Research on the Satisfaction and Continued Intention to Use Digital Libraries of Undergraduates in Chongqing, China

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Abstract

Purpose: This study aims to investigate the factors impacting satisfaction and continued intention of undergraduate students to use the digital library system in Chongqing, China. The conceptual framework proposes a causal relationship between system quality, perceived ease of use, usefulness, confirmation, information quality, satisfaction, continued intention. **Research design, data, and methods:** In this study, a quantitative method (n=500) was used to distribute questionnaires to undergraduates in several universities in Chongqing. Students majoring in English, Finance, Journalism, and Education from representative schools in Chongqing were selected for non-probability sampling for judgmental, quota, and convenience sampling for data collection. Structural Equation Model (SEM) and Confirmatory Factor Analysis (CFA) were used for data analysis, which involved data analysis such as model fitting, reliability, and validity. **Results:** The results show that system quality, perceived ease of use, and information quality significantly impact satisfaction. Furthermore, satisfaction significantly impacts continued intention. Nevertheless, usefulness and confirmation have no significant impact on satisfaction. **Conclusions:** Colleges and universities should continuously improve the service level, system use, and resource quality of digital libraries, improve the management level of digital libraries in colleges and universities, and enhance students' satisfaction and loyalty.

Keywords: Confirmation, Information Quality, Satisfaction, Continued Intention, Digital Library

JEL Classification Code: E44, F31, F37, G15

1. Introduction

In the past decade, the rapid development of digital technology has affected almost every aspect of modern life. The emergence of digital technologies and the digital economy affects various business processes and activities (Nambisan et al., 2016). DL has been a remarkable development in recent years, where users can access digital information resources (Sudatta et al., 2006). Evaluating the quality of a digital library depends on many factors. From the digital economy perspective, Digital Libraries are very important. The China Digital Library Project is a major system project that spans regions, departments, and industries. This is an innovative project supported by a

variety of high-tech technologies. Its goal is to form a large-scale, high-quality Chinese digital resource library online and provide services to the whole country and the world through the national backbone communication network; the overall technology conforms to the international mainstream technology. In addition, with the rapid development of digital technology, traditional paper printing and handwritten resources can no longer meet the diverse needs of readers. It has become an inevitable trend for traditional public libraries to develop toward digitization and information (Zhen, 2010).

After digitization, public libraries have many information resources and can integrate text, video, image, and other information resources in front of readers through distributed digital media means on the network so that more readers can

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learn to use various resource means to complete the acquisition of resources. At the same time, it can also digitize many traditional resource information such as books, periodicals, maps, manuscripts, and images and seek more resource storage methods and resource delivery strategies for massive resources (Pomerantz & Marchionini, 2007).

The digitalization of the library not only affects the service mode of readers but also affects the collection construction, library operation, and library evaluation system to varying degrees. For example, the digitization of information resources has brought changes to the business work of libraries. The collection, collation, and processing of information resources have changed from the contact between people and books to the contact between people and computers and between people and the internet. Traditional business models are adapting accordingly. This study is the first analysis of digital library services in colleges and universities in Chongqing. Its main purpose is to provide evidence for the need for traditional library reforms to improve students' information literacy (Mutawali et al., 2023).

The proliferation of digital libraries in educational institutions presents an opportunity to enhance learning experiences. However, despite the increasing adoption of these systems, there remains a gap in understanding the factors that influence undergraduate students' satisfaction and their intention to continue using digital library systems. Therefore, this study aims to investigate the factors impacting satisfaction and continued intention among undergraduate students utilizing the digital library system in Chongqing, China.

While there is existing literature on digital library systems and user satisfaction, there is a noticeable gap concerning their application specifically among undergraduate students in Chongqing, China. Previous studies have often focused on general user satisfaction without delving into the specific factors influencing satisfaction and continued intention in this demographic. Additionally, there is limited research that explores the interrelationships between system quality, perceived ease of use, usefulness, confirmation, information quality, satisfaction, and continued intention within the context of digital library systems in Chongqing, China.

