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The Assessment on Behavioral Intention to Use Digital Library Among Undergraduates Majoring Natural Science in Chengdu

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Abstract

Purpose: This paper aims to assess the determinants of willingness to use Online Library's Full-text Resources among undergraduate students majoring natural science from ten higher education institutions in Chengdu. System quality, information quality, perceived ease of use, perceived usefulness, attitude, and subjective norms were examined to determine whether these factors affect students' behavioral intention to use OLFRs. **Research design, data, and methodology:** The researcher used a quantitative exploratory method to distribute questionnaires to undergraduate students. Confirmatory factor analysis and structural equation modeling were used to determine the relationship between the study variables. **Results:** The quality of the system and information plays a significant role in shaping the perceived ease of use and perceived usefulness. Specifically, perceived ease of use has a noteworthy impact on perceived usefulness. Furthermore, perceived usefulness, perceived ease of use, and subjective norms collectively exert a significant influence on attitude. Moreover, attitude towards use and subjective norms are key factors that significantly impact the behavioral intention to use. **Conclusions:** The results of this study are of positive significance to university libraries, digital library/intelligent library service providers, and users to use digital resources more efficiently, to improve college students' information literacy, and even to build a learning society.

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

JEL Classification Code: E44, F31, F37, G15

1. Introduction

The optimal utilization of resources is a central focus for university libraries, influencing various facets of library operations, including developing documentary resources, information literacy education, and providing innovative knowledge services. Libraries offer network information resources characterized by user-friendly accessibility, logical content structure, and high effectiveness, contributing significantly to the resource infrastructure of university libraries. In recent years, given the emphasis on "three-pronged education," university libraries in China have assumed a more pivotal role in talent cultivation (Xu & Du, 2018).

Numerous domestic and international studies (Mustafa et al., 2021; Xu & Du, 2018) have revealed that students must be more utilized in college libraries' diverse online literature resources. The inadequate information literacy skills of undergraduate and graduate students have significantly impeded their academic capabilities. Considering this, the author aims to investigate the factors influencing the use of electronic resources, particularly online library full-text resources (OLFRs). The study aims to construct a comprehensive model that elucidates library users' usage behavior based on undergraduates' diverse professional backgrounds. The objective is to enhance the utilization of library digital resources by addressing perspectives related to resources, users, technologies, and services. This approach seeks to elevate the utilization rate of library digital resources by focusing on service enhancements.

Resource utilization is the focus of college libraries and affects all aspects of library work, such as the construction

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of documentary resources, information literacy education, and innovative knowledge services. In recent years, with the proposal of "three comprehensive education," college 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' utilization of various online literature resources purchased by college libraries is low, and the lack of information literacy among undergraduate and graduate students has seriously constrained their academic ability. Therefore, the author hopes to improve the utilization rate of library digital resources from the perspectives of resources, users, technology, and services by constructing a model that can comprehensively describe library users' usage behaviors according to the different professional backgrounds of undergraduates and by investigating the influencing factors affecting the use of electronic resources, especially online library full-text resources (OLFR). Service Perspective to Improve the Utilization of Library Digital Resources.

According to the regulations issued by the Academic Degrees Committee of the State Council and the Ministry of Education, the disciplines in China's undergraduate education are categorized into 12 fields (excluding military science), classified by the author into natural sciences and social sciences. Natural sciences: In this paper, the natural sciences include science, engineering, agriculture, and medicine.

In recent years, the advent of digital libraries has transformed the landscape of academic resources, providing students with unprecedented access to a vast array of information. This study aims to delve into the factors influencing the behavioral intention to use full-text digital library resources, focusing on social sciences students within Chinese colleges and universities. The investigation is crucial as it seeks to provide a nuanced perspective for the construction and improvement of digital libraries in the Chinese higher education context.

2. Literature Review

2.1 System Quality

System Quality measures the support users receive from an information system (Jeong, 2011). The SYSQ consists of the response time, the reliability of the system, and the availability of the system, which had a positive correlation with the PEoU and the PU of the website (Masri et al., 2019). Khan and Qutab (2016) described system quality as usability, accessibility, and compatibility of the information system.

