motivation to continue using an information system or piece of technology is theoretically dependent on how advantageous they think it to be (post-adoption expectations), how much they have confirmed this, and how satisfied they are with it. (Lee, 2010). "Continuance intention" refers to a user's decision to continue using a service after the first adoption. (Bhattacharjee, 2001). According to ECM, a user's perception of the usefulness of information systems and technology impacts whether they plan to continue using them. (i.e., post-adoption expectations), the extent to which they have been validated, and the level of satisfaction with the systems and technology (Bhattacharjee, 2001). Clients utilize the system more frequently than they planned, and the system operates better than anticipated. Users' pre-acceptance opinions of the utility of cloud computing services are validated throughout real usage. As a result, sensible users may adjust their initial views of utility to resolve cognitive dissonance. Because of this, their expectations for cloud computing services are met, which may affect how beneficial they think the services are. (Cheng, 2019; Tan & Kim, 2015; Xu et al., 2017).

Confirmation

Confirmation in the ECT literature can be objective, inferred, or perceptual, among other variations. The theory behind objective confirmation is that differences in projected performance can be "objectively" assessed by an outside judge if customers can consistently assess a product or service's performance following a set of preset criteria. (Bhattacharjee, 2001). The degree to which users of an e-learning system agree that it lives up to their expectations will determine how happy they are with it. (Cheng, 2014). Confirmation can also affect a student's cognition, greatly increasing their enjoyment of the online learning environment and, directly or indirectly, their desire to keep learning. (Cheng, 2018).

The idea of confirmation has been extensively researched in the academic community for almost 20 years, and their findings have consistently supported its influence on online learning satisfaction and persistent intention. Cheng (2014, 2020) wrote several papers emphasizing the need for confirmation. Most of his academic thought focused on the correlation between affirmation and continuous use of learning systems, which was demonstrated from a variety of perspectives, including the support of educational system use, the acquisition of positive expectations, the satisfaction of the e-learning system, the influence of perception, and the increased effectiveness of the study. The expectation-confirmation model put forward in the literature by Joo and Choi (2016) highlighted that thanks to Bhattacharjee (2001) theoretical underpinnings, the idea of confirmation and the actual perception of using the learning system affects user satisfaction. Hence, two hypotheses are set:

Hypothesis 1: Confirmation has a significant impact on perceived usefulness.

Hypothesis 4: Confirmation has a significant impact on satisfaction.

Perceived usefulness

Students' pleasure and willingness to utilize e-learning services for continuing education and professors' readiness to use Blackboard in the future are all influenced by perceived usefulness. (Mouakket & Bettayeb, 2015). According to Cheng (2020), perceived usefulness impacts users' perceptions of how much using an e-learning platform would improve job performance. The utilization of e-learning platforms is facilitated. The willingness to use e-learning systems over time is influenced by perceived utility, according to Cheng (2020). The perceived utility must exist for persistent intent to exist. (Cheng, 2018).

The perceived utility significantly positively and favorably influenced learning attitudes-own performance to be improved. The study's findings are drawn from works by Islam et al. (2018) and Nagy (2018). According to recent research on cloud-based electronic systems, the user's experience with the system as a means of appreciating its value can also significantly support the improvement of their ongoing intentions. Even if the user's initial experience with the e-learning method falls short of their initial expectations, they can still alter their initial view psychologically and cognitively to sustain their intention to continue using it. (Tan & Kim, 2015; Xu et al., 2017). Therefore, the researcher hypothesizes that:

Hypothesis 2: Perceived usefulness has a significant impact on continuance intention.

Hypothesis 3: Perceived usefulness has a significant impact on satisfaction.

System Quality

System quality is crucial if e-learning systems are to be utilized. Instructional presence, cognitive presence, information quality, and system quality all impact how much a student enjoys blended learning. (Mirabolghasemi et al., 2021). The specific assertion made by Rughoobur-Seetah and Hosanoo (2021) is that the system's quality has a favorable impact on the benefits that students receive from it. The system, from the perspective of the learners, enhanced their performance as well as their learning. The effectiveness of e-learning services and systems has a considerable positive impact on student performance and favorably influences student satisfaction. (Hossain et al., 2020). Because of the system's superior quality, e-learning is now done much more effectively and with more user satisfaction. The students enjoy the online learning environment and wish to continue using it after graduation. (Chopra et al., 2019).

