pISSN: 1906 - 3296 © 2020 AU-GSB e-Journal.
eISSN: 2773 – 868x © 2021 AU-GSB e-Journal.
https://assumptionjournal.au.edu/index.php/AU-GSB

Major Factors Impacting Behavioral Intentions to Use Mobile Library Platforms Among Female Undergraduate Students in Chengdu, China

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Received: March 22, 2024. Revised: July 22, 2024. Accepted: February 22, 2025.

Abstract

Purpose: This study intends to investigate the major factors impacting female students' behavioral intention toward mobile library platforms (MLPs) in private universities in Chengdu, China. The key variables are system quality, perceived ease of use, perceived interaction, perceived usefulness, use attitude, information technology, social influence, and behavior intention. **Research design, data, and methodology:** Quantitative techniques were used to obtain data from the sample group of female undergraduate students in selected universities, such as a questionnaire as an instrument. IOC and pilot testing were used to assess the content validity and reliability of the questionnaire before distribution. The data were analyzed using Confirmatory factor analysis (CFA) and structural equation modeling (SEM) to assess the appropriateness of the model and establish causal relationships between the variables to test the hypotheses. **Results:** According to the research, the conceptual model accurately predicted private college students' behavioral intention to use MLPs. Information technology, perceived usefulness, and attitude towards using are three important factors that influence the adoption of MLPs in the field of behavioral Intention. **Conclusions:** Behavioral intention prediction was most directly influenced by information technology. Thus, the emphasis should be on how female undergraduates at private universities assess the mobile library application and its impact on their performance.

Keywords: Mobile Library Behavioral Intention, Attitude, Information Technology, Social Influence

JEL Classification Code: E44, F31, F37, G15

1. Introduction

They are changing people's daily activities, especially mobile libraries. Firstly, mobile network and device improvements have elevated mobile information services to a crucial routine element, enabling access to information from any location at any given moment, a defining characteristic of mobile technology. Additionally, internet technology has promoted the shift from conventional paper-based reading to reading on electronic devices. New technologies have diversified the reading industry, and devices such as mobile phones, tablet computers, and e-readers have made reading more convenient and freer from time and place constraints. Portable reading devices are essential for advancing the progress of mobile reading (Liu & Cheng, 2022).

Mobile libraries employ mobile phones and other platforms, combining library applications with mobile devices to create an innovative reading medium. The mobile media type is popular due to its high penetration rate, interactivity, powerful features, and portability, making it particularly appealing to the younger generation. Due to the widespread use of mobile phones, certain Internet companies and universities have incorporated mobile network technology into library services to create mobile libraries. This initiative aims to enhance library accessibility and usage among college students with a high mobile phone ownership rate (Zhou & Fu, 2013).

The mobile library platform (MLP) is the application or service that enables users to access library services and information resources using different devices and wireless

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networks, regardless of time and location. The primary feature of mobile library service is its ability to move, and libraries must provide immediate services to users via their portals as information centers (Liang, 2012). Digital resources are essential for creating mobile libraries and are necessary to provide all services. The digitalization and mobilization of resources need technological assistance, which imposes more demands on the library's information resource system and service network development.

Mobile library platforms have garnered significant interest from college students. An investigation into the behavioral inclination of women to adopt new technologies, as well as the sustained utilization of such platforms, will contribute significantly to the advancement of mobile libraries in the future. Recently, China has focused more on educating and promoting reading among the new generation of women. Therefore, studying female interest in accessing online education and mobile reading technologies has become a significant research subject. Women in a few locations and societal contexts may need more educational resources. Mobile library applications provide a wider and more convenient method for users to access knowledge, compensating for the lack of traditional educational resources (Li et al., 2019). Many universities contend that m-library services often provide personalized learning assistance functions that suggest appropriate academic materials according to individual requirements. This positively influences the fulfillment of female university students' individualized learning requirements and preferences, fostering their enthusiasm for acquiring information. Considering they make up most of the target audience, college students are crucial to the growth of mobile library services. An important component for the development of the library. The primary demographic for mobile library services, college students, is also crucial to their growth and development, according to the research (Hu & Zhang, 2016). There is a high demand for book searches, reservations, and information resources among China's university students, who have a smartphone adoption rate of 100%. The high volume of first downloads indicates that the m-library is well-liked (Jia & Dong, 2014).