System quality has been widely studied in articles as a significant component of the ISSM model. Jeong (2011) investigated the impact of SYSQ on BI through TAM model analysis. Xu and Du (2018) declared that SYSQ significantly impacted the affinity of PU, PEoU, and digital libraries (DLs) rather than information quality. Salloum et al. (2019) studied the influencing factors of willingness to use e-learning, and the research results showed that system quality, computer efficacy, and computer gaming significantly affect the usability of e-learning systems. 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

The quality of information can typically be characterized by its accuracy, integrity, timeliness, and display format (Nelson et al., 2005). From a library science perspective, INFQ can be seen as the measure of the information's timeliness, accuracy, completeness, and format. The comprehensive abundance of library resources, the excellence of presentation, and other related factors (Hu & Zhang, 2016). The quality of information is contingent upon the individual's perception and evaluation of their personal and external surroundings, which might differ among individuals (Shah & Kitzie, 2012).

Zhou (2011) research on crucial success variables for mobile website adoption concluded that INFQ was the primary determinant of PU. Lee (2009) found that better quality of information improved the mobile data service utilization rate, while poor system quality reduced the utilization rate. Diop et al. (2019) used an extended TAM model to predict and interpret drivers' intentions to use VMS information. Information quality could improve PU and PEoU, significantly affecting the attitude toward route diversion. 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). Xu and Du (2018) definition of PEOU reflected that users think it can be done without the time and effort of using an e-library. In research on MOOCs, PEoU was defined as the extent to which individuals believed that using MOOCs would be effortless (Wu & Chen, 2017).

Prior research has identified a direct association between Perceived Ease of Use (PEoU) and Perceived Usefulness (PU), PEoU and attitudes, and PEoU and intention. The

references cited are Hong et al. (2009) and Wu and Chen (2017). Wallace and Sheetz (2014) pointed out that the PU and the PEoU were vital for measured usage. PEoU also had a direct positive impact on PU. In an online learning example, PEoU is crucial to PU and attitude towards e-learning (Alyoussef, 2022). 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

The Technology Acceptance Model (TAM) posits that an individual's attitude toward a specific technology is influenced by their perception of its usefulness and simplicity. This, in turn, affects their intention and behavior to use the product (Davis et al., 1989). Mustafa et al. (2021) define PU as the degree to which users consider that using e-libraries will improve their efficiency and work performance. In their study on data reuse, 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.

Multiple studies have conclusively shown that PU significantly influenced the inclination to embrace a specific innovative technology. Yoon (2016) found evidence of a direct relationship between PU and the utilization of mobile libraries. It also specifies that organizational factors have a crucial impact on the perceived usefulness and ease of use of technology; consequently, they influence an individual's attitude, intention, and behavior (Mustafa et al., 2021). 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 considered positive or negative emotions towards using some products (Ajzen, 1991). Attitude toward any object will positively influence the use of that object (Kapoor et al., 2014). Joo and Choi (2016) defied the attitude to use as the degree of Users' favorable consideration towards using online libraries' full-text resources.

Enakrire and Ejiro (2012) found that when students find that the content of library resources is related to their subject field, it will positively affect students' attitudes towards using e-library in research tasks. Thus, they would use e-library. In a study by Suki (2016), the more positive the attitude toward Internet information retrieval, the greater the inclination to utilize a library's public computer services. 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 norms refer to an individual's own normative beliefs about the expectations of others (Lee, 2010). Schepers and Wetzels (2007) suggested that SN involves the social pressure exerted on an individual by others (such as family or friends) to behave in a given way. The initial concept of the TAM posited the dual impacts of subjective standards on behavioral intention. According to the definition provided by Agudo-Peregrina et al. (2014), the term under consideration refers to the extent to which an individual experiences a sense of pressure from their social environment.