The research following Chopra et al. (2019) also covered the relationship between system quality and user benefits, and it was thought that system quality might raise users' happiness by boosting their net benefits. The following finding-that system quality is related to user advantages and will enhance the efficacy of their learning-was supported by Rughoobur-Seetah and Hosanoo (2021). According to Hassan et al. (2014), system quality can influence user happiness alone and in conjunction with information quality to increase it. The importance of system quality in network and blended learning was highlighted by Chen et al. (2015), Masrek and Gaskin (2016), and Mirabolghasemi et al. (2021), who noted that system quality has a major impact on satisfaction and is key to predicting satisfaction index. How effective a system positively affects how valuable e-learning is perceived. Moreover, positively impact how willing people are to accept e-learning for instruction and training (Rui-Hsin & Lin, 2018). Thus, this study can conclude a hypothesis:

Hypothesis 5: System quality has a significant impact on satisfaction.

Information Quality

The quality of the information greatly predicts user satisfaction with deep learning in the network. A high-quality system will be more widely used, have happier users, and provide greater net benefits. The three quality factors of system quality, service quality, and information quality should all positively impact usage intention, actual system usage, and user satisfaction. In contrast, intention, actual system usage, and user pleasure should all positively impact net benefit (Masrek & Gaskin, 2016). User satisfaction and the caliber of course information is closely related. High-quality materials can increase language learners' enjoyment (Mirabolghasemi et al., 2021). According to Rui-Hsin and Lin (2018), the usefulness and applicability of an information system's output to users is what they meant by information quality.

Information quality is the capacity of a system to provide comprehensive information that is both accurate and useful for learning. It addresses a variety of subjects, including correctness, thoroughness, security, usability, comprehensibility, dependability, and timeliness of system information output. Information quality is another word for the standard of the content. Nearly all e-learning research studies utilize the word "content quality" to refer to a dimension. Ppt, pdf, audio, and video are among the formats referred to as instructional materials in various studies. (Chopra et al., 2019). The study on language learners conducted by Mirabolghasemi et al. (2021) recognized the high correlation between the caliber of the content and the pleasure of previous researchers. Accordingly, a hypothesis is indicated:

Hypothesis 6: Information quality has a significant impact on satisfaction.

Service Quality

Masrek and Gaskin (2016) first proposed the idea. Quality of service is determined by the user's assessment of how well DL retrieves and delivers information. Previous studies have shown strong evidence to support the link between service quality and user satisfaction with DL, just as there is evidence to support the link between information quality and system quality. High-quality digital services must have several critical features, including accessibility, dependability, integration, and responsiveness. According to Cheng (2014) thesis, the information's quality significantly influences perceived usefulness, validity, and process. Moreover, mention how pleased the users of the e-learning system are there. Quality of service mostly refers to how consistently an institution provides customer service.

Electronic quality of service has replaced traditional quality due to technology, and researchers are once more evaluating its usefulness. (Rughoobur-Seetah & Hosanoo., 2021). Service quality is expected to have a favorable impact on satisfaction. (Albelbisi et al., 2021; Fan et al., 2021). According to Dehghan et al. (2014), offering great customer service will decrease brand loyalty and increase students' propensity to use online learning. The quality of the service has an impact on customer loyalty. The excellent caliber of service allows students to continue taking their chosen online courses. The following year, Chen et al. (2015) claimed that better service quality can increase user happiness by enhancing how effectively users comprehend the system. Consequently, a hypothesis is proposed:

Hypothesis 7: Service quality has a significant impact on satisfaction.

Satisfaction

Learning satisfaction is directly correlated with learning influence and motivation. A positive correlation exists between student satisfaction and academic accomplishment. Some users of e-learning platforms need more satisfaction. Moreover, they are pleased with the features of the complete e-learning system. If users love an e-learning system's services, they will want to continue using them. (Cheng, 2020). According to Ifinedo (2017), it is critical to enjoy blogging and think about how using blogging tools may influence student learning outcomes. Additionally, in higher education, satisfaction has a beneficial impact on students' use of wireless internet. (Islam et al., 2018). According to Nagy (2018), students' overall positive evaluation of their educational experience is called "learning pleasure."