According to the 2020 "Product Marketing Insights Report on Digital Reading in China" by iResearch Institution, 60.5% of the students surveyed were male and 39.5% were female. Mobile library developers, college teachers, and college libraries need to understand female college students' reading habits and preferences to improve the effectiveness of higher education.

Additionally, several Chinese universities have benefited from m-library to improve students' enthusiasm for library resources, according to Hu and Zhang (2016). Many university libraries encounter many students as individuals. Under the Ministry of Education's "211 Project" and the "985 Project," mobile services for instructors and students have been introduced at China's most important educational institutions. The development and use of mobile libraries are increasingly becoming a competitive arena between public and private institutions.

Investigating the behavioral intentions of private universities regarding adopting new technologies like mobile library applications has significant implications, including educational innovation and quality improvement. Private universities typically possess more managerial flexibility and opportunities for innovation (Liu & Cheng, 2022). Looking into their behavioral intentions about mobile library applications might provide insights into the creative practices of these institutions in education and how new technology can enhance educational quality. Secondly, optimizing the learning experience involves using new technology, like mobile library applications, to provide students with a more adaptable and comfortable learning environment. Studying the application behaviors of private colleges in this area might provide insights into how they use technology to enhance the learning experience for students and make it more engaging and efficient (Zhou & Fu, 2023). Thirdly, exploring how students of private universities employ mobile library applications sheds light on how these institutions cater to the digital needs of modern students and align education with societal and technological advancements (Zheng & Xu, 2022). Improving the accessibility of educational resources may be done by using mobile library apps to provide students with a wider range of educational materials. Studying the behavior of applications to private institutions may reveal their efforts to provide students with better access to resources. Examining the utilization of new technologies by private colleges may assist in recognizing creative practices and challenges in education and promoting enhanced cooperation among the government, schools, and companies to propel educational reform and advancement (Deng & Yang, 2007). Moreover, studying how students from private universities apply new technologies can help identify innovative practices and issues in education, fostering better collaboration among governments, schools, and businesses to promote education reform and advancement.

In summary, examining private universities' behavioral intentions regarding the implementation of emerging technologies, such as mobile library applications, can yield valuable insights into educational development trends and advancements. Moreover, such studies can serve as reference materials to enhance educational standards, address student needs, and advance educational reform.

2. Literature Review

2.1 System Quality

System quality was found to be correlated with the perceived efficacy of the service. According to the findings of one study (Lederer et al., 2000), system quality also significantly impacts users' perceptions of the system's quality. Hassanzadeh et al. (2012) conducted a study to evaluate the effectiveness of mobile learning systems integrated into higher education institutions. It was ascertained that the system's efficacy significantly influenced user loyalty, objective achievement, and system quality. Lee and Chung (2009) investigated the influence of the system's quality on the confidence that users have in a technological adoption environment. Within the framework of this discussion, they highlighted trust as an essential component. Previous studies have highlighted the significance of system quality, particularly in online communities and e-commerce (Ahn et al., 2007; Teo et al., 2003). This is especially true of social networking sites. Introducing mobile libraries with practical, professional, and customized services may highlight the pros and cons of their service quality. Suppose a college student has a favorable experience with a high-quality system, information, and service while using a mobile library application. In that case, they will gain crucial knowledge about the program, enhancing their learning effectiveness (Hu & Zhang, 2016). The following hypotheses were derived from the previously given assumptions:

H1: System quality has a significant impact on perceived usefulness.