Understanding the factors that impact undergraduate students' satisfaction and continued intention to use digital library systems in Chongqing, China is crucial for several reasons. Firstly, it provides insights that can inform the design and improvement of digital library systems to better meet the needs and expectations of users, thereby enhancing their effectiveness and usability. Secondly, by identifying factors that influence satisfaction and continued intention, educational institutions can develop strategies to promote the adoption and sustained use of digital library systems,

ultimately contributing to the advancement of education and research. Finally, this study contributes to the academic literature by expanding our understanding of user behavior and satisfaction within the context of digital library systems, particularly among undergraduate students in Chongqing, China.

2. Literature Review

2.1 System Quality

According to a study conducted by DeLone and McLean (2003) and Roca et al. (2006), system quality refers to the overall functional characteristics of an information system. The quality of an information system is measured in terms of its ease of use, flexibility, reliability, and data quality. Balog (2011) proposed that system quality refers to the user's perception of the performance of digital library in retrieving and delivering information. Balog divides the factors that reflect the system's quality into four aspects: availability, reliability, effectiveness, and efficiency. In the field of information systems research, system quality is considered the key to determining the use of information systems. Omotayo and Haliru (2020) reported that given the system structure and technical performance of the digital library, the system quality significantly impacts individual users' willingness to choose and use the digital library system.

Xu and Du (2021) believe that system quality is an important performance indicator of digital library. System quality reflects the stability of the university's digital library website system, the effectiveness of navigation, and the clarity of the web page layout, which can greatly improve the User experience. System quality characteristics used by information systems are response time, accuracy of output, stability of the system, security of the system, and presentation format. These findings were found by Trice and Treacy (1988), Ali and Money (2005) and Masrek (2008). System quality plays a very important role in the empirical research. In the study, system quality has a stable predictive role in measuring users' perceived usefulness (Lederer et al., 2000). In the environment of investigation and research, system quality is an important factor affecting the user's trust. High-quality system quality can improve the user's trust, while low-quality system will affect the user's trust, which significantly impacts the technology adoption environment (Lee & Chung, 2009). Hence, a hypothesis is developed:

H1: System quality has a significant impact on satisfaction.

2.2 Perceived Ease of Use

The concept of perceived ease of use was presented by Davis (1989). It states that people believe using a certain

information system will not require mental and physical exertion. Perceived ease of use is the effort of individual users when using certain technology and is the real feeling of individuals in the process. Davis (1989) and Venkatesh et al. (2003) defined the perceived ease of use as the level at which people believe that using a particular technology would not require much mental and physical effort. Bandura (1986) proposed in his research that the development of social cognition coincides with this. In this theory, perceived ease of use is described as the expected effect of the use process, and perceived usefulness is described as the prediction and expected result of behavioral intention. Technology Acceptance Model (TAM) aims to encourage individuals to share their positive views toward specific techniques when they learn how easy and useful certain technologies are (Jabeen et al., 2019). Muhammad et al. (2019) defined the concept as the degree to which people think a particular system is easy to use. Regarding technology, TAM encourages users to articulate a favorable view of a specific technique after learning its usefulness. The perceived ease of use of a particular technique is measured by the degree to which people think it is effortless (Masrek & Gaskin, 2016). Hence, a hypothesis is developed:

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

2.3 Usefulness

Perceived usefulness refers to how an individual believes DL can improve academic performance (Davis, 1989; Jeong, 2011; Thong et al., 2002). Park et al. (2009) explained that the perceived usefulness of Online Library Resources (OLRs) was determined by the degree to which people believe using them would improve their performance. The usefulness refers to users' perceptions of how technology would improve performance (Zha, 2015). Matusiak (2012) claimed that one of the most important factors influencing digital resource use is their perceived usefulness. Her research revealed that the perceived usefulness of these resources had a significant effect on the intention of users to use them.

