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

Predicting Social Science Undergraduate's Behavioral Intention to Use Online Library's Full-Text Resources in Chengdu

Wenyuan Zhang*

Received: January 31, 2024. Revised: March 2, 2024. Accepted: February 18, 2025.

Abstract

Purpose: This study analyzed the factors affecting the behavioral intention to use of full-text digital library resources by social sciences students to provide a new perspective for constructing digital libraries in Chinese colleges and universities. The key variables are system quality, information quality, perceived ease of use, perceived usefulness, subjective norms, attitude, and behavioral intention to use a digital library. **Research design, data, and methodology:** The study selected 500 undergraduate students with social science disciplinary backgrounds from 10 universities in Chengdu as research subjects. the Index of Item-Objective Congruence (IOC) and Cronbach's Alpha coefficient were conducted to ensure the validity and reliability before the data collection. Confirmatory factor analysis and structural equation modeling were used to verify the validity of the hypotheses. **Results:** System quality and information quality significantly influence perceived ease of use and perceived usefulness. Perceived ease of use has a significant influence on perceived usefulness. Perceived usefulness, perceived ease of use and subjective norms significantly influence attitude. Additionally, attitude to use and subjective norms significantly influence behavioral intention to use. **Conclusions:** The results of this study have positive significance for university libraries, service providers, and users in using digital resources more efficiently, improving college students' information literacy, and even building a learning society.

Keywords : Digital Library, Perceived Usefulness, Subjective Norms, Attitude, Behavioral Intention to Use

JEL Classification Code: E44, F31, F37, G15

1. Introduction

Resource utilization is the focus of university libraries and affects all aspects of library work, such as the construction of documentary resources, information literacy education, and innovative knowledge services. Network information resources provided by libraries are a type of literature that is easy to use, reasonable in content form, and very effective for users. It is also widely used in the resource construction of the libraries of colleges and universities. In recent years, with the proposal of "three-pronged education," university libraries have assumed a more critical role in cultivating talent in China. Many studies at home and abroad (Mustafa et al., 2021; Xu & Du, 2018) have shown that students poorly utilize various online literature resources purchased by college libraries, and undergraduate and graduate students' lack of information literacy has seriously constrained their academic ability. Therefore, the author hopes to study the impression factors affecting the use of electronic resources, especially online library's full-text resources (OLFRs), by constructing a model that can comprehensively describe the use behavior of library users according to the different professional backgrounds of undergraduates, to improve the utilization of library digital resources from the perspectives of resources, users, technologies, and services. Service perspectives to improve the utilization rate of library digital resources.

Despite the increasing prevalence of digital libraries in Chinese colleges and universities, there is a need to comprehensively understand the factors influencing the behavioral intention to use full-text digital library resources, especially among social sciences students. While digital

1*Wenyuan Zhang, Xihua University Library, Xihua University, China. Email: zhangwenyuan@mail.xhu.edu

libraries offer vast resources, the effectiveness of their utilization depends on various factors. To optimize the design and implementation of digital libraries, it is essential to identify and analyze the key variables impacting the behavioral intentions of social sciences students to engage with these resources.

Although digital libraries have gained prominence in academic settings, there is a noticeable gap in the existing literature regarding a comprehensive analysis of the factors influencing the behavioral intention to use full-text digital library resources, particularly within the context of Chinese colleges and universities. The majority of studies may focus on general usability or may not specifically address the unique needs and preferences of social sciences students.

Furthermore, while previous research may have examined some of the variables individually, there is a lack of integrated studies that simultaneously consider system quality, information quality, perceived ease of use, perceived usefulness, subjective norms, attitude, and behavioral intention to use a digital library within a singular framework. This study aims to bridge this gap by providing a holistic understanding of the interplay among these variables and offering valuable insights for the construction and enhancement of digital libraries in the Chinese higher education landscape.

2. Literature Review

2.1 System Quality

System Quality (SYSQ) was defined as the degree to which users get assistance from the information system (Jeong, 2011). System quality was a major component of the Information Systems Success Model (ISSM) proposed by DeLone and McLean (1992) to examine how SQ and IQ affect user use and satisfaction. Seddon (1997) defined system quality as user interface consistency, usability, document quality, program code quality, testability, and the presence of "bugs" in the system.

System quality has been widely studied in articles as a significant component of the ISSM model. According to the ISSM model, SYSQ and INFQ and service quality affect users' use of and satisfaction with a specific information system and then determine organizational performance (DeLone & McLean, 1992). SYSQ showed the quality of an information system. There was always a positive correlation from SYSQ to the user's intention (Martono et al., 2020; Rafique et al., 2020). Xu and Du (2018) declared that SYSQ significantly impacted the affinity of PU, PEoU, and digital libraries (DLs) rather than information quality. Therefore, this study put forwards hypotheses:

H1: System quality has a significant influence on perceived ease of use.
H2: System quality has a significant influence on perceived usefulness.

2.2 Information Quality

Information quality (INFQ) was introduced by DeLone and McLean in ISSM (DeLone & McLean, 1992) to measure the semantic success of an Information system. According to Gorla et al. (2010), INFQ refers to the quality of data produced by information systems, which can be in the form of online screens or online reports that are always up-to-date, accurate, and complete. Information quality depends on perceiving and judging personal and external environments and their quality, which varies from person to person (Shah & Kitzie, 2012).

The research by Zhou (2011) on critical success factors for mobile website adoption declared that INFQ was the main factor influencing PU. Montazemi and Qahri-Saremi (2015) identified that INFQ had an impact on PU, which increased users' intention to continue to use online banking services. Chen and Tsai (2019) indicated that INFQ significantly affects PEoU, affecting the intention to use the system. Therefore, this study put forwards hypotheses:
H3: Information quality has a significant influence on perceived ease of use.
H4: Information quality has a significant influence on perceived usefulness.