2.2 Perceived Ease of Use

Watjatrakul (2013) stated that, in the absence of specific criteria, consumers tend to develop a propensity to see technology as usable and beneficial. Davis (1993) and Teo (2009) previously defined perceived ease of use in the context of the Technology Acceptance Model (TAM). They additionally discussed how perceived usefulness influences actual usefulness. They contended that an individual's perception of a system's ease of use directly impacts their trust in its capacity to improve their job performance. Their attitude towards the system influences consumers' potential intention of using the information system. The application of attitude is a cognitive phenomenon that several scholars have thoroughly researched. It pertains to how a person perceives a technology's ease of use and usefulness in a certain situation. There is a clear link between generally seen traits, including reported ease of use and perceived usefulness, that may be a causal connection. It is important to recognize that additional factors might immediately influence both the perceived ease of use and the perceived usefulness.

Since perceived interaction is crucial for enhancing learners' problem-solving skills, instructors are more motivated to help students improve their capacity to access and incorporate learning materials into the system independently. Students benefit from perceived interaction while learning to install software and access information since it pushes them to approach challenges broadly and straightforwardly (Herrington & Oliver, 2000). Learners might perceive their engagement with the learning content on the online platform, which affects their perception of the scope of the learning environment and the depth of understanding facilitated by the instructional materials (Bricken, 1991; Byrne, 1996; Sanchez et al., 2000; Zeltzer, 1992). The perception of instrument effectiveness significantly influences people's adoption of a new learning approach in education. How they assess perceived interaction and perceived ease of use impacts this perception. Lee and Kim (2009) and Huang et al. (2016) examine the components contributing to this occurrence. If the learning system provides barriers that impede the educated individual's ability to navigate and apply it, learning effectiveness may decline.

According to the results of Davis (1986), the Technology Acceptance Model (TAM) suggests that an individual's attitude toward using a system can impact their behavioral intention to embrace and utilize the technology (Shih & Fang, 2004). Two characteristics within recognized scientific literature are important influences on attitudes towards usage. Perceived ease of use and perceived usefulness are other crucial features that must be considered. Agarwal and Prasad (1999) state that the main emphasis of a certain service or technology is on the user. When interacting with the service or using a particular technology, the user's perception of how simple it is to use has an ongoing impact. Venkatesh (2000) and Bashir and Madhavaiah (2014) discussed the relationship between perceived ease of use (PEUs) and perceived usefulness (PUs) in the technology adoption model inside information systems, emphasizing their significant impact that should be noticed. The following hypotheses were derived from the previously given assumptions:

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

H3: Perceived ease of use has a significant impact on perceived interaction.

H4: Perceived ease of use has a significant impact on use attitude.

2.3 Perceived Usefulness

Previous academic research studies have shown a link between perceived usefulness and use attitude (Agarwal & Prasad, 1999). Nagy et al. (2018) also found a causal relationship between use attitude and perceived usefulness in the following investigation. Studies in information technology have shown that perceived usefulness positively influences user adoption of information technology systems, as shown by research done by Venkatesh (2000) and Bashir and Madhavaiah (2014). Celik (2008), Sum Chau and Ngai (2010), Cheng et al. (2006), and Chiou and Shen (2012) all supported this concept in their investigations. Alagoz and Hekimoglu (2012) define perceived usefulness as influencing an individual's attitude toward a mobile system or technology. Perceived usefulness positively impacts the attitude towards using a service or system within the electronic services sector. Clients view perceived usefulness as one of the elements influencing their attitude toward electronic technology or systems when making a purchase decision.

Pipitwanichakarn and Wongtada (2021) and other studies have discovered that an individual's opinion of their own perceived usefulness significantly influences their behavioral intention. Alagoz and Hekimoglu (2012) said that customers' behavioral intentions while using a system or technology may be predicted based on how beneficial they consider it. In their research, Hart and Henriques (2006) investigated the correlation between perceived usefulness and behavioral intention. The findings showed a significant immediate impact of perceived usefulness on people's behavioral intentions. Gefen et al. (2003) delved further into online educational technologies. They also examined the technology acceptance model within the realm of sophisticated buying. Their research indicated a correlation between perceived usefulness and behavioral intention. Dele-Ajayi et al. (2019) suggested that an individual's propensity to take advantage of an instrument or platform may be influenced by how valuable and perceived easy to use they consider it to be. According to Wu et al. (2016), a technology's perceived value significantly impacts one's behavioral intention when using it for the first time. The following hypotheses were derived from the previously given assumptions:

H5: Perceived usefulness has a significant impact on use attitude.