Only once the learning activity is complete can satisfaction be measured. Contentment generally judges the discrepancy between prior expectations and actual achievement. When students are pleased with an e-learning system, it can alter how they feel about it and positively impact it (Cheng, 2020). The study's findings indicate that users' high satisfaction with the e-learning platform encouraged them to enhance their long-term motivation to learn it. If consumers are satisfied with the e-learning system, they are more inclined to use it again. Relevant factors include consumers' attitudes and emotional responses to the service or product. (Cheng, 2014). Researchers in the field of education have consistently shown that student happiness has a favorable impact. (Salimon et al., 2021). Subsequently, a hypothesis is developed:

H8: Satisfaction has a significant impact on continuance intention.

Continuance intention

When someone consistently disseminates knowledge, this fictitious possibility is called continuous intention. The information's usefulness and the system's usability considerably impact users' tendency to continue using the system. According to Cheng (2014), student's continued interest in online learning is determined by how useful, effective, and satisfied they feel the system is (Cheng, 2018). Specifically, Cheng (2020) asserted that professionals' continuing interest in e-learning positively impacts their perspectives on learning. They have heightened their motivation to continue integrating e-learning. It is believed that learner satisfaction, cognitive needs, and attitudes are the three key prerequisites for boosting students' persistent intention. (Hossain et al., 2020).

User satisfaction and perceived utility are the main factors influencing their continued intention. Social influence has a favorable and considerable impact on users' long-term intentions. (Wang et al., 2017). The impact of quality on the intention to learn continuously was confirmed by Joo and Choi (2016), which also suggested that the association between practicality and confirmation was substantial. Additionally, Mouakket and Bettayeb (2015) proposal regarding the role of perception in the continued use of learning systems, followed up by Wang et al. (2017) on user satisfaction and perceived usefulness, provided a significant reference in ensuring that persistent intent manifests a significant impact. These ideas helped researchers better understand the crucial component of users' continuance intention. How firmly was the fundamental effect value of persistent intent upheld?

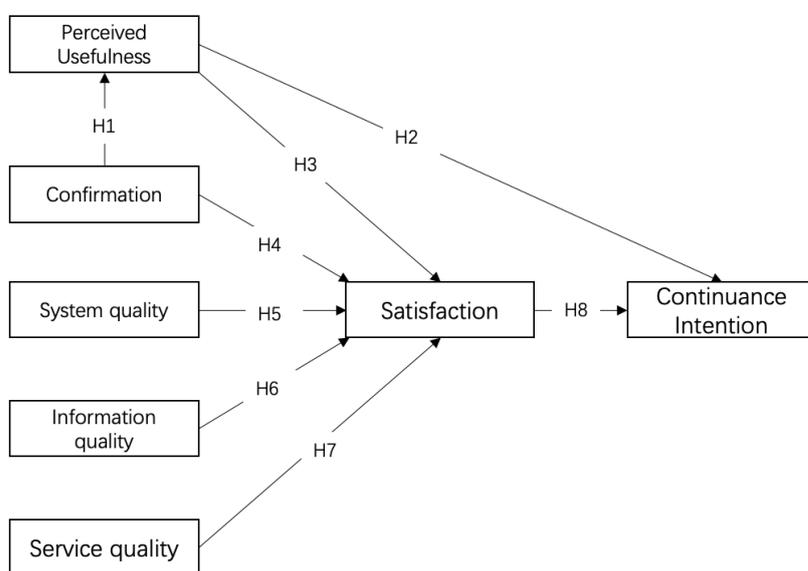
Research Methodology

Conceptual Framework

A conceptual framework identifies the academic study or research area the researcher wants to focus on. Due to the research objective is to investigate the critical factors impacting postgraduate students' satisfaction and continuance intention to use e-learning in the Beijing Film Academy, Beijing, China. This study comprises perceived usefulness, confirmation, satisfaction, system quality, information quality, service quality, and continuance intention., as shown in Figure 1.