2.3 Perceived Ease of Use

Perceived Ease of Use reflected the (lack of) difficulty in using a specific technology tool (Davis, 1989; Davis et al., 1989). It refers to legibility, comprehension, and ease of learning (Diop et al., 2019). In Yoon (2016) research about user adoption of mobile library applications, this concept was more narrowly defined as the degree of freedom from mental and physical activity when an individual uses mobile library apps.

Previous studies have found a positive correlation between PEoU and PU, PEoU and attitudes, and PEoU and intention. (Hong et al., 2009; Wu & Chen, 2017). Joo and Choi (2016) found that when undergraduate students performed their academic tasks, PEoU was a notable factor in their adoption of online libraries' full-text resources. Okyere-Kwakye and Md Nor (2020) also confirmed that PU and the PEoU positively correlate with the student's attitude toward using e-library for academic tasks. Therefore, this study put forwards hypotheses:
H5: Perceived ease of use has a significant influence on perceived usefulness.
H7: Perceived ease of use has a significant influence on attitude to use.

2.4 Perceived Usefulness

Perceived usefulness (PU) was the other major component of TAM besides PEoU. It reflects improvements in effectiveness and efficiency related to the use of information technology (Davis, 1989; Davis et al., 1989). This variable was used to describe the perceived advantage of an innovation over the existing system it replaced (Rogers, 2003). Yoon and Kim (2017) discovered that perceptions of usefulness were influenced mainly by the advantages that researchers could reap from doing so, including an increase in the efficiency and efficacy of their research.

Booker et al. (2012) found that perceived usefulness significantly affected students' attitudes toward using e-resources. Wu and Chen (2017) stated that perceived usefulness and attitude are the decisive factors affecting students' intention to use MOOCs. Dai et al. (2020) concluded that perceived usefulness is highly correlated to attitude. This consistency may be due to the difference in perceived usefulness, which the cognitive may partly capture. Therefore, this study put forwards a hypothesis:

H6: Perceived usefulness has a significant influence on attitude to use.

2.5 Attitude to Use

Attitude to use was taken as the positive or negative emotions a person had towards using some products (Ajzen, 1991). Ngozi et al. (2014) defined attitude as the students' responses to using e-resources based on their beliefs, perspectives, and assumptions. Park and Kim (2014) described that attitude determined someone's intention to engage in any behavior.

Previous studies indicated that attitude could be used to predict specific innovations; this study draws on the logic of TPB (Ajzen, 1991) and TAM (Davis, 1989). Pramatari and Theotokis (2009) believed that the user's attitudes toward RFID-integrated systems largely determine user acceptance of these systems after RFID integration. Therefore, attitude was regarded as a dependent variable in the study of the TAM model. Okyere-Kwakye and Md Nor (2020) posited that attitude positively and significantly influenced students' intention to use e-library. Therefore, this study put forwards a hypothesis:

H8: Attitude to use has a significant influence on behavioral intention to use.

2.6 Subjective Norm

Subjective norm (SN) could be described as the social influence or pressure on whether an individual's behavior should be performed (Ajzen, 1991). Many technology products have sharing functions, and users are likely to be influenced to use them by the people around them. If friends, teachers, or classmates around them recommend a product or if they see content pushed on social media and have thoughts about using the product, this impact can be described by SN. Subjective norms often refer to an individual's evaluation of the expectations for their behavior as perceived by others (Srite & Karahanna, 2006). Hu and Zhang (2016) interpreted subjective norms as an external cognition, which refers to how people perceive societal pressure and how people are trusted to influence intended behavior.

The importance of peer influence in students' decision to adopt e-learning was confirmed by Nanayakkara and Whiddett (2005). Previous studies on data reuse have shown that a lack of data reuse norms in the field of social sciences, such as the lack of metadata annotation and sharing mechanisms, negatively impacted researchers' data reuse behavior (Yoon, 2016; Yoon & Kim, 2017). Therefore, the SN of data reuse would positively affect the attitude of social scientists towards data reuse and encourage them to reuse other scientists' data. Therefore, this study put forwards hypotheses:

H9: Subjective norms have a significant influence on attitude to use.

H10: Subjective norms have a significant influence on behavioral intention to use.

2.7 Behavioral Intention to Use

Behavioral intention to use (BI) refers to an individual's willingness to perform a behavior (Ajzen, 1991). Including repurchase intention, word of mouth, loyalty, negative comments, and price sensitivity. Chang and Lee (2007). specifically, behavioral intention could be defined as a person's possibility or subjective tendency to be willing to use a particular product themselves, whether they will continue to use it in the future or recommend others to use it (Duan et al., 2020).

According to the research of Chau and Hu (2002), BI is revealed as the assumption that a person performs a cognitive behavior to use an innovative product or technology. Hu and Zhang (2016) studied factors influencing college students' behavioral intention to use mobile libraries in China; the most influential factors were ATT, SN, and PU. Besides, PU, SN, and self-efficacy can affect attitude, thus indirectly affecting behavioral intention. This result was similar to the finding of Okeke et al. (2013) that self-efficacy, subjective norms, and attitudes can positively affect students' willingness to use electronic libraries at the Ghana Institute of Technology.

3. Research Methods and Materials

3.1 Research Framework

The authors constructed the conceptual framework of this paper according to the process of users' use of library online digital resources, based on three articles in the related field of research by Xu and Du (2018) Chintalapati and Daruri (2017) and Hu and Zhang (2016), which are based on the ISSM, TAM, and TPB theories, respectively (see Fig. 1). In the process of constructing the framework of this paper, both the technical and user dimensions are considered. The description of the factors affecting users' use of LOFRs is more comprehensive.