H6: Perceived usefulness has a significant impact on behavioral intention.

2.4 User Attitude

Use attitude is frequently regarded as the primary factor influencing behavioral intention, as stated by Perry (2017). Rotchanakitumnuai and Speece (2009) found that the use attitude was the main predictor of behavioral intention in their investigation. Past acquaintance with a certain technology has been identified as the main predictor. To anticipate a person's involvement in a certain event, such as the many personality characteristics of students who use a mobile library platform, one must study and understand the primary determining factor, the use attitude (Davis, 1993). Klobas (1995) conducted research that found associations showing that consumers' behavioral goals significantly influence their opinions about the technology.

Furthermore, research has shown that consumer perceptions significantly influence their willingness to adopt the technology. Hofstede (2011) has shown that people with less technological exposure can acquire a very unclear psychological viewpoint. As consumers are required to assess the purpose of certain items, their confidence in those products shifts to different extents, demonstrating a forward-thinking approach to behavioral intention.

Bobbitt and Dabholkar (2001) found that attitudes toward using technology significantly impacted factors, including business intelligence when predicting the use of self-service technology. The positive correlation between user attitude and behavioral intention has been supported and reaffirmed under the concept of rational conduct as proposed (Ajzen & Fishbein, 1980). The following hypotheses were derived from the previously given assumptions:

H7: Use attitude has a significant impact on behavior intention.

2.5 Information Technology

Yun (2008) reported that the Technology Acceptance Model (TAM) is widely recognized in the information technology industry, and researchers regularly employ this model to expedite the creation of new technological innovations.

The TAM includes thorough empirical studies focused on evaluating the usability of information technology for new technologies or systems. Integrating new technology or implementing new systems in these studies may somewhat enhance their progress (Kim & Park, 2012). Wang et al. (2018) created a study paradigm that examines attitudes and intentions toward mobile library use from an information ecology viewpoint, including information technology and three other factors. Studies may determine the impact of information technology and attitudes toward its use on certain variables by analyzing sufficient data. The study shows that these factors have significant impacts on behavioral intentions. It guarantees the quality of all mobile libraries and system services. Individuals usually evaluate the quality of a system via information technology, which in turn influences their assessment of technology and intention

to act (Huang et al., 2015).

The evolution of new media technologies throughout the Internet has resulted in consumers restricting their use of items on certain platforms and devices (Vongurai, 2022). Classifying network devices and platforms into specific technology categories might impact what users see and choose when using new technologies. The following hypotheses were derived from the previously given assumptions:

H8: Information technology has significant impact on behavior intention.

2.6 Social Influence

Klobas (1995) performed research that found a set of connections indicating that users' attitudes regarding technology may be accurately predicted by their behavioral intentions. Prior studies have shown that social influence positively impacts behavioral intentions toward many technologies, including mobile library platform technologies (Taylor & Todd, 1995; Venkatesh & Brown, 2001; Venkatesh et al., 2003). Two separate studies have shown that social influence (SI) significantly influences behavioral intention (BI) (Jairak et al., 2009). The findings described above provide evidence that the influence of social variables on behavior should not be ignored. The authors support this claim by highlighting the relationship between behavioral intention and social effect in the context of online education within the larger area of education (Chaka & Govender, 2017). The following hypotheses were derived from the previously given assumptions:

H9: Social Influence has a significant impact on behavior intention.