In order to improve the user's productivity and the efficiency and performance of tasks, Ndubisi et al. (2003) believed that relevant systems and technical assistance could be used in the work scenario. In specific practice, combined with the expectation confirmation theory of information system continuity, perceived usefulness is also one factor that affects the information system's willingness to use continuity. With the development of digital technology, the Internet profoundly impacts all aspects of work, life, and learning. Lin (2007) put forward in the research that perceived usefulness in digital technology means that individuals believe that using the Internet can obtain the information and related services they need and exchange

views and interact on the Internet platform to improve their performance. Hence, two hypotheses are developed:

H3: Usefulness has a significant impact on satisfaction.

H4: Usefulness has a significant impact on continued intention.

2.4 Confirmation

Bhattacherjee (2001) and Thong et al. (2006) said that the level of users' perception of the conformity between their expectations of information technology and the system's actual performance was known as the confirmation. Lee (2010) and Lin and Wang (2012) proposed that the research is based on the Expectation- A large number of studies in the e-learning environment have verified the Confirmation Model (ECM). When the user's real learning experience in the e-learning environment differs from the expected experience before use, the rational user will correct the difference by changing his expected experience. Therefore, this study believed that the confirmation of the expectation of the learning system would affect the user's perceived usefulness of the system use and affect the user's satisfaction with the system use. The study revealed that high-level habits in an e-learning environment can hinder this ability (Joo & Choi, 2016). The ECM has modified the concept of expectation confirmation. It states that the level of satisfaction that users experience when using an information technology and system is related to their use expectations. The study assumed that the user's continuous use and use intention depend on the user's post-use expectation, confirmation degree, and user satisfaction (Cheng, 2014). Hence, two hypotheses are developed:

H5: Confirmation has a significant impact on usefulness.

H6: Confirmation has a significant impact on satisfaction.

2.5 Information Quality

DeLone and McLean (2003). Roca et al. (2006) and Tsakonas and Papatheodorou (2008) claimed that information quality evaluates the content quality of the information system. Many scholars and researchers have recognized the importance of information quality as a key factor in assessing successful computer-based Information Systems (IS) (Masrek & Gaskin, 2016). In some studies, information quality is also defined as an information system's output, which can be either online reports or screens (Yan et al., 2014).

In an empirical study, Tsakonas and Papatheodorou (2008) noted that the quality of information systems used by libraries should be evaluated based on the following factors: relevance, timeliness, and reliability. The information should also be related to the users' needs and include sources from various branches of learning. Huang et al. (2015) evaluated

the information quality of the evaluation system by considering its reliability, integrity, and relevance. They also investigated its content quality, which involves its ability to provide correct and understandable information. Hence, a hypothesis is developed:

H7: Information quality has a significant impact on satisfaction.

2.6 Satisfaction

The collation of literature shows that the meaning of satisfaction is a user's favorable feelings towards his or her usage of online library resources (Bhattacherjee, 2001; Bhattacherjee & Premkumar, 2004; Clerfeuille et al., 2008; DeLone & McLean, 2003; Roca et al., 2006; Thong et al., 2006).

The literature review also states that satisfaction is related to users' positive feelings about using a library resource online (Seddon, 1997). In the context of DL, Theng et al. (1999) defined satisfaction as the feeling of being able to complete a task successfully with the help of DL. Studies believe satisfaction is related to users' emotional responses as they experience a service. This is because the interaction between them and the providers is the main factor influencing their satisfaction (Yachin, 2018). The researchers also noted that satisfaction is a cumulative feeling that users experience when using a service or interacting with a DL. It is the gap between their expectations and the service's quality. The study additionally found that users' favorable feelings about using OLRs influenced their satisfaction (Seddon, 1997).

According to Thong et al. (2002), getting access to DL is the most important step in fully utilizing it. User loyalty has been acknowledged as a vital factor in maintaining a competitive edge for service organizations. Due to the availability of free resources, it is now more important than ever that libraries compete with other providers (Lee & Cunningham, 2001). Hence, a hypothesis is developed:

H8: Satisfaction has a significant impact on continued intention.