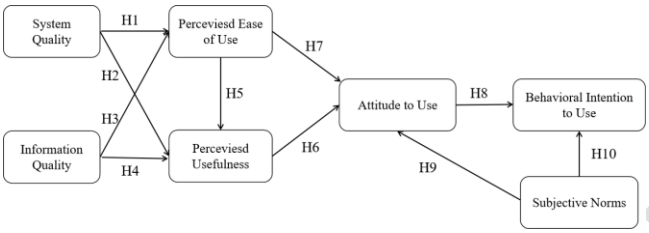

Figure 1: Conceptual Framework

H1: System quality has a significant influence on perceived ease of use.
H2: System quality has a significant influence on perceived usefulness.
H3: Information quality has a significant influence on perceived ease of use.
H4: Information quality has a significant influence on perceived usefulness.
H5: Perceived ease of use has a significant influence on perceived usefulness.
H6: Perceived usefulness has a significant influence on attitude.
H7: Perceived ease of use has a significant influence on attitude to use.
H8: Attitude to use has a significant influence on behavioral intention to use.
H9: Subjective norms have a significant influence on attitude to use.
H10: Subjective norms have a significant influence on behavioral intention to use.

3.2 Research Methodology

This study aims to investigate the factors influencing the use of OLFRs by undergraduate students in social science disciplines. In this study, undergraduate students with social science disciplinary backgrounds from 10 undergraduate institutions ranked in the top 10 in terms of number of undergraduate students enrolled in Chengdu were selected as the target population. The study utilized a quantitative survey method. The questionnaire was conducted using a combination of quota sampling and snowball sampling.

Before formal sampling, the authors did an item-objective congruence (IOC) test and a pilot test to determine the reliability and validity of the questionnaire. A panel of three experts assessed the Index of Item-Objective Congruence (IOC) to ensure the accurate measurement of each item's intended construct, thereby enhancing the validity of the assessment, with a criterion set at a score above 0.6. To achieve an appropriate scale for the pilot test, 50 participants were deemed necessary. Consequently, the researcher specifically selected 50 target students for the pilot test and gauged internal consistency reliability using Cronbach's Alpha coefficient. The obtained Cronbach's Alpha score surpassed 0.7, indicating a reliable measurement of the intended construct and fortifying the overall reliability of the test results (George & Mallery, 2003).

3.3 Population and Sample Size

The author determined the target demographic for this research to be undergraduate students in Chengdu, China, who have experience using the library's full-text resources. Different professional backgrounds, science, and social sciences may lead to differences in usage habits that interest the author; this difference in usage can affect libraries' purchasing policy for different electronic resources. Therefore, in this study, the author focuses on undergraduate users with a social science background who have experience using library electronic resources. Thus, the target population could be described as 1-Undergraduates from the certain ten universities in Chengdu; 2-Who have a social science decline background; 3-Who are experienced in using OLFRs.

A computational tool was developed by Soper (2020) to find out how to determine the sample needed to study. Recommended by Soper (2020), the sample size should be 425. The researcher aimed to collect 500 samples because invalid questionnaires might be collected.

3.4 Sampling Technique

Quota sampling is a widely utilized form of non-probability sampling in academic research, based on social or economic characteristics called "control characteristics." The researcher got the number of undergraduate students in universities in Chengdu and selected the top 10 universities with the largest number of students; the survey should be distributed in a manner proportional to the number of pupils. At the same time, ensure that the respondents' academic

backgrounds were equivalent to social sciences. Due to the researcher's social circle limitations, completing the quota sampling in Table 1 can be easy. Snowball sampling serves as a supplement to quota sampling. The researcher commissioned teachers from the target school to distribute questionnaires to students in the target school and then required them to distribute questionnaires to their classmates via social media platforms to ensure that the respondents cover the entire social science discipline of the school as much as possible.

Table 1: Sample Units and Sample Size

Institutions	Proportional Sample Size
Xihua University	60
Sichuan University	58
Sichuan Normal University	57
Sichuan Agricultural University	57
Southwest Minzu University	50
Southwest Petroleum University	47
Chengdu University of Technology	47
Chengdu University	46
Southwest Jiaotong University	45
Chengdu University of Traditional Chinese Medicine	33
Total	**500**

Source: Constructed by author

4. Results and Discussion

4.1 Demographic Information

The demographic characteristics of 500 respondents in this study were distributed in normal universities with 500 samples. The information is summarized in Table 2. According to the gender distribution, the number of male participants is 236, accounting for 47.20% of the total respondents, and the number of female participants is 264, accounting for 52.80%. According to the distribution of different disciplines, the number of participants in Philosophy is 53, accounting for 10.60% of the total respondents; the number of participants in Economics is 48, accounting for 9.60%; and the number of participants in Law is 80, accounting for 16%; the number of participants in Education is 61, accounting for 12.20%; the number of participants in literature is 52, accounting for 10.40%; the number of participants in History is 42, accounting for 8.40%; the number of participants in Management is 137, accounting for 27.40%; the number of participants in Art is 27, accounting for 5.40% of the total respondents.