Hu and Zhang (2016) confirmed that if teachers, classmates, and friends are trusted to use and recommend m-library applications, students will choose to use them in universities. The importance of peer influence in students' decision to adopt e-learning was confirmed by Nanayakkara and Whiddett (2005). Nonetheless, some authors were suspicious that e-learning might be seen as a student's opportunity rather than a collective obligation to students and were skeptical about the importance of subjective norms. (Dueñas-Rugnon et al., 2010). 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

Behavior intention indicates whether the customer would remain (favorable behavior) or withdraw (unfavorable behavior) from the relationship with the service provider (Zeithaml et al., 1996), Including repurchase intention, word of mouth, loyalty, negative comments, and price sensitivity. Chang and Lee (2020). It is a predictive variable for future actions (Tavitiyaman et al., 2021).

Suki (2016) research, the behavioral intention of library users to use public computer facilities will be affected by their self-efficacy, attitude, and subjective norms. Research on data reuse indicated that the social scientists' behavioral intention on data reuse was directly affected by the subjective norms, attitudes, and performed effort of data reuse, and the subjective norms indirectly affect the attitude of data reuse (Yoon & Kim, 2017).

3. Research Methods and Materials

3.1 Research Framework

Based on Xu and Du (2018), Chintalapati and Daruri (2017), and Hu and Zhang (2016), respectively, the authors built this paper's conceptual framework on library users' use of online digital resources (see Fig. 1). The technical and user dimensions are considered when building this paper's framework. The elements affecting LOFR use are more thoroughly described.

Model variable composition: (1) Independent variables: SYSQ, INFQ, SN PU, PEoU, and ATT are intermediate variables; BI is dependent.

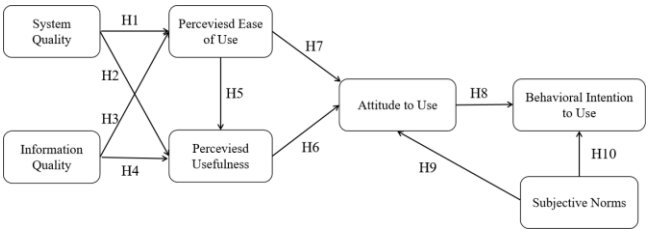

Figure 1: Conceptual Framework

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 examines undergraduates majoring in science who use OLFRs. This study targeted natural science undergraduates from 10 Chengdu undergraduate universities with the most undergraduate students. The study used a quantitative survey method. The questionnaire used quota and snowball sampling. The instrument of this study was a quantitative questionnaire. The researcher developed a questionnaire based on previous studies. A two-part questionnaire assessed the conceptual framework and tested the hypotheses. The questionnaire began with an introductory section that briefly explained the study's research objectives.

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 targeted Chengdu undergraduates with full-text library experience for this investigation. The writers will step-by-step investigate user usage habits by professional background. This study examined science undergraduates who use library e-resources. The target demographic is undergraduate students with a natural science background and OLFR experience at one of Chengdu's ten universities.

Soper (2020) created a computer algorithm to determine the study sample size. According to Soper (2020), the sample size should be 425. Given the risk of faulty questionnaires, the researcher chose 500.

3.4 Sampling Technique

The study employed quota sampling. The researcher obtained data on the total count of undergraduate students enrolled in colleges and universities in Chengdu. The researcher identified the ten colleges and universities with the highest student enrollment from this dataset. The survey will be distributed in a manner that is proportionate to the number of students at each institution. Simultaneously, it was verified that the responses had a disciplinary background encompassing the fundamental fields of science, technology, agriculture, and medicine within the natural sciences. Given the researcher's social network constraints, achieving the quota sampling outlined in Table 2 proved challenging. As a result, snowball sampling was employed as a supplementary method to complement the quota sampling. The researcher

enlisted teachers in the designated schools to administer the questionnaires to students, who were then instructed to share the questionnaires with their peers via social media platforms. This approach aimed to maximize the respondents' representation of various academic subjects.