2.7 Perceived Interaction

A platform allowing users to access information as needed and maintain control over the material may provide clients with a higher degree of online personalization and interaction (Song & Zinkhan, 2008). Scholars have focused on the connection between perceived interaction and the learning process in contemporary educational settings from a different viewpoint (Bruffee, 1982; Flanders, 1970; McCroskey et al., 1976; Salomon, 1981; Shuy, 1987). Recent technological advancements have led to more studies focusing on perceived interaction in new interactive educational settings, as opposed to previous research on traditional platforms (Mazursky & Vinitzky, 2005).

2.8 Behavior Intention

This explanation was provided in the research. Ajzen (1991) offers a different explanation. The person believes behavioral intention refers to consumers' propensity to participate in a certain behavior rather than emphasizing its frequency as often perceived. In addition to the studies described above, researchers proposed that behavioral intention may be used to measure the amount of effort anticipated from an individual user to participate in a certain activity (Ajzen & Fishbein, 1980). The explanation provided earlier outlines the methods used for doing literature research on the variable behavioral intention. Subsequent researchers have asserted that behavioral intention directly predicts authentic user behavior (Qin et al., 2019). In a study in the same year, a researcher found that behavioral intention was a crucial indicator for the acceptance of a certain technology or system.

3. Research Methods and Materials

3.1 Research Framework

The Technology Acceptance Model showed a connection between learners' positive attitudes toward virtual reality learning platforms and environments (Huang & Liaw, 2018). However, it is not guaranteed that creating an e-learning mobile library platform will lead to students using it consistently for self-study (Liu et al., 2021). Various theoretical frameworks, including technological acceptance models (TAMs), integrated theories of technological acceptance and usage, and theories of planned action, have been used in recent research to investigate the factors influencing individuals' acceptance and use of technological innovations (Gan & Song, 2015; Gan et al., 2017; Joo et al., 2014; Liu et al., 2010). An extensive study has been conducted to explore the motives of those who use library services. The study used the Technology Acceptance Model (TAM) to analyze the behavior of library users in Jordan. The main goal was to identify the characteristics that impact these consumers' acceptance and usage of library services (Davis, 1993). The factors that had the most significant effect on consumer behavioral intention were perceived utility, social influence, and perceived simplicity of use.

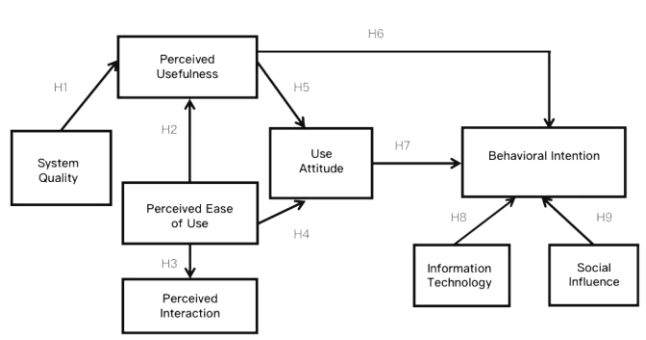

Figure 1: Conceptual Framework

H1: System quality has a significant impact on perceived usefulness.
H2: Perceived ease of use has a significant impact on perceived usefulness.
H3: Perceived ease of use has a significant impact on perceived interaction.
H4: Perceived ease of use has a significant impact on use attitude.
H5: Perceived usefulness has a significant impact on use attitude.
H6: Perceived usefulness has a significant impact on behavioral intention.
H7: Use attitude has a significant impact on behavior intention.
H8: Information technology has significant impact on behavior intention.
H9: Social Influence has a significant impact on behavior intention.