2.7 Continued Intention

The intent of the act can be interpreted in various ways. For instance, the TAM suggests that an individual's actual use of a technology is influenced by their behavioral intention to use it (Sanjeev, 2022). This method can be useful in identifying the most effective technology for a person's needs (Davis et al., 1989). The intensity of this use motivation will vary due to differences in previous attitudes and beliefs because of the technical form of starting to use a certain technology or service (Dehghani, 2018; Venkatesh et al., 2003). Cigdem and Ozturk (2016) believed that

behavioral intention refers to whether an individual user shows the purpose of a specific behavior when facing a certain product or service in the future, that is, whether the user is willing to choose a product or service.

In the study, Im et al. (2011) proposed that use intention is not a simple psychological behavior but comes from a broader behavioral intention model. The behavioral intention model is the basic motivation and foundation of several behavior-intention-action models, and these models have the same basic concepts and connections in essence. Dehghani (2018) believes in his research that, as the research on the definition in recent years shows, it is not very important to clearly distinguish the use intention, initial use intention, and continuous use intention. In the use intention, after the first use, individuals will be encouraged and guided to continue to use technology and continue to use it as much as possible.

Some studies also suggest that in the specific use process of technology and application, having a positive personal attitude can improve the user's perception of innovative technology, thus stimulating the user's recognition of new technology and further promoting the individual's use behavior (Faqih & Jaradat, 2015). That is to say, users with high intentions are likely to become adopters of products and services (Leong et al., 2013).

3. Research Methods and Materials

3.1 Research Framework

Adom et al. (2018) believe research paths, related variables, and underlying theories can be systematically described in a conceptual framework. The conceptual framework explains the relationship between various factors and helps better understand the theoretical sources and structure of the research framework. Camp (2001) believed in his research that a conceptual framework is a structure that can explain the natural evolution process of the phenomenon studied by the researcher.

The study utilizes different research frameworks to enhance and support the conceptual structure of the investigation. This conceptual framework includes seven variables put the first conceptual framework for reference forward: SQ, PEU, PU, CO, IQ, SA, and CI. Referring to the previous research, the research on the relationship between service quality and cognitive rejection and user satisfaction needs strong and complete evidence, so the assumption of the relationship between service quality and cognitive rejection and user satisfaction is deleted in this study. In sorting out and summarizing previous studies, it has been found that most empirical studies believe IQ, SQ, PU, PEU, SA, and CI have significant correlations.
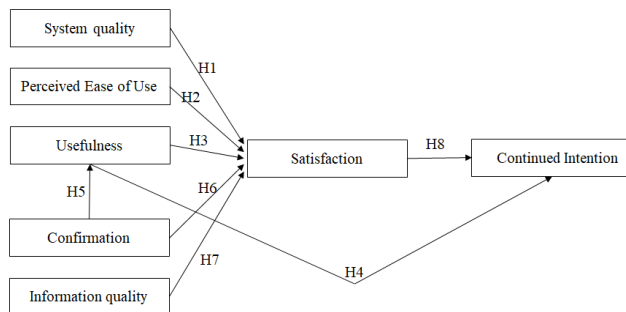
Figure 1: Conceptual Framework

H1: System quality has a significant impact on satisfaction.
H2: Perceived ease of use has a significant impact on satisfaction.
H3: Usefulness has a significant impact on satisfaction.
H4: Usefulness has a significant impact on continued intention.
H5: Confirmation has a significant impact on usefulness.
H6: Confirmation has a significant impact on satisfaction.
H7: Information quality has a significant impact on satisfaction.
H8: Satisfaction has a significant impact on continued intention.

3.2 Research Methodology

The researchers used multi-stage sampling techniques of quantitative probability and non-probabilistic methods to reach target respondents. This study aimed to analyze survey respondents and sampling procedures, research tools, questionnaires, validity and internal consistency reliability of research tools, data collection or collection procedures, CFA, goodness of fit or model fitting, and SEM. Collins et al. (2006) point out that research design tools are used for data analysis. Research design is the glue that holds all relationships with research together. In other words, it is a strategy for proposed research work (Akhtar, 2016). In the specific research practice, the most commonly used research methods are exploratory, causal, and descriptive. In addition, information requirements, measurements, and scales need to be clearly stated in specific research practices. Collins et al. (2006) also identified the sampling procedure, sample size, and data processing plan as the basic features of the three study designs.