Table 1: Sample Units and Sample Size

Institutions	Proportional Sample Size
Xihua University	59
Sichuan University	59
Sichuan Normal University	57
Sichuan Agricultural University	57
Southwest Minzu University	51
Southwest Petroleum University	47
Chengdu University of Technology	46
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 261, accounting for 52.20% of the total respondents, and the number of female participants is 239, accounting for 47.80%. According to the distribution of different disciplines, the number of participants in science is 128, accounting for 25.60% of the total respondents; the number of participants in Engineering is 288, accounting for 57.60%; and the number of participants in Agriculture is 46, accounting for 9.20%; the number of participants in Medicine is 38, accounting for 7.60% of the total respondents.

Table 2: Demographic Profile

Demographic and General Data (N=500)		Frequency	Percentage
Gender	Male	261	52.20%
	Female	239	47.80%
Discipline	Science	128	25.60%
	Engineering	288	57.60%
	Agriculture	46	9.20%
	Medicine	38	7.60%
Frequency of Using LOFRs	barely never	13	2.60%
	One time per week or less	190	38.00%
	1-2 times per week	206	41.20%
	3 times per week or more	91	18.20%
Favorite Platform (s)/Database(s)to Get LOFRs	CNKI	357	71.40%
	Wafang	129	25.80%
	CQVIP	181	36.20%
	Elsevier	47	9.40%
	EBSCO	79	15.80%
	Emerald	25	5.00%
	Chaoxing eBooks	177	35.40%
	Springer	38	7.60%
	Others	5	1.00%
Purpose of using LOFRs	barely never	5	1.00%
	Daily learning	276	55.20%
	Thesis writing	366	73.20%
	Project research needs	343	68.60%
	Others	1	0.20%

4.2 Confirmatory Factor Analysis (CFA)

The researcher utilized CFA to determine how well factors and measurement items (scale items) match their expectations. Validation and standard method variance analysis are confirmatory factor analysis's main goals (CFA) goals. For scale validation factor analysis, the researcher employs AMOS 22.0. AMOS created the CFA model first. The measurement model's convergent validity is reliable if three criteria are met. (1) The factor loadings of the measurement model questionnaire items are statistically significant and more than 0.7. (2) The hidden variable's average value (AVE) is greater than 0.5. (3) The composite reliability of the questionnaire questions that measure the same latent variable is more than 0.7.

Table 3 summarizes the convergent validity indices for each dimension of the questionnaire. The factor loading coefficients for each variable exceed 0.7, the combined reliability (CR) surpasses 0.7, and the average variance extracted (AVE) is higher than 0.5. The above data indicate a strong correlation between the variables and question items, demonstrating good overall validity. The questionnaire used in this study exhibits robust convergent validity.

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)	0.875	4	0.775-0.824	0.885	0.658
Information Quality (INFQ)	DeLone and McLean (1992)	0.941	6	0.795-0.818	0.918	0.651
Perceived Ease of Use (PEOU)	Davis (1989)	0.883	3	0.819-0.853	0.874	0.698
Perceived Usefulness (PU)	Davis (1989)	0.869	3	0.851-0.859	0.891	0.732
Subjective Norm (SN)	Ajzen (1991)	0.907	3	0.811-0.849	0.868	0.687
Attitude to Use (ATT)	Ajzen (1991)	0.801	3	0.819-0.852	0.875	0.700
Behavioral Intention to Use (BI)	Ajzen (1991)	0.899	3	0.837-0.856	0.885	0.719

To validate the model's GOF in both science and social science groups, this paper used absolute fit metrics (e.g., CMIN/DF, GFI, AGFI, and RMSEA) and incremental fit metrics for CFI, NFI, and TLI. Table 4 shows that all measures satisfy thresholds.

Table 4: Goodness of Fit for Measurement Model

Fit Index	Acceptable Criteria	Statistical Values
CMIN/df	<5 (Chang, 2012)	1.595
GFI	≥0.90 (Wu & Chen, 2017)	0.941
AGFI	≥0.90 (Chang, 2012)	0.924
RMSEA	＜0.08 (Zhou, 2011)	0.035
NFI	≥0.90 (Chang, 2012)	0.955
CFI	≥0.90 (Chang, 2012)	0.983
TLI	≥0.90 （Wu & Chen, 2017)	0.980
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.