3.2 Research Methodology

This study employed empirical analysis and quantitative techniques, utilizing a questionnaire as the primary data collection method to gather data samples from the target population. Before collecting extensive data, both an item-objective congruence (IOC) test and a pilot test of Cronbach's alpha were conducted to ensure the questionnaire's validity and reliability. The questionnaire's original content underwent evaluation for content validity using the index of item-objective congruence (IOC) technique (Turner & Carlson, 2003). The Item-Objective Congruence (IOC) mandates a minimum score of 0.6. Furthermore, the researchers intentionally selected 50 specific students for the pilot test and evaluated the internal consistency reliability using Cronbach's Alpha coefficient. The resulting Cronbach's Alpha score surpassed 0.7, indicating a dependable measurement of the intended construct and improving the overall reliability of the test results (Nunnally, 1978). Following the reliability test, the questionnaire was electronically distributed to female undergraduate students at three privately owned educational institutions in Chengdu, Sichuan Province, with candidates required to have a minimum of one year of experience with mobile library applications.

To analyze the sample data, this research employed the two-step structural equation modeling (SEM) technique that Anderson and Gerbing (1988) outlined. In the first step, researchers assessed convergent validity through confirmatory factor analysis (CFA) conducted using SPSS and AMOS. Subsequently, an analysis of the hypotheses' efficacy and an examination of the causes and effects of each dimension in the conceptual model were performed using structural equation modeling (SEM). One notable advantage of SEM is its ability to simultaneously examine multiple dependencies, which is particularly beneficial when the model involves direct and indirect effects between structures (Hair et al., 2010).

3.3 Population and Sample Size

Undergraduates from three private institutions in Chengdu, Sichuan Province, participated in the research. The students have been employing the m-library for at least a year. Participants must be acquainted with m-library and have previous expertise in deploying it. Based on a priori considerations, Soper (2006) created a sample size calculator for structural equation modeling (SEM). The minimum required sample size is 444, according to the sample size calculator. The researcher used a significance threshold of 0.05 and conducted 500 questionnaires, including eight latent variables and 30 observable variables, to assess the reliability of the responses.

3.4 Sampling Technique

The sample process used a multi-stage approach that included judgment, stratified random, and convenience sampling. Three private schools and institutions in Chengdu, Sichuan, China, were selected using judgmental sampling. Stratified random sampling was used to establish the sample size for each institution or sample strata, as illustrated in Table 1.

Table 1: Sample Units and Sample Size

The Three Targeted Private Universities	Population Size	Proportional Sample Size
Sichuan University of Media and Communications (SUMC)	21230	172
Sichuan Film and Television University (SFTU)	19867	176

The Three Targeted Private Universities	Population Size	Proportional Sample Size
Geely University of China (GUC)	10230	152
Total	**51327**	**500**

Source: Constructed by author

4. Results and Discussion

4.1 Demographic Information

Table 2 presents the demographic characteristics of the 500 participants. The participants were female students from three educational institutions: 172 from Sichuan University of Media and Communications, accounting for 34.4%; 176 from Sichuan University of Media and Communications, representing 35.2%; and 152 from Geely University of China, making up 30.4%. 22.40% of students were in their first year, 27.20% in their second year, 25.00% in their third year, and 25.40% in their fourth year.

Table 2: Demographic Profile

Demographic and General Data (N=500)		Frequency	Percentage
University Belong	Sichuan University of Media and Communications	172	34.4%
	Sichuan Film and Television University	176	35.2%
	Geely University of China	152	30.4%
Academic Year	Freshman	112	22.40%
	Sophomore	136	27.20%
	Junior	125	25.00%
	Senior	127	25.40%

4.2 Confirmatory Factor Analysis (CFA)

According to Hair et al. (2010), confirmatory factor analysis (CFA) is a crucial component of structural equation modeling (SEM). Educational scholars, such as Tschannen-Moran et al. (2013), argue that using CFA offers a more accurate way to understand the differences in variables studied in research on students' views and feelings about their school and teachers. Convergent validity may be evaluated quantitatively using statistical measures like Cronbach's alpha reliability, factor loading, average variance extracted (AVE), and composite reliability (CR). As Fornell and Larcker (1981) suggested, researchers used a goodness-of-fit measure of 0.70 or higher and an average variance extracted (AVE) value of 0.4 or higher to see if the structural model was suitable. All CR values in Table 3 are over 0.7, indicating statistical significance for most estimates. Two items have an average rating below 0.5.