To assess the validity and reliability of the questionnaire, we employed the Cronbach's Alpha method. The process involved an initial evaluation comprising both an examination of Item-Objective Congruence (IOC) and a pilot test. In the IOC analysis, three experts were enlisted to rate each scale item, with all items achieving a rating of 0.6 or higher. Furthermore, we conducted a pilot test with 50 participants and calculated the reliability using the Cronbach alpha coefficient. The findings indicated that all items in the

questionnaire demonstrated robust internal consistency, with a reliability score exceeding 0.7 (Sarmento & Costa, 2016).

The researchers then sent questionnaires to the target respondents and received 500 valid responses. The collected data were analyzed using SPSS AMOS 26.0. Using the CFA convergence accuracy test and verify. The model fit degree is calculated by the whole test of the given data to ensure the validity and reliability of the model. After obtaining the results of the data measurements, the researchers applied SEM to examine the effects of the variables.

3.3 Population and Sample Size

The target population refers to the group or individual with the same characteristics associated with the research in the study (Weathington et al., 2012). In order to carry out data statistics and research more effectively and accurately, this study selected six colleges and universities in Chongqing as sample sources. The six universities all have undergraduate majors in English major, Education major, Finance major, Journalism and Communication major, and all have current students. In order to better select samples and obtain true, accurate, and scientific analysis results, this study selects undergraduates who studied these majors in six universities in 2021. Kline (2016) stated structural equation modeling require minimum sample size of 200. Therefore, this study aims to collect the data of 500 participants for analysis.

3.4 Sampling Technique

A study by Ackoff (1953) has indicated that the sampling technique involves using probability or non-probability sampling methods to narrow down the scope of a large population to satisfy the purpose of the study. Saunders et al. (2007) pointed out that the non-probabilistic sampling method has certain subjectivity, which cannot satisfy the public's equal opportunity to be investigated. Etikan and Bala (2017) show that non-probabilistic sampling does not publish a bias as to whether any object has a chance of being included in the test sample. The non-probabilistic sampling method is used to select the survey sample because the selected sample population is not specified.

The implementation process of this study mainly includes three steps: The first stage is the judgmental sampling (non-probability sampling) for the students of Chongqing colleges and universities, which reflects the application and development status of the digital libraries. The second stage is quota sampling, which calculates the number of professional students conducting research. The third stage uses a combination of judgment sampling and convenience sampling (non-probability sampling) to select target students who have used the digital libraries. Then, the staff distributes the questionnaires both offline and online.

Table 1: Sample Units and Sample Size

Four Main Subjects	Population Size	Proportional Sample Size
English students	1373	205
Finance students	650	171
Journalism and Communication students	411	82
Education	216	42
Total	**2650**	**500**

Source: Constructed by author

4. Results and Discussion

4.1 Demographic Information

The demographic target was 500 participants, summarized in Table 2. Among the surveyed students, 41% majored in English, 34.2% in Finance, 16.4% in Journalism and Communication, and 8.4% in Education. Male respondents accounted for 51% and female respondents 49%, as shown in Table 2.

Table 2: Demographic Profile

Demographic and General Data (N=500)		Frequency	Percentage
Subjects	English education students	205	41%
	Finance students	171	34.2%
	Journalism students	82	16.4%
	Education	42	8.4%
Gender	Male	255	51%
	Female	245	49%

Source: Constructed by author

4.2. Confirmatory Factor Analysis (CFA)

Fornell and Larcker (1981) proposed in their study that factor loads show values greater than 0.5 and P-values less than 0.05. The structural reliability in Table 3 is greater than 0.7, and the extracted mean variance is greater than 0.4. The findings indicated that all items in the questionnaire demonstrated robust internal consistency, with a reliability score exceeding 0.7 (Sarmento & Costa, 2016). Therefore, all the estimates in the study are significant.