To further confirm the accuracy of the sample, a discriminant validity analysis was conducted on the sample, and the results can be found in Table 5. The values located on the diagonal reflect the square root of AVE, whereas the remaining data consists of correlation coefficients that indicate the correlation between the variables. Table 6 shows that all correlation coefficients are below the square root of AVE, and the correlation between any two latent variables is less than 0.80. This suggests some correlation and differentiation between the variables in question. The scale demonstrates optimal data differentiation validity.

Table 5: Discriminant Validity

	SYSQ	INFQ	PEOU	PU	SN	ATT	BI
SYSQ	**0.811**						
INFQ	0.608	**0.807**					
PEOU	0.527	0.564	**0.835**				
PU	0.573	0.551	0.57	**0.856**			
SN	0.592	0.535	0.577	0.56	**0.829**		
ATT	0.568	0.526	0.506	0.563	0.588	**0.837**	
BI	0.601	0.577	0.487	0.542	0.579	0.606	**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)

A statistical tool called structural equation modeling (SEM) uses the covariance matrix to investigate variable relationships (Lin et al., 2021). Structural equation modeling requires theoretical a priori. This study's model and sample data meet SEM requirements because the questionnaire passed reliability and validity testing.

First, AMOS 22.0 creates an SEM model of undergraduates' behavioral intention. Path analysis is performed after importing questionnaire survey data to evaluate the model's goodness of fit.

Table 6: Goodness of Fit for Structural Model

Index	Acceptable	Before Adjustment Statistical Values	After Adjustment Statistical Values
CMIN/df	<5 (Chang, 2012)	3.981	1.990
GFI	≥0.90 (Wu & Chen, 2017)	0.862	0.924
AGFI	≥0.90 (Chang, 2012)	0.831	0.906
RMSEA	＜0.08 (Zhou, 2011)	0.077	0.045
NFI	≥0.90 (Chang, 2012)	0.884	0.943
CFI	≥0.90 (Chang, 2012)	0.91	0.971
TLI	≥0.90 （Wu & Chen, 2017)	0.898	0.966
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

Table 7 displays the outcomes of hypothesis testing. The t-value is determined by the significant P-value of the critical ratio (CR), where the standard error of the estimated parameters (SE) is taken into account. Generally, if the absolute value of the CR coefficient exceeds 1.96, it indicates a significant difference at the 0.05 significance level. If the absolute value of the CR coefficient exceeds 2.58, it indicates a significant difference at the 0.01 level of significance, and the significance P-value is denoted by "**." If the absolute value of the CR coefficient exceeds 3.29, it indicates a

significant difference at the 0.001 level of significance, and the p-value of significance is represented as "***."

Table 7: Hypothesis Results of the Structural Equation Modeling

Hypothesis	(β)	t-value	Result
H1: SYSQ→PEOU	0.352	5.844***	Supported
H2: SYSQ→PU	0.352	5.876***	Supported
H3: INFQ→PEOU	0.400	6.701***	Supported
H4: INFQ→PU	0.184	3.157**	Supported
H5: PEOU→PU	0.308	5.434***	Supported
H6: PU→ATT	0.329	5.715***	Supported
H7: PEOU→ATT	0.129	2.306*	Supported
H8: ATT→BI	0.424	7.511***	Supported
H9: SN→ATT	0.414	7.931***	Supported
H10: SN→BI	0.407	7.159***	Supported

Note: *** p<0.001, ** p<0.01, * p<0.05
Source: Created by the author

Research Hypothesis H1: Concerning the correlation between system quality and perceived ease of use. The subsequent analysis proceeds: The standardized route coefficient β was 0.352, with a t-value of 5.844***, indicating a medium effect size. This suggests that the hypothesis is valid. The quality of the system indeed impacted perceived ease of use. The assessment of system quality by college students influences their perception of the ease of use of resources in an intelligent library, a web-based information system (Chang et al., 2015; Li & Liu, 2023).