Table 2: Demographic Profile

Demographic and General Data (N=500)		Frequency	Percentage
Gender	Male	236	47.20%
	Female	264	52.80%
Discipline	Philosophy	53	10.60%
	Economics	48	9.60%
	Law	80	16.00%
	Education	61	12.20%
	Literature	52	10.40%
	History	42	8.40%
	Management	137	27.40%
	Art	27	5.40%
Frequency of Using LOFRs	barely never	9	1.80%
	One time per week or less	159	31.80%
	1-2 times per week	217	43.40%
	3 times per week or more	115	23.00%
Favorite Platform (s)/Database(s)to Get LOFRs	CNKI	340	68.00%
	Wafang	104	20.80%
	CQVIP	141	28.20%
	Elsevier	79	15.80%
	EBSCO	41	8.20%
	Emerald	33	6.60%
	Chaoxing eBooks	204	40.80%
	Springer	37	7.40%
	Others	1	0.20%
Purpose of using LOFRs	barely never	6	1.20%
	Daily learning	292	58.40%
	Thesis writing	372	74.40%
	Project research needs	335	67.00%
	Others	7	1.40%

4.2 Confirmatory Factor Analysis (CFA)

CFA was used as a research methodology to assess the extent to which the alignment between factors and measurement items (specifically, scale items) aligns with the anticipated expectations of the researcher. Confirmatory factor analysis (CFA) primarily aims to validate its validity and reliability of the data.

Table 3 shows the results of convergent validity tests. Factor loading tests are a valuable tool for evaluating the convergent validity of a construct (Khan & Qutab, 2016). Hair et al. (2010) posited that the factor loading ought to exceed 0.50, with a threshold of 0.70 or more deemed very satisfactory. Composite Reliability CR (Composite Reliability) refers to the reliability of a combined variable (a new variable consisting of the sum of several variables); Average Variance Extracted AVE (Average Variance Extracted). AVE characterizes convergent validity; the larger the AVE value, the stronger the explanatory power of the measurement item. When the CR value is greater than 0.7 and the AVE value is greater than 0.5, it indicates that the validity of the sample data is excellent (Hair et al., 2010). As can be seen from Table 3, the standardized loading coefficients of

each variable are all greater than 0.7, the combined reliability (CR) is greater than 0.7, and the average variance mention value (AVE) is greater than 0.5. The above results indicate a good correspondence between the variables and the question items and that the aggregation validity is good.

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 (SYSQ)	DeLone and McLean (1992)	0.759	4	0.796-0.852	0.892	0.675
Information Quality (INFQ)	DeLone and McLean (1992)	0.811	6	0.799-0.833	0.924	0.669
Perceived Ease of Use (PEOU)	Davis (1989)	0.869	3	0.796-0.845	0.865	0.682
Perceived Usefulness (PU)	Davis (1989)	0.752	3	0.823-0.868	0.884	0.718
Subjective Norm (SN)	Ajzen (1991)	0.811	3	0.784-0.827	0.85	0.654
Attitude to Use (ATT)	Ajzen (1991)	0.777	3	0.814-0.826	0.859	0.67
Behavioral Intention to Use (BI)	Ajzen (1991)	0.727	3	0.836-0.859	0.885	0.719

According to Maydeu-Olivares and García-Forero (2010), the concept of goodness of fit (GOF) is used to assess the degree of correspondence between a model and a given set of measures, often utilized for evaluating model adequacy (Owlia et al., 2015). Goodness of Fit (GOF) may be categorized into three distinct sorts: absolutely fit indices, incremental fit indices, and parsimonious fit indices.

Therefore, this section uses statistical tools to conduct a validation factor analysis of the scales. First, the CFA model was constructed in AMOS. This paper selected absolute fit metrics (e.g., CMIN/DF, GFI, AGFI, and RMSEA) and incremental fit metrics (e.g., CFI, NFI, and TLI) to validate the model's GOF. As shown in Table 4, all the metrics meet the thresholds; thus, all the goodness of fit used in the CFA test measures are acceptable.

Table 4: Goodness of Fit for Measurement Model

Fit Index	Acceptable Criteria	Statistical Values
CMIN/df	<5 (Chang, 2012)	1.632
GFI	≥0.90 (Wu & Chen, 2017)	0.939
AGFI	≥0.90 (Chang, 2012)	0.922
RMSEA	＜0.08 (Zhou, 2011)	0.036
NFI	≥0.90 (Chang, 2012)	0.952
CFI	≥0.90 (Chang, 2012)	0.982
TLI	≥0.90 （Wu & Chen, 2017)	0.978
Model Summary		**Acceptable Model Fit**

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

In order to further validate the validity of the sample, the sample was analyzed for discriminant validity analysis, which was employed in this study. The values on the diagonal in Table 6 are the square root of AVE, and the rest of the data are correlation coefficients, representing the correlation between the variables. In Table 5, all correlation coefficients are less than the square root of AVE, and the correlation between any two latent variables was less than 0.80, indicating some correlation and some differentiation between the respective variables. From this, the data differentiation validity of the scale is ideal.

Table 5: Discriminant Validity

	SYSQ	INFQ	PEoU	PU	SN	ATT	BI
SYSQ	**0.822**						
INFQ	0.604	**0.818**					
PEoU	0.543	0.618	**0.826**				
PU	0.515	0.533	0.564	**0.847**			
SN	0.547	0.55	0.567	0.569	**0.809**		
ATT	0.572	0.605	0.548	0.561	0.576	**0.819**	
BI	0.566	0.593	0.503	0.536	0.558	0.588	**0.848**

Note: The diagonally listed value is the AVE square roots of the variables
Source: Created by the author.

4.3 Structural Equation Model (SEM)

Structural equation modeling, abbreviated as SEM, is a statistical method to analyze the relationship between variables based on the covariance matrix (Fauzi, 2022). Theoretical a priori is an important feature of structural equation modeling, i.e., structural equation modeling is based on certain theoretical foundations. The sample questionnaire has passed the reliability and validity tests, indicating that the model constructed in this study and the sample data meet the conditions for constructing SEM.