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
System Quality (SQ)	DeLone and McLean (2003)	4	0.796	0.635-0.745	0.798	0.498
Perceived Ease of Use (PEU)	Davis (1989)	3	0.821	0.758-0.801	0.822	0.606
Usefulness (USE)	Davis (1989)	4	0.839	0.747-0.757	0.840	0.567
Confirmation (CON)	Bhattacherjee (2001)	3	0.793	0.744-0.825	0.798	0.569
Information Quality (IQ)	DeLone and McLean (2003)	4	0.835	0.726-0.778	0.836	0.560
Satisfaction (SA)	DeLone and McLean (2003)	4	0.835	0.714-0.771	0.835	0.559
Continued Intention (CI)	Sanjeev (2022)	4	0.801	0.656-0.731	0.802	0.504

Furthermore, the results presented in Table 4 demonstrate that all the crucial thresholds for the absolute fit indicators, including CMIN/DF, GFI, AGFI, and RMSEA, as well as the incremental fit measures such as CFI, NFI, and TLI, meet the required criteria. Consequently, all of these goodness-of-fit measures employed in the confirmatory factor analysis (CFA) assessment indicate a satisfactory fit.

Table 4: Goodness of Fit for Measurement Model

Fit Index	Acceptable Criteria	Statistical Values
CMIN/DF	< 5.00 (Al-Mamary & Shamsuddin, 2015; Awang, 2012)	1.447
GFI	≥ 0.85 (Sica & Ghisi, 2007)	0.942
AGFI	≥ 0.80 (Sica & Ghisi, 2007)	0.927
NFI	≥ 0.80 (Wu & Wang, 2006)	0.944
CFI	≥ 0.80 (Bentler, 1990)	0.982
TLI	≥ 0.80 (Sharma et al., 2005)	0.979
RMSEA	< 0.08 (Pedroso et al., 2016)	0.030
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, NFI = Normed fit index, CFI = Comparative fit index, TLI = Tucker-Lewis index and RMSEA = Root mean square error of approximation.

Discriminant validity, as a subtype of validity, ensures that a structure is evaluated in an empirically unique way and shows phenomena that other estimates cannot show (Hair et al., 2010). Discriminative constructs validate disagreements and relationships between variables and examine relationships between variables, meaning it is possible to discern the absence of irrelevant and unexpected constructs in the model. There is a good relationship between strong and convergence construct validity and a significant correlation between discriminant construct validity (Studenmund, 1992).

Table 5: Discriminant Validity

	SQ	PEU	USE	CON	IQ	SA	CI
SQ	0.706						
PEU	0.639	0.778					
USE	0.634	0.586	0.753				
CON	0.612	0.580	0.739	0.754			
IQ	0.684	0.661	0.666	0.622	0.748		
SA	0.638	0.637	0.637	0.589	0.706	0.748	
CI	0.626	0.632	0.684	0.642	0.685	0.666	0.710

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 was used to test the fitting degree of the model, estimated factor structure, and hypothetical relationship. The goodness of fit indices for the Structural Equation Model (SEM) is measured as demonstrated in Table 6. The model fit measurement should not be over 5 for the Chi-square/degrees-of-freedom (CMIN/DF) ratio, and GFI and CFI should be higher than 0.8 as recommended (Al-Mamary & Shamsuddin, 2015; Awang, 2012;). The calculation in SEMs and adjusting the model by using SPSS AMOS version 26, the results of the fit index were presented as a good fit, which are CMIN/DF = 4.086, GFI = 0.858, AGFI = 0.800, NFI = 0.858, CFI = 0.888, TLI = 0.854 and RSEA = 0.079, according to the acceptable values are mentioned in Table 6.