Research Hypothesis H2: The path analysis results indicate the relationship between system quality and perceived usefulness. The standardized path coefficient β is 0.352, and the t-value is 5.876***, indicating a statistically significant effect and supporting the validity of the hypothesis. The perceived usefulness of the system is determined by its quality. These findings suggest that the utilization of OLFRs in mobile learning settings is influenced by variables such as performance and execution speed (Li & Liu, 2023).

Research Hypothesis H3: The path analysis results reveal a substantial association between information quality and perceived ease of use. The standardized path coefficient β is 0.400, with a t-value of 6.701***, indicating a significant effect. Therefore, the hypothesis is legitimate. Evidence demonstrates that the quality of information has a substantial and favorable impact on the perception of how easy it is to use. Users' opinions of the ease of use of resources can be influenced by their belief that the information they receive is timely, comprehensive, and reliable.

Research Hypothesis H4: The path analysis results indicate the association between information quality and perceived usefulness. The standardized path coefficient β is 0.184, and the t-value is 3.157**, indicating a significant effect and supporting the validity of the hypothesis. Information quality has a direct impact on the perceived utility. Users' perception of the resource's ease of use is contingent upon their belief that the information provided is timely, comprehensive, and trustworthy.

Research Hypothesis H5: The route analysis results indicate the association between perceived ease of use and perceived usefulness. The standardized path coefficient β is 0.308, and the t-value is 5.434**, indicating a statistically significant effect and supporting the validity of the hypothesis. The impact of perceived ease of use on perceived usefulness has been extensively validated in prior research. If users consider an online full-text database to be more user-friendly, they will believe that utilizing the system will enhance their work performance (Chen & Tsai, 2019; Li & Liu, 2023).

Research Hypothesis H6: The route analysis demonstrates the correlation between the perceived usefulness and the attitude towards usage. The standardized path coefficient (β) is 0.329, and the t-value is 5.715 with a significance level of three asterisks (***). This corroborates the notion that the impact is statistically significant. Empirical data indicates that the perception of usefulness positively impacts attitudes towards usage. Library users demonstrate an increased frequency of utilization when they perceive a system or resource as beneficial. This behavior facilitates the pursuit of individual benefits (Okyere-Kwakye & Md Nor, 2020).

Research Hypothesis H7: The route analysis shows that perceived ease of use affects attitude to use. The standardized path coefficient (β) is 0.129, with a t-value of 2.236*. This confirms the hypothesis and shows a considerable effect. The effect is weaker than other hypotheses. This shows that perceived ease of use positively affects use attitude in this investigation. Okyere-Kwakye and Md Nor (2020) found that university students find online libraries more flexible and user-friendly than print media while searching for information. This may explain why Chinese university libraries borrow fewer books and use more electronic resources.

Research Hypothesis H8: Regarding the relationship between usage attitudes and usage behaviors, the results of path analysis are as follows: the standardized path coefficient coefficient β is 0.424, and the t-value is 7.511***, 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: Route analysis shows subjective norms affect attitude. Based on the standardized

path coefficient β of 0.414 and the t-value of 7.931***, the hypothesis is supported by statistical significance. According to research, subjective criteria strongly impact people's perceptions regarding online financial resources. Numerous scholars have linked subjective standards, attitudes, and behavioral intents in TRA and TPB theories.

Research Hypothesis H10: The route analysis results indicate the relationship between subjective norms and behavioral intention. The standardized path coefficient β is 0.407, and the t-value is 7.159***, indicating a statistically significant effect and supporting the validity of the hypothesis. Prior research has indicated that external factors, such as the influence of others, can impact an individual's inclination to utilize information resources. Additionally, students may feel compelled to utilize library materials due to the expectations set by their academic or course instructors (Connaway & Randall, 2013; Mustafa et al., 2021; 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 data collected were validated through the validated factor analysis (CFA) approach using AMOS Structural Equation Modeling (SEM) to test the validity of the hypotheses about the factors influencing the use of full-text digital library resources by students from social science backgrounds. The analysis results showed that all the proposed hypotheses were strongly supported.