Figure 1

Conceptual Framework



Note: Constructed by author

Research Design

The structured questionnaire used in this study has three parts: a screening question, demographic data, and scale items for all variables that will be observed. Furthermore, 26 scale items drawn from earlier literature were used to assess latent variables, including 4 items related to perceived usefulness, 4 items related to satisfaction, 3 items related to confirmation, 4 items related to system quality, 4 items related to service quality, 3 items related to information quality, and the final 4 items related to intention to continue. The researcher uses a five-point Likert scale to identify the factors influencing students' intention to continue with this doctoral thesis and their satisfaction with it. The method for scaling responses in survey research is most frequently utilized. (Burns & Bush, 2005).

Validity and Reliability Test

Prior to data collection, the content validity of the study was assessed using the index of item-objective congruence (IOC). All scale items were subjected to evaluation by three

experts, and items that received a score rating from 0.67 to 1.00 were considered valid. Furthermore, a pilot test consisting of 50 participants was conducted, and the internal consistency of the items was examined using Cronbach's alpha coefficient reliability test. The results indicated that all items demonstrated strong internal consistency, with a value of 0.7 or higher (Nunnally & Bernstein, 1994).

Research Population and Sample

Purposive sampling was conducted by selecting postgraduates majoring in directing, performing arts, photography, and screenwriting at Beijing Film Academy. The target population is N=567. The sample size was an important factor to consider to be crucial for empirical study and was suggested that between 400 and 800 samples would be the best sample size for model fit (Whitehead et al., 2015). In this study, the ultimate sample size was 500 students due to screening and quota selection, as shown in Table 1. The online questionnaires were distributed to students via the personnel of the target secondary college of Beijing Film Academy helped them complete the survey. As a result, 483 of the surveys were deemed legitimate after being collected, while 17 contained invalid data.

Table 1

Sample Units and Sample Size

Educational Background	Subjects	Population Size Total = 567	Proportional Sample Size Total = 500
Postgraduate	Director	304	268
	Performing	144	127
	Photography	78	69
	Scriptwriter	41	36

Source: Constructed by Author.

Data Analysis

After gathering data, the researchers entered it into a Microsoft Excel file for further quantitative statistical analysis utilizing programs like IBM SPSS, Jamovi, and Amos. It is important to note that the specific data analysis techniques may vary based on the research objectives, sample size, and statistical methods chosen. Researchers often employ statistical software such as SPSS, Excel, or specialized tools for data analysis, depending on the complexity of the analysis required. The researcher employed structural equation modeling (SEM) to investigate the correlations between latent variables as well as the aggregate, direct, and indirect effects of the suggested outcomes. Additionally, factor loadings, t-values, composite reliability (CR), average variance extracted (AVE), and discriminant validity were all evaluated using confirmatory factor analysis (CFA).

Demographics of Participants

Table 2 provides an overview of the complete demographic data for the 483 respondents. Male students comprised 48% of all participants, while female responses comprised 52%. Students majoring in directing made up 42.9% of them, actors made up

34.8%, photographers made up 13.5%, and screenwriters made up 8.9%. According to age, those between the ages of 23 and 24 made up 57.3% of the population, those between the ages of 25 and 26 made up 31.5%, and those over 26 made up 11.2%.

Table 2

The demographic data

Demographic and General Data (n=483)	Category	Frequency	Percentage
Gender	Male	232	48.0%
	Female	251	52.0%
Major	Director	207	42.9%
	Performing	168	34.8%
	Photography	65	13.5%
	Scriptwriter	43	8.9%
Age	23-24	277	57.3%
	25-26	152	31.5%
	Over 26	54	11.2%

Source: Constructed by Author.

Results and Discussion

In confirmatory factor analysis (CFA), the researcher specifies the number of latent (unobserved) factors and their indicators (observed variables) based on theoretical or conceptual considerations (Wang & Ahmed, 2004). Table 3 shows that Cronbach's alpha coefficient reliability test indicated that all items demonstrated strong internal consistency, with a value of 0.7 or higher (Nunnally & Bernstein, 1994), the average extracted variance (AVE) values were all greater than 0.50, the composite reliability (CR) values were higher than 0.70, and the factor loading values were greater than 0.50. (Hair et al., 2015).