Table 6: Goodness of Fit for Structural Model

Index	Acceptable	Statistical Values Before Adjustment	Statistical Values After Adjustment
CMIN/DF	< 5.00 (Al-Mamary & Shamsuddin, 2015; Awang, 2012)	5.176	4.086
GFI	≥ 0.85 (Sica & Ghisi, 2007)	0.793	0.858
AGFI	≥ 0.80 (Sica & Ghisi, 2007)	0.750	0.800
NFI	≥ 0.80 (Wu & Wang, 2006)	0.791	0.858
CFI	≥ 0.80 (Bentler, 1990)	0.823	0.888
TLI	≥ 0.80 (Sharma et al., 2005)	0.803	0.854
RMSEA	< 0.08 (Pedroso et al., 2016)	0.091	0.079
Model Summary		Not in harmony with Empirical data	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, NFI = Normed fit index, CFI = Comparative fit index, TLI = Tucker-Lewis index and RMSEA = Root mean square error of approximation.

4.4 Research Hypothesis Testing Result

According to the research, the model calculates each variable's significance based on its regression weight and R2 variance. The results in Table 7 assume that six hypotheses

are supported by the significance $p < 0.05$, among which the significance does not support two hypotheses. The influence of usefulness on continued intention is 0.471, information quality on satisfaction is 0.689, confirmation on usefulness is 0.920, satisfaction on continued intention is 0.579, and system quality on satisfaction is 0.563. Then, the impact of confirmation on satisfaction is -0.041, usefulness on satisfaction is 0.350, and satisfaction on continued intention is 0.579.

Table 7: Hypothesis Results of the Structural Equation Modeling

Hypothesis	(β)	t-Value	Result
H1: SQ→SA	0.563	8.205*	Supported
H2: PEU→SA	0.350	7.743*	Supported
H3: USE→SA	0.350	1.791	Not Supported
H4: USE→CI	0.471	7.820*	Supported
H5: CON→USE	0.920	15.103*	Supported
H6: CON→SA	-0.041	-0.209	Not Supported
H7: IQ→SA	0.689	6.618*	Supported
H8: SA→CI	0.579	8.342*	Supported

Note: * p<0.05
Source: Created by the author

The result from Table 7 can be refined that:

H1 proves that system quality is one of the key drivers of satisfaction in using DLs and reveals that the standard coefficient value in the structural path is 0.563. Namahoot and Laohavichien (2015) pointed out that improving the system quality can provide users with more convenient, fast, and privacy protection services. **H2** shows that the analysis results support the hypothesis that perceived ease of use significantly impacts satisfaction, and the standard coefficient value is 0.350. In information digitization, research shows that perceived ease of use is the decisive factor affecting satisfaction (Roca et al., 2006; Yu et al., 2012). Perceived ease of use is a critical factor in the satisfaction of information digitization services (Glerum, 2007; Islam, 2011). The **H3** hypothesis shows that the effect of usefulness on satisfaction does not reach the cutoff point, and the standard coefficient value is 0.350. The **H4** hypothesis shows that usefulness has the most prominent effect on continued intention, and the standard coefficient value is 0.471. Liaw and Huang (2003) proposed in their research that, in the conceptual framework of TAM, users' perceived usefulness is the basic reason that affects the attitude towards use and the actual use and behavioral intention of users in the actual use process. The analysis results of **H5** support the hypothesis that confirmation has the most significant impact on usefulness, with a standard coefficient value of 0.920. **H6** proves that the effect of confirmation on user satisfaction is not obvious enough, revealing that the standard coefficient value in the structural

path is -0.041. **H7** proves that information quality is one of the key drivers affecting user satisfaction, revealing that the standard coefficient value in the structural path is 0.689. Huang et al. (2015) research shows that the information quality of mobile digital library systems has an important impact on perceived usefulness and satisfaction. The analysis results of **H8** support the hypothesis that user satisfaction significantly impacts continued intention, and the standard coefficient value is 0.579. SA will affect users' willingness to choose or use information technology or systems (Cronin et al., 2000).