Attitude Toward Use (ATT) had the most significant direct effect on Behavioral Intentions (BI), while Subjective Norms (SN) had the most considerable total effect on Behavioral Intentions (BI). In addition, Information Quality (INFQ) and System Quality (SYSQ) significantly influenced Perceived Ease of Use (PEoU). They indirectly positively influenced Behavioral Intentions (BI) through Perceived usefulness (PU) and Attitude towards Use (ATT). This study is devoted to an in-depth investigation of the critical factors affecting online full-text library resources (OLFRs) by undergraduate students from different disciplinary backgrounds regarding two core dimensions: users and technology. By constructing an exhaustive behavioral model, we confirmed its theoretical value and verified its practical validity through empirical research, ensuring consistency with established studies.

5.2 Recommendation

Firstly, University libraries are crucial to the "three comprehensive education." Modern university libraries aim to develop college students' information literacy and increase library resource use in addition to document collection and cultural inheritance. This study shows that subjective behavioral standards and attitudes affect users' utilization propensity. Libraries have several established digital resource promotion instances. IFLA's Toolkits framework for promoting school libraries describes using the Internet to connect with other librarians in similar roles, promote library activities, and refer to global solutions and program announcements (Subramaniam et al., 2021). Second, library advocacy must examine societal impact. SN1—"In my discipline, it is expected that a university student has to use online library's full-text resources"—had the greatest impact on subjective behavioral norms, research suggests—text resources" most influence subjective behavioral standards. Thus, the life circle's impact on users should be considered while promoting the library's digital resources with colleges and student organizations.

Secondly, library users—undergraduates, graduate students, and faculty—should realize that their subjective initiative is the key to increasing information literacy. If users believe a system or resource is valid, they will actively use and reuse it, creating a circle of net personal gain. Colleges and universities, especially undergraduates, have many introductory courses and club activities, making it hard for students to find time and motivation to learn about digital libraries and how they can help them. At this point, libraries must go into readers, starting with new student education and user training to help users realize the importance of library resources to become beneficiaries and the main body of reading promotion, promoting a book-scented campus and a learning society.

Thirdly, this study demonstrated a favorable association between system quality and information quality on willingness to sustain use. Functionality, quality, interface, and service affect users' view of the utility and ease of use of digital libraries. Digital resources can be shared and distributed without time or place limits with online library resources. When constructing library services and systems, user usefulness should be addressed. Therefore, university libraries might ask service providers to increase user access in several ways. First, enhance college online library services and optimize the digital library infrastructure. Users find the digital library system straightforward to use.

Connecting the digital library login and campus systems reduces account registration and loss. To improve system stability, the digital library interface can be reduced to emphasize searching and downloading, and technicians can do regular maintenance. Second, regularly update and enrich

the database. Low-budget university libraries can collaborate with others to improve literary delivery, proportion, and shared resources. Third, create mobile phone client apps.

5.3 Limitation and Further Study

Although the current research methodology strives for rigor, there are some limitations. First, the subjects of this study were all undergraduate students in Chengdu; given that people from different countries and educational levels have different habits of using literature resources, caution must be exercised in generalizing the findings to people from other cultural backgrounds and educational levels. No moderating variable study has been done on students with segmented professional backgrounds, so further exciting conclusions about the influence of professionals. Secondly, regarding the study population, this study is only on undergraduate students. The users of college libraries are undergraduates, graduate students, faculty members, and librarians. In future research, the research object can be expanded to improve the study of users' willingness to continue using digital libraries in colleges and universities. In addition, the group that has graduated can be added as the research object. By comparing the behavioral willingness of current students and graduates, further strong suggestions can be made for cultivating lifelong learning ability.

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