Killingsworth et al. (2016) used Cronbach's alpha approach to evaluate the internal consistency of the components inside the construct. Cronbach's alpha was used to assess the scale's reliability and validity. The recorded values ranged from 0 to 1 (Tabachnick & Fidell, 2007). A higher alpha value indicates more consistency in the measurements, reflecting better reliability. According to George and Mallery (2019), a Cronbach's alpha score of 0.7 or above indicates satisfactory reliability. All Cronbach's alpha values in Table 3 exceeded the 0.7 threshold.

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)	Hu and Zhang (2016)	3	0.833	0.700-0.847	0.837	0.633
Perceived Interaction (PI)	Liu et al. (2010)	3	0.744	0.682-0.721	0.745	0.493
Information Technology (IT)	Wang et al. (2018)	4	0.894	0.766-0.857	0.895	0.681
Social Influence (SI)	Ayaz and Yanartaş (2020)	3	0.850	0.728–0.878	0.857	0.667
Perceived Usefulness (PU)	Wang et al. (2018)	4	0.894	0.782-0.859	0.895	0.680
Perceived Ease of Use (PEU)	Liu et al. (2010)	4	0.786	0.605-0.777	0.789	0.486
User Attitude (UA)	Wang et al. (2018)	3	0.789	0.696-0.804	0.790	0.557
Behaviour Intention (BI)	Hu and Zhang (2016)	3	0.753	0.543–0.806	0.765	0.527

Table 4 presents the indices of quality of fit. The measurement uses the following indicators: CMIN/DF, GFI, AGFI, NFI, CFI, TLI, and RMSEA. The fact that every statistical value of the CFA exceeds the permissible thresholds indicates that the measurement model is well-fitting.

Table 4: Goodness of Fit for Measurement Model

Fit Index	Acceptable Criteria	Statistical Values
CMIN/DF	< 5.00 (Al-Mamary & Shamsuddin, 2015; Awang, 2012)	698.638/296 or 2.360
GFI	≥ 0.85 (Sica & Ghisi, 2007)	0.907
AGFI	≥ 0.80 (Sica & Ghisi, 2007)	0.882
NFI	≥ 0.80 (Wu & Wang, 2006)	0.893
CFI	≥ 0.80 (Bentler, 1990)	0.935
TLI	≥ 0.80 (Sharma et al., 2005)	0.923

Fit Index	Acceptable Criteria	Statistical Values
RMSEA	< 0.08 (Pedroso et al., 2016)	0.052
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, NFI = normalized fit index, CFI = comparative fit index, TLI = Tucker Lewis index, and RMSEA = root mean square error of approximation

The results of this study, detailed in Table 5, demonstrate that both convergent and discriminant validity exceed the acceptable thresholds. As a result, the study effectively establishes both convergent and discriminant validity. Furthermore, these measurement outcomes not only confirm discriminant validity but also validate the estimation of subsequent structural models.

Table 5: Discriminant Validity

	SQ	PI	IT	SI	PU	PEU	UA	BI
SQ	**0.796**							
PI	0.262	**0.702**						
IT	0.285	0.242	**0.825**					
SI	0.237	0.010	0.492	**0.817**				
PU	0.174	0.288	-0.003	0.009	**0.825**			
PEU	0.128	0.153	0.089	0.147	0.185	**0.697**		
UA	0.047	0.031	-0.056	0.011	0.371	0.159	**0.746**	
BI	0.151	-0.002	0.263	0.260	0.216	0.137	0.245	**0.726**

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 (SEM) is a dynamic analytical method in applied statistics largely used to analyze complex multivariate datasets. It has been widely used in the social and behavioral sciences over the last thirty years. The core idea is that the researcher creates a theoretical framework that establishes the relationships, sometimes causal, between variables (Boslaugh, 2008; Shelley, 2006).