Table 3

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

Variables	Source of Questionnaire	No. of Item	CA	Factors Loading	CR	AVE
Perceived usefulness (PU)	Nagy (2018)	4	0.721	0.723-0.808	0.823	0.538
Confirmation (CON)	Cheng (2020)	3	0.743	0.693-0.768	0.772	0.531
Satisfaction (SA)	Salimon et al. (2021)	4	0.784	0.723-0.781	0.838	0.564
System quality (SYQ)	Cheng (2012)	4	0.760	0.723-0.808	0.847	0.582
Information quality (INQ)	Masrek and Gaskin (2016)	4	0.809	0.728-0.752	0.828	0.546
Service quality (SEQ)	Bello and Abdullah (2021)	3	0.842	0.746-0.789	0.805	0.580
Continuance intention (CI)	Cheng (2020)	4	0.759	0.696-0.768	0.816	0.527

Source: Constructed by Author.

Table 4 illustrates the outcomes of the inquiry into and presentation of the discriminant validity. Neither of the correlations crossing any two latent variables was greater than 0.80, and the diagonally specified quantity is the AVE square root of the AVE. (Hair et al., 2015). The discriminant validity was therefore demonstrated using these quantitative data.

Table 4

Square roots of AVEs and correlation matrix

	SYQ	INQ	SEQ	CON	PU	SA	CI
SYQ	0.763						
INQ	0.246	0.739					
SEQ	0.354	0.255	0.762				
CON	0.180	0.211	0.255	0.733			
PU	0.337	0.302	0.271	0.331	0.751		
SA	0.461	0.437	0.468	0.359	0.457	0.726	
CI	0.527	0.446	0.433	0.342	0.482	0.545	0.729

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

In addition, all the applicable thresholds for the absolute fit indicators, such as CMIN/DF, GFI, AGFI, and RMSEA, as well as the incremental fit measurements, such as CFI, NFI, and TLI, match the requirements, as shown in Table 5. Because of this, each of the goodness of fit measurements used in the CFA exam was appropriate.

Table 5

Goodness of Fit for Measurement Model

Fit Index	Acceptable Criteria	Statistical Values
CMIN/DF	<3.00 (Hair et al., 2010)	1.356
GFI	>0.90 (Hair et al., 2010)	0.944
AGFI	>0.90 (Sica & Ghisi., 2007)	0.929
RMSEA	<0.05 (Pedroso et al., 2016)	0.027
CFI	>0.90 (Hu & Bentler, 1999)	0.981
NFI	>0.90 (Hooper et al., 2008)	0.933
TLI	>0.90 (Hair et al., 2010)	0.978
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.

Structural Equation Modeling (SEM)

After the CFA assessment, the structural equation model (SEM) verification was carried out in this study with the goodness of fit indices (Wright, 1920). Table 6 shows that the combined values of CMIN/DF, GFI, AGFI, CFI, NFI, TLI, and RMSEA were all over allowable limits after being corrected using AMOS version 24. The results show that the SEM's goodness of fit was established.

Table 6*Goodness of Fit for Structural Model*

Fit Index	Acceptable Criteria	Statistical Values
CMIN/DF	<3.00 (Hair et al., 2010)	1.709
GFI	>0.90 (Hair et al., 2010)	0.930
AGFI	>0.90 (Sica & Ghisi., 2007)	0.913
RMSEA	<0.05 (Pedroso et al., 2016)	0.038
CFI	>0.90 (Hu & Bentler, 1999)	0.962
NFI	>0.90 (Hooper et al., 2008)	0.913
TLI	>0.90 (Hair et al., 2010)	0.956
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.

Hypothesis Outcomes

According to the results shown in Table 7, the discussion are per follows:

H1: Confirmation → Perceived Usefulness: The standardized path coefficient (β) for this relationship was found to be 0.365, with a t-value of 6.140***, indicating a significant positive impact of confirmation on perceived usefulness. This hypothesis is supported.