In this section, firstly, statistical software is used to construct an SEM model of undergraduates' behavioral intention using an online library's full-text resources. Then, the samples collected from the questionnaire survey are imported to verify the model's goodness of fit, and finally, the model is subjected to path analysis.

Table 6: Goodness of Fit for Structural Model

Index	Acceptable	Before Adjustment Statistical Values	After Adjustment Statistical Values
CMIN/df	<5 (Chang, 2012)	3.985	2.129
GFI	≥0.90 (Wu & Chen, 2017)	0.862	0.920
AGFI	≥0.90 (Chang, 2012)	0.831	0.901
RMSEA	＜0.08 (Zhou, 2011)	0.077	0.048
NFI	≥0.90 (Chang, 2012)	0.883	0.938
CFI	≥0.90 (Chang, 2012)	0.909	0.966
TLI	≥0.90 （Wu & Chen, 2017)	0.897	0.961

Index	Acceptable	Before Adjustment Statistical Values	After Adjustment Statistical Values
Model Summary		**Unacceptable Model Fit**	**Acceptable Model Fit**

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

4.4 Research Hypothesis Testing Result

The results of hypothesis testing are shown in Table 8. Where "SE" is the estimated parameter standard error, the t-value consists of the CR (critical ratio) significance P-value. In general, when the absolute value of the CR coefficient is greater than 1.96, it means that the coefficient is significantly different at the 0.05 level of significance; when the absolute value of the CR coefficient is greater than 2.58, it means that the coefficient is significantly different at the 0.01 level of significance, and the significance P-value is indicated by "**"; When the absolute value of the CR coefficient is greater than 3.29, it means that the coefficients are significantly different at the 0.001 level of significance, and the p-value of significance is expressed as "***."

Table 7: Hypothesis Results of the Structural Equation Modeling

Hypothesis	(β)	t-value	Result
H1: SYSQ→PEOU	0.301	5.441***	Supported
H2: SYSQ→PU	0.255	4.288***	Supported
H3: INFQ→PEOU	0.508	8.848***	Supported
H4: INFQ→PU	0.191	2.948**	Supported
H5: PEOU→PU	0.346	5.194***	Supported
H6: PU→ATT	0.275	4.932***	Supported
H7: PEOU→ATT	0.266	4.470***	Supported
H8: ATT→BI	0.427	7.326***	Supported
H9: SN→ATT	0.368	7.002***	Supported
H10: SN→BI	0.39	6.657***	Supported

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

Research Hypothesis H1: Regarding the relationship between system quality and perceived ease of use, the results of the path analysis are as follows: the standardized path coefficient β is 0.301, and the t-value is 5.441***, which indicates a significant effect, and the hypothesis is valid. It can be seen that perceived ease of use is indeed influenced by system quality. Because an intelligent library is a web-based information system, college students' perception of system quality affects their perception of the ease of use of resources (Li & Liu, 2023).

Research Hypothesis H2: Regarding the relationship between system quality and perceived usefulness, the results of the path analysis are as follows: the standardized path coefficient β is 0.255, and the t-value is 4.288***, which indicates a significant effect, and the hypothesis is valid. It can be seen that the quality of the system indeed influences perceived usefulness. This may indicate that factors such as performance and speed of execution affect users' use of OLFRs in mobile learning environments (Li & Liu, 2023).

Research Hypothesis H3: Regarding the relationship between information quality and perceived ease of use, the results of the path analysis are as follows: the standardized path coefficient β is 0.508, and the t-value is 8.848***, which indicates a significant effect, and the hypothesis is valid. It can be seen that information quality significantly and positively affects perceived ease of use. When users believe that the information they receive meets their needs in terms of timeliness, completeness, and reliability, it can affect their perception of the ease of use of resources.

Research Hypothesis H4: Regarding the relationship between information quality and perceived usefulness, the results of the path analysis are as follows: the standardized path coefficient β is 0.191, and the t-value is 2.948**, which indicates that the effect is significant and the hypothesis is valid. It can be seen that perceived usefulness is indeed affected by information quality. When users believe that the information they receive meets their needs in terms of timeliness, completeness, and reliability, they will be able to perceive the ease of use of the resource.

Research Hypothesis H5: Regarding the relationship between perceived ease of use and perceived usefulness, the results of the path analysis are as follows: the standardized path coefficient β is 0.346, and the t-value is 5.194**, which indicates a significant effect, and the hypothesis is valid. Previous studies have widely confirmed the effect of perceived ease of use on perceived usefulness. If users perceive an online full-text database as more straightforward to use, they will believe that the application of the system will improve their work performance (Chen & Tsai, 2019; Li & Liu, 2023).

Research Hypothesis H6: Regarding the relationship between perceived usefulness and attitude toward use, the results of the path analysis are as follows: the standardized path coefficient β is 0.275, and the t-value is 4.932***, which indicates that the effect is significant and the hypothesis is valid. It can be seen that perceived usefulness positively affects the attitude toward use. When a system or a resource that library users use is helpful, it motivates them to actively use and reuse the system or the resources provided by the system, thus generating a cycle of net personal gain (Okyere-Kwakye & Md Nor, 2020).

Research Hypothesis H7: Regarding the relationship between perceived ease of use and attitude towards use, the results of the path analysis are as follows: the standardized path coefficient β is 0.266, and the t-value is 4.470*, which indicates a significant effect, and the hypothesis is valid, but the effect is weaker than other hypotheses, which suggests

that perceived ease of use positively influences the attitude towards use in the context of the present study. University students perceive online libraries as flexible and easier to use than print media in searching for information (Okyere-Kwakye & Md Nor, 2020), which could explain the fact that in Chinese university libraries, the number of paper books borrowed tends to be a mostly declining trend, while visits to e-resources have been increased.