The statistical values were CMIN/DF = 3.177, GFI = 0.873, AGFI = 0.848, NFI = 0.847, CFI = 0.889, TLI = 0.877, and RMSEA = 0.066. The model was confirmed to be fit as all of the fit indices' values were higher than the permitted range. The coefficients of regression, or standardized path coefficients, are used to evaluate the connection between the independent and dependent variables stated in the hypothesis.

Table 6: Goodness of Fit for Structural Model

Fit Index	Acceptable Criteria	Statistical Values After Adjustment
CMIN/ DF	< 5.00 (Al-Mamary & Shamsuddin, 2015; Awang, 2012)	1000.646/315 or 3.177
GFI	≥ 0.85 (Sica & Ghisi, 2007)	0.873
AGFI	≥ 0.80 (Sica & Ghisi, 2007)	0.848
NFI	≥ 0.80 (Wu & Wang, 2006)	0.847
CFI	≥ 0.80 (Bentler, 1990)	0.889
TLI	≥ 0.80 (Sharma et al., 2005)	0.877
RMSEA	< 0.08 (Pedroso et al., 2016)	0.066
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, NFI = normalized fit index, CFI = comparative fit index, TLI = Tucker Lewis index, and RMSEA = root mean square error of approximation

4.4 Research Hypothesis Testing Result

The coefficients of regression, or standardized path coefficients, quantify the correlation between the independent and dependent variables mentioned in the hypothesis.

Table 7: Hypothesis Results of the Structural Equation Modeling

Hypothesis	(β)	t-value	Result
H1: SQ → PU	0.162	3.201*	Support
H2: PEU → PU	0.191	3.588*	Support
H3: PEU → PI	0.189	3.188*	Support
H4: PEU → UA	0.137	2.552*	Support
H5: PU → UA	0.420	7.889*	Support
H6: PU → BI	0.126	2.200*	Support
H7: UA → BI	0.277	4.434*	Support
H8: IT → BI	0.216	4.303*	Support
H9: SI → BI	0.187	3.679*	Support

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

All assumptions are validated in Table 7. Female students from private universities in Chengdu are most motivated to use the mobile library platform (m-library) based on their use attitude, with the information technology of the m-library being a less significant element. This research found that the use of attitude, information technology, social influence, and perceived usefulness substantially impact female students' behavioral intention to take advantage of m-library as users.

Use attitude has the greatest impact on behavioral intention. The standardized path coefficient for the relationship between behavioral intention and use attitude in H7 is 0.277. The t-value is 4.434. This validates the prior studies carried out by Agarwal and Prasad (1999), Nagy et al. (2018), Venkatesh (2000), and Celik (2008). The conceptual framework identifies perceived usefulness, perceived ease of use, and social influence as key aspects that substantially impact use attitudes. The use attitude towards female student users must be considered when performing research and creating the m-library.

Two additional components in the conceptual framework indirectly impact the behavioral intention pair via user attitude, perceived usefulness, and perceived ease of use. The following statement specifies the association between these two pairs.

Perceived usefulness has the most substantial impact on user attitude, with a standardized path coefficient of 0.420 and a t-value of 7.889 (H5). According to Hsu and Lu (2004), Belanche et al. (2014), and Venkatesh and Morris (2000), perceived usefulness (PU) significantly influences female students' attitudes towards the application of m-library at colleges and universities. Perceived usefulness has a substantial indirect impact on behavior and intention. Academic research repeatedly shows that "perceived usefulness" in education is linked to students' belief in how beneficial a certain educational system would be in enhancing their academic achievement (Huang & Liaw, 2018). University lecturers could convey to students the beneficial impact of m-library on enhancing female students' academic performance.

System quality is one of two fundamental factors impacting perceived usefulness in this case. According to H1, the system quality of the platform significantly influences the perceived usefulness, with a standardized path coefficient of 0.162 and a t-value of 3.201. Enhancements in the system quality of m-library impact users' perceptions of the platform's effectiveness. The system's quality also indirectly influences female undergraduate