H2: Perceived Usefulness → Continuance Intention: The path coefficient was 0.214, with a t-value of 3.933***, demonstrating a significant positive influence of perceived usefulness on continuance intention. This hypothesis is supported.

H3: Perceived Usefulness → Satisfaction: The path coefficient was 0.232, with a t-value of 4.544***, indicating a significant positive impact of perceived usefulness on satisfaction. This hypothesis is supported.

H4: Confirmation → Satisfaction: The path coefficient was 0.139, with a t-value of 2.517*, demonstrating a significant positive effect of confirmation on satisfaction. This hypothesis is supported.

H5: System Quality → Satisfaction: The path coefficient was 0.256, with a t-value of 5.032***, suggesting a significant positive influence of system quality on satisfaction. This hypothesis is supported.

H6: Information Quality → Satisfaction: The path coefficient was 0.250, with a t-value of 5.100***, indicating a significant positive impact of information quality on satisfaction. This hypothesis is supported.

H7: Service Quality → Satisfaction: The path coefficient was 0.254, with a t-value of 4.831***, demonstrating a significant positive influence of service quality on satisfaction. This hypothesis is supported.

H8: Satisfaction → Continuance Intention: The path coefficient was 0.497, with a t-value of 8.063***, indicating a significant positive impact of satisfaction on continuance intention. This hypothesis is supported.

Table 7*Summary of hypothesis tests*

Hypothesis	Standardized path coefficient (β)	t-value	Testing result
H1: Confirmation has a significant impact on perceived usefulness.	0.365	6.140***	Supported
H2: Perceived Usefulness has a significant impact on continuance intention.	0.214	3.933***	Supported
H3 Perceived Usefulness has a significant impact on satisfaction.	0.232	4.544***	Supported
H4: Confirmation has a significant impact on satisfaction.	0.139	2.517*	Supported
H5: System Quality has a significant impact on satisfaction.	0.256	5.032***	Supported
H6: Information Quality has a significant impact on satisfaction.	0.250	5.100***	Supported
H7: Service Quality has a significant impact on satisfaction.	0.254	4.831***	Supported
H8: Satisfaction has a significant impact on continuance intention.	0.497	8.063***	Supported

Note: *** $p < 0.001$, * $p < 0.05$

Discussion

According to the findings in Table 7, With a standardized path coefficient of 0.365 for this structural approach, H1 implies that confirmation is a key factor in determining its perceived usefulness. According to earlier studies, people's perceptions of the perceived value of technology in educational contexts were positively impacted by confirmation. (Limayem & Cheung, 2008).

With a standardized path coefficient of 0.214 in H2, the research demonstrates that perceived usefulness is one of the key components of continuation intention. Perceived usefulness may impact students' decision to continue utilizing online learning to increase the learning efficacy (Lin & Wang, 2012).

With a standardized path coefficient value of 0.232, the H3 statistical findings support the hypothesis that perceived usefulness significantly impacts contentment. Perceived usefulness does have a big and advantageous impact on satisfaction with online learning, according to numerous specialists (Joo & Choi, 2016).

Additionally, H4 demonstrates that confirmation and satisfaction have a 0.139 common coefficient value significant positive association. Clients' satisfaction with cloud computing services may be impacted by how effectively their expectations were met when they realized the desired results from their usage experiences (Xu et al., 2017).

Additionally, H5 confirms that system quality considerably impacts satisfaction in this survey; the standardized path coefficient value is 0.256. System quality has significantly predicted user satisfaction in various implementation situations for ISS (Nugroho & Prasetyo, 2018).

The standardized path coefficient value for H6 is 0.25, and it is seen that information quality and satisfaction are significantly correlated. Hassan et al. (2014) and Efilolu Kurt and Tingoy (2017) found a strong correlation between user happiness and the quality of materials information. High-quality informational resources may improve language learners' contentment.

With a standardized path coefficient value of 0.254, it can be shown that H7 shows a significant association between service quality and satisfaction. According to strong evidence from earlier studies, information, and system quality are among the aspects that contribute to patients' satisfaction with the quality of e-learning services (Chang, 2013).