Research Hypothesis H8: Regarding the relationship between usage attitudes and usage behaviors, the results of path analysis are as follows: the standardized path coefficient β is 0.427, and the t-value is 7.236***, which indicates that the effect is significant, and the hypothesis is valid. In this study, attitude toward use positively influences usage behavior. There is ample evidence that attitude can significantly influence users' intention to use information resources, either technology or non-technology (Mustafa et al., 2021; Yoon, 2016). Users with a positive attitude towards library resources are motivated to use such resources repeatedly.

Research Hypothesis H9: Regarding the relationship between subjective norms and attitude, the results of the path analysis are as follows: the standardized path coefficient β is 0.368, and the t-value is 7.002***, which indicates a significant effect, and the hypothesis is valid. The studies have shown that subjective norms impact their attitude toward using OLFRs.The relationship between an individual's subjective norms, attitudes, and behavioral intentions in TRA and TPB theories has been recognized by many researchers (Fishbein & Ajzen, 2010; Kakhki et al., 2020).

Research Hypothesis H10: Regarding the relationship between subjective norms and behavioral intention, the results of the path analysis are as follows: the standardized path coefficient β is 0.390, and the t-value is 6.657***, which indicates a significant effect, and the hypothesis is valid. Several previous studies have found that others may influence an individual's willingness to use information resources and that students use library materials because of pressure from academic or course instructors (Mustafa et al., 2021; Silipigni & Randall, 2013; Yoon, 2016).

5. Conclusion and Recommendation

5.1 Conclusion and Discussion

This study aimed to determine which factors influence the use of library online full-text resources (OLFRs) in social science background. Based on previous research, this study proposed seven latent variables and ten hypotheses about their interrelationships. The study selected 500 undergraduate students with social science disciplinary backgrounds from 10 universities in Chengdu. The authors first employed confirmatory factor analysis (CFA) to determine whether the data conformed to a specific theoretically derived measurement model. Then, AMOS structural equation modeling (SEM) was used to verify the validity of the hypotheses affecting the use of full-text library digital resources by undergraduate students from social science backgrounds. Results indicated that all ten hypotheses were supported.

The results of the study showed that attitude to use (ATT) had the greatest direct effect on Behavioral intention to use (BI), and Subjective norms (SN) had the greatest total effect on the dependent variable BI. Information quality (INFQ) and System quality (SYSQ) significantly influence Perceived Ease of Use (PEoU), and through Perceived Usefulness (PU), ATT ultimately has a positive effect on BI.

5.2 Recommendation

Based on the results of this quantitative investigation, the researcher offered the following practical recommendations for academic libraries, users, and more. University libraries play an essential role in the "three-pronged education." In addition to undertaking the traditional library's mission of document collection and cultural inheritance, modern university libraries also aim to improve undergraduates' information literacy and increase the utilization rate of all kinds of library resources. Previous surveys have shown that college students in Chinese universities must fully utilize the full-text resources of online libraries. This precisely reflects the need for more information literacy among undergraduates, which often restricts students' academic and lifelong learning abilities.

First of all, we see that Information quality (INFQ) and System quality (SYSQ) significantly affect Perceived Ease of Use (PEoU). On the one hand, objective factors require college libraries and service providers to work together to ensure the timeliness, smoothness, completeness, and convenience of information. On the other hand, college libraries are required to play a more significant role in information literacy education, enhance students' information literacy, and improve the ability to access information to enhance their perceived ease of use in accessing information. Perceived ease of use has been shown to affect perceived usefulness and influence students' attitudes toward using OLFRs.

To further analyze the path of readers' behavioral willingness, the objective factors of system quality and information quality impact the results. However, the factors that have the most significant impact are still perceived usefulness, attitude, and subjective norms. For college students and faculties, the results of this study can further reveal their own needs and increase their executive

motivation to use full-text resources in online libraries. Books and documents are always a considerable investment for universities. Let us start with the users, all the students, and faculties from the subjective enhancement of the willingness to use. In that case, we can improve the utilization rate of the literature, which can enhance the university's academic atmosphere, promote the scientific research output, help the construction of academic disciplines, and contribute to the long-term development and reputation of the university.

For college libraries, the importance of reading promotion can be further recognized because subjective norms impact users' behavioral intention to use. Social influence is an important part of subjective norms; if faculty and students in a particular profession agree that using literature is important, it will inevitably influence an individual's judgment and motivate them to use the literature resources more positively. Service providers are also an integral part of reading promotion and can adjust their promotion strategies according to user needs. The ultimate goal is to make college students become library resource users, beneficiaries, and promoters, build a book-scented campus, and establish a learning society that answers subjective norms and social norms.

The Chinese government advocates the establishment of a learning society. This requires the construction of a lifelong learning system that is more flexible, resource-rich, and convenient in terms of learners' needs and the formation of a lifelong learning society and a learning country for all. Library resources are tools for learning, and this study can jointly promote you to build a learning society from multiple aspects of users, libraries, schools, and society.

5.3 Limitation and Further Study

While the present study was conducted with methodological rigor, several limitations exist. Firstly, the participants of this study are all from Chengdu, and all of them are undergraduates; given that literature utilization habits vary with countries and educational levels, caution must be exercised in generalizing the findings to other cultural and other educational level contexts. Secondly, from the perspective of undergraduate usage habits, this study only considers full-text database resources. The insights and results of this study may not be transferable to other types of academic resources provided by university libraries, such as citation database resources, statistical data resources, etc. However, the limitations open up exciting opportunities for future research. Extending this study to different resources would provide initial support for the robustness of the findings.