5. Conclusion and Recommendation

5.1 Conclusion and Discussion

This research paper analyzes the relationship between SA and CI using university DLs in Chongqing, China and analyzes their mutual influence. This study presents eight hypotheses as a conceptual framework to investigate how SQ, PEU, CON, and IQ significantly impact USE, SA, and CI. The questionnaire was distributed to students from six representative universities in Chongqing as target samples. Through data analysis, this paper discusses the influencing factors of SA and CI in using DL. Conduct CFA to measure and test the validity and reliability of the conceptual model. Therefore, SEM was used to analyze the influencing factors of SA and CI.

The study describes its findings as follows.

First, compared with the assumed relationship between other variables, CON shows that it has the most prominent influence on USE. Second, IQ has a significant impact on SA and scores second. Joo and Choi (2016) it is supported that the SQ in DLs is one of the important motivations for CI. In addition, in the study, the quality of the construction system positively impacts SA. Third, SA has a significant impact on CI. Some studies suggest that SA with online link-sharing tools is an important factor affecting users' willingness to continue using them (Sun et al., 2017). Fourth, SQ is shown to have a certain impact on SA. The SQ of DL has a significant impact on the use of college students. It affects college students' satisfaction evaluation of DL and their willingness to use DL (Omotayo & Haliru, 2020). Fifth, compared with the assumed relationship between other variables, USE shows that it has a certain influence on CI. Sixth, PEU proved to have an important impact on SA, scoring third. In Cheng (2014) research, it is proposed that the confirmation of users' expectations of DLs is the premise of PEU, which affects SA.

Finally, USE and CON showed a negative correlation on the influence of SA, and the hypothesis between them for parameters could not be supported. This study can conclude a positive correlation between SQ, PEU, IQ, SA, and CI. However, the USE, CON, and SA hypothesis are invalid. However, there is a positive correlation between CON and USE and between USE and CI, and the theoretical framework model of this study has been verified and supported. To sum up, the goal of this study has been achieved that SQ, PEU, USE, CON, and IQ are the key influencing factors of SA and CI in the student's use of the DL system in Chongqing. First, usefulness was shown to be the factor that had the highest score on student satisfaction. This supports the relevant conclusions of previous studies. Students can feel the benefits of using the DL and feel significant satisfaction with the DL, which can ensure their expectation of continuous use.

5.2 Recommendation

The researchers found that the key factors affecting the SA and CI of the DL of colleges and universities in Chongqing are SQ, PEU, USE, CON, and IQ. Among them, SQ, PEU, and IQ affect SA through SA and CI through SA. In addition, CON directly affects CI through its influence on USE. Therefore, it is suggested that the University DL in Chongqing develop and improve the user experience in these aspects to develop the DL. For SQ, colleges and universities should invest more in improving DLs' system structure and content quality to improve user satisfaction. For PEU, DL design and use must be improved from the users' perspective, facilitating their learning and use through innovative and student-centered design solutions. For USE, DLs need to improve the type and quality of resources and the USE of resources according to users' needs. For CON, students' cognition of DL is improved through information literacy education for users, and CON is improved through users' recognition of DL. For IQ, improve the quality control of DL resources and strictly screen the content and text quality of resources entering the collection. Such as integrating the National Center for Philosophy and Social Sciences Documentation, the Copy materials of the Renmin University of China, the Resource Platforms on Periodicals Database, the National Library Reference and Consultation Alliance, the Academic Resources, and so on, promote high-quality construction of DLs. In summary, the research results are conducive to promoting the construction of university DLs, promoting the full complementarity of academic resources, improving the functional development of digital resources, and playing a role in developing science, technology, and social progress.

5.3 Limitation and Further Study

The limitation of this study is that students from six representative universities in Chongqing are selected as the

research objects, and there are certain limitations in population selection. For example, different analysis results may appear when investigating higher education institutions in different countries, cultural backgrounds, sizes, and regions. In the future, other structures that potentially affect user satisfaction and willingness to continue use can be studied, such as behavioral attitudes, service quality, subjective norm, behavioral control, cognitive absorption, and so on. In addition, future research could extend the idea that persistent use intentions can influence behavior, i.e., user behavior changes resulting from such use intentions. It can provide a more effective and perfect development strategy for DL construction in colleges and universities.

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