Finally, H8 found a significant positive association between satisfaction and continuation intention, with a standardized path coefficient value of 0.497. The researcher established the relationship between satisfaction and persistent intention: The strong influence of satisfaction on continuance intention across various technologies, including electronic services, has been recognized in earlier research (Venkatesh et al., 2011).

Conclusion and Recommendations

Conclusion

This study investigates the factors impacting postgraduate students' satisfaction and continued intention with e-learning in Beijing, China. The conceptual framework presents seven hypotheses to demonstrate the interaction between perceived usefulness, confirmation, satisfaction, system quality, information quality, service quality, and continuation intention. 483 postgrads having prior exposure to online learning participated in the questionnaire replies in order to ascertain how these variables interacted. It is possible to tell whether data fit a given theoretically determined measurement model by using confirmatory factor analysis (CFA). Similarly, structural equation modeling (SEM) was employed to evaluate the link between latent and observable variables affecting satisfaction and test hypotheses. The results showed that confirmation has a significant impact on perceived usefulness. Perceived usefulness, confirmation, system quality, information quality, and service quality significantly impact satisfaction. Perceived usefulness and satisfaction significantly impact continuance intention.

Recommendations

In the rapidly evolving landscape of education, e-learning has emerged as a valuable tool for postgraduate students seeking to expand their knowledge and skills. The Beijing Film Academy, a prestigious institution in China, recognizes the importance of understanding the critical factors that impact postgraduate students' satisfaction and continuance intention to use e-learning. The researchers provide the following realistic recommendations for subsequent online education based on the findings of this quantitative survey.

To foster postgraduate students' engagement with e-learning, it is essential to emphasize the practical benefits it offers. By showcasing how e-learning can enhance their understanding of film studies and open doors to exciting career opportunities, the Beijing Film Academy can captivate students' interest. A streamlined confirmation process is crucial to instill confidence and minimize uncertainties for postgraduate students. Implementing an efficient system that

promptly acknowledges course registrations, assignment submissions, and other actions is paramount. Regular assessment of student satisfaction is pivotal to continually improving the e-learning experience. By conducting surveys, feedback sessions, and focus groups, the Beijing Film Academy can gain insights into students' concerns and expectations. Addressing these concerns promptly and offering personalized support will enhance students' satisfaction levels.

The technical aspects of the e-learning platform play a significant role in students' satisfaction. Continuous monitoring and improvement of system quality, including responsiveness, reliability, and compatibility across devices, will ensure a smooth and uninterrupted learning experience. Regular maintenance and updates should be conducted to address performance issues and bolster security measures. High-quality, up-to-date, and relevant course materials are essential for postgraduate students' engagement and satisfaction. The Beijing Film Academy should establish rigorous quality control processes to ensure accuracy and credibility in the information shared through the e-learning platform. Encouraging student participation in content creation will enrich the platform's information quality, allowing students to contribute their knowledge and insights.

Providing excellent service to postgraduate students is vital in the e-learning environment. The Beijing Film Academy should invest in training instructors and support staff to develop their interpersonal skills and responsiveness to student needs. Clear communication channels should be established for students to seek guidance and assistance. Proactive support and engagement opportunities, such as virtual workshops or collaborative projects, will foster a sense of community and support among postgraduate students.

Continued engagement with e-learning depends on demonstrating its ongoing value to postgraduate students. By highlighting the benefits of continued participation and showcasing advanced courses, workshops, or collaborative projects, the Beijing Film Academy can sustain students' interest. Regular monitoring and analysis of student usage patterns, feedback, and performance data will enable data-driven improvements, ensuring the e-learning platform evolves in line with students' needs and preferences.

Limitations and Further Study

Only the Beijing Film Academy population and sample were used in this study's limitations, and the conceptual framework only included seven latent variables. Two perspectives can be investigated for further investigation: adding other areas of China to the research's geographic focus. Different technological acceptance theories, like theory of reasoned action (TRA) theory of planned behavior (TPB), the unified theory of acceptance and use of technology (UTAUT) etc., can support the development of the research framework.

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