References

Ajzen, I. (1991). The theory of planned behavior. *Organizational Behavior and Human Decision Processes, 50*(2), 179-211. https://doi.org/10.1016/0749-5978(91)90020-t

Booker, L. D., Detlor, B., & Serenko, A. (2012). Factors affecting the adoption of online library resources by business students. *Journal of the American Society for Information Science and Technology. 63*(12), 2503-2520. https://doi.org/10.1002/asi.22723

Chang, C. (2012). Narrative Ads and Narrative Processing. In E. Thorson and S. Rodgers (Eds.), *Advertising Theory* (pp.241-254). Routledge.

Chang, S.-C., & Lee, M.-S. (2007). A study on relationship among leadership, organizational culture, the operation of learning organization and employees' job satisfaction. *The Learning Organization, 14*(2), 155-185. https://doi.org/10.1108/09696470710727014

Chau, P. Y. K., & Hu, P. J. H. (2002). Investigating healthcare professionals' decisions to accept telemedicine technology: an empirical test of competing theories. *Information & Management*, *39*(4), 297-311. https://doi.org/10.1016/s0378-7206(01)00098-2

Chen, C. C., & Tsai, J. L. (2019). Determinants of behavioral intention to use the Personalized Location-based Mobile Tourism Application: An empirical study integrating TAM with ISSM. *Future Generation Computer Systems, 96*, 628-638. https://doi.org/10.1016/j.future.2017.02.028

Chintalapati, N., & Daruri, V. S. K. (2017). Examining the use of YouTube as a learning resource in higher education: scale development and validation of tam model. *Telematics & Informatics, 34*(6), 853-860. https://doi.org/10.1016/j.tele.2016.08.008

Dai, H. M., Teo, T., Rappa, N. A., & Huang, F. (2020). Explaining Chinese university students' continuance learning intention in the MOOC setting: A modified expectation confirmation model perspective. *Computers & Education, 150*(5), 38-50. https://doi.org/10.1016/j.compedu.2020.103850

Davis, F. D. (1989). Perceived usefulness, perceived ease of use, and user acceptance of information technology. *MIS Quarterly, 13*(3), 319-340. https://doi.org/10.2307/249008

Davis, F. D., Bagozzi, R. P., & Warshaw, P. R. (1989). User acceptance of computer technology: a comparison of two theoretical models. *Management Science, 35*(8), 982-1003. https://doi.org/10.1287/mnsc.35.8.982

DeLone, W., & McLean, E. (1992). Information systems success: the quest for the dependent variable. *Information Systems Research, 3*(1), 60-95. https://doi.org/10.1287/isre.3.1.60

Diop, E. B., Zhao, S., & Duy, T. V. (2019). An extension of the technology acceptance model for understanding travelers' adoption of variable message signs. *PLoS ONE 14*(4), e0216007. https://doi.org/10.1371/journal.pone.0216007

Duan, Y., Liu, B., & He, Y. (2020). Study on relationships among sports spectator motivations, satisfaction, and behavioral intention: empirical evidence from Chinese marathon. *International Journal of Sports Marketing and Sponsorship, 21*(3), 409-425. https://doi.org/10.1108/ijsms-04-2018-0034

Fauzi, M. A. (2022). Partial least square structural equation modelling (PLS-SEM) in knowledge management studies: Knowledge sharing in virtual communities. *Knowledge Management & E-Learning, 14*(1), 103124. https://doi.org/10.34105/j.kmel.2022.14.007

Fishbein, M., & Ajzen, I. (2010). *Predicting and Changing Behavior: The Reasoned Action Approach* (1st ed.). Psychology Press (Taylor & Francis).

George, D., & Mallery, P. (2003). *SPSS for Windows Step by Step: A Simple Guide and Reference. 11.0 Update* (4th ed.). Allyn & Bacon.

Gorla, N., Somers, T. M., & Wong, B. (2010). Organizational impact of system quality, information quality, and service quality. *Journal of Strategic Information Systems, 19*(3), 207-228. https://doi.org/10.1016/j.jsis.2010.05.001

Hair, J., Black, W. C., Babin, B. J., Anderson, R. E., & Tatham, R. (2010). *Multivariate Data Analysis* (1st ed.). Pearson Education.

Hong, J. Y., Suh, E. H., & Kim, S. J. (2009). Context-aware systems: A literature review and classification. *Expert Systems with Applications, 36*(4), 8509-8522. https://doi.org/10.1016/j.eswa.2008.10.071

Hu, J., & Zhang, Y. (2016). Chinese students' behavior intention to use mobile library apps and effects of education level and discipline. *Library Hi Tech, 34*(4), 639-656. https://doi.org/10.1108/lht-06-2016-0061

Jeong, H. (2011). An investigation of user perceptions and behavioral intentions towards the e-library. *Library Collections, Acquisitions, and Technical Services, 35*(2-3), 45-60. https://doi.org/10.1080/14649055.2011.10766298

Joo, S., & Choi, N. (2016). Understanding users' continuance intention to use online library resources based on an extended expectation-confirmation model. *The Electronic Library, 34*(4). 554-571. https://doi.org/10.1108/el-02-2015-0033

Kakhki, M. K., Hadadian, A., Joyame, E. N., & Asl, N. M. (2020). Understanding librarians' knowledge sharing behavior: the role of organizational climate, motivational drives, and leadership empowerment. *Library & Information Science Research, 42,* 100998. https://doi.org/10.1016/j.lisr.2019.100998

Khan, A., & Qutab, S. (2016). Understanding research students' behavioural intention in the adoption of digital libraries. Library Review, 65(4/5), 295-319. https://doi.org/10.1108/lr-06-2015-0070

Li, M., & Liu, L. (2023). Students' perceptions of augmented reality integrated into a mobile learning environment. *Library Hi Tech*, *41*(5) 1498-1523. https://doi.org/10.1108/lht-10-2021-0345

Martono, S., Nurkhin, A., Hasan, M., Indah, A., & Wolor, C. (2020). Understanding the Employee's Intention to Use Information System: Technology Acceptance Model and Information System Success Model Approach. *Journal of Asian Finance Economics and Business, 7*(10), 1007-1013. https://doi.org/10.13106/jafeb.2020.vol7.no10.1007

Maydeu-Olivares, A., & García-Forero, C. (2010). *Goodness-of-fit testing* (1st ed.). International encyclopedia of education.

Montazemi, A. R., & Qahri-Saremi, H. (2015). Factors affecting adoption of online banking: A meta-analytic structural equation modeling research. *Information Management, 52*(2), 210-226. https://doi.org/10.1016/j.im.2014.11.002

Mustafa, M. H., Ahmad, M. B., Shaari, Z. H., & Jannat, T. (2021). Integration of tam, tpb, and tsr in understanding library user behavioral utilization intention of physical vs. ebook format. *The Journal of Academic Librarianship, 47*(5), 102399. https://doi.org/10.1016/j.acalib.2021.102399

Nanayakkara, C., & Whiddett, D. (2005). A model of user acceptance of e-learning technologies: A Case Study of a Polytechnic in New Zealand. Information systems technology and its applications, *ISTA' 2005 4th. International conference, 63,* 180-189.

Ngozi, B. U., Onuoha, D., & Nwachukwu, V. N. (2014). Students' attitudes as a determining factor to electronic information resources use in university, libraries in southwest Nigeria. *DESIDOC Journal of Library and Information Technology, 34*(4), 333-341. https://doi.org/10.14429/djlit.34.6269

Okeke, I. E., Oghenetga, L. U., & Nwabu, E. C. (2013). Students' attitude towards the use of reference and information services (RIS) in academic libraries in Nigeria. *International Journal of Library and Information Science, 5*(10), 335-341.

Okyere-Kwakye, E., & Md Nor, K. (2020). Examining the intentions of a Ghanaian technical university students to use e-library. *Digital Library Perspectives, 38*(1), 69-87. https://doi.org/10.1108/dlp-05-2020-0034

Owlia, M. S., Fallah Nezhad, M. S., & Sheikh Sajadieh, M. (2015). A new method for process control based on goodness of fit tests. *International Journal of Quality & Reliability Management, 32*(2),132-143.

Park, E., & Kim, K. J. (2014). An integrated adoption model of mobile cloud services: exploration of key determinants and extension of technology acceptance model. *Telematics and Informatics, 31*(3), 376-385. https://doi.org/10.1016/j.tele.2013.11.008

Pramatari, K., & Theotokis, A. (2009). Consumer acceptance of RFID-enabled services: a model of multiple attitudes, perceived system characteristics and individual traits. *European Journal of Information Systems, 18*(6), 541-552. https://doi.org/10.1057/ejis.2009.40

Rafique, H., Omran, A., Shamim, A., Anwar, F., & Bashir, A. K. (2020). Investigating the Acceptance of Mobile Library Applications with an Extended Technology Acceptance Model (TAM). *Computers & Education, 145, 103732.* https://doi.org/10.1016/j.compedu.2019.103732

Rogers, E. M. (2003). *Diffusion Of Innovations* (5th ed.). The Free Press.

Seddon, P. B. (1997). A Respecification and Extension of the DeLone and McLean Model of IS Success. *Journal of Information Systems Research, 8,* 240-253. http://dx.doi.org/10.1287/isre.8.3.240

Shah, C., & Kitzie, V. (2012). Social Q&A and virtual reference-comparing apples and oranges with the help of experts and users. *Journal of the American Society for Information Science and Technology, 63*(10), 2020-2036. https://doi.org/10.1002/asi.22699

Silipigni, C. L., & Randall, K. M. (2013). Why the internet is more attractive than the library. *The Serials Librarian, 64*(1-4), 41-56. https://doi.org/10.1080/0361526x.2013.761053

Soper, D. S. (2020). *A-Priori Sample Size Calculator for Structural Equation Models.* http://wwwdanielsopercom/statcalc

Srite, M., & Karahanna, E. (2006). The Role of Espoused National Cultural Values in Technology Acceptance. *MIS Quarterly, 30,* 679-704. https://doi.org/10.2307/25148745

Wu, B., & Chen, X. H. (2017). Continuance intention to use MOOCs: Integrating the technology acceptance model (TAM) and task technology fit (TTF) model. *Computers in Human Behavior, 67*(C), 221-232. https://doi.org/10.1016/j.chb.2016.10.028

Xu, F., & Du, J. T. (2018). Factors influencing users' satisfaction and loyalty to digital libraries in Chinese universities. *Computers in Human Behavior, 83*, 64-72. https://doi.org/10.1016/j.chb.2018.01.029

Yoon, A., & Kim, Y. (2017). Social scientists' data reuse behaviors: Exploring the roles of attitudinal beliefs, attitudes, norms, and data repositories. *Library & Information Science Research, 39*(3), 224-233. https://doi.org/10.1016/j.lisr.2017.07.008

Yoon, H. (2016). User acceptance of mobile library applications in Academic Libraries: An application of the technology acceptance model. *The Journal of Academic Librarianship, 42*(6), 687-693. https://doi.org/10.1016/j.acalib.2016.08.003

Zhou, T. (2011). Examining the critical success factors of mobile website adoption. *Online Information Review, 35*(4), 636-652. https://doi.org/10.1108/14684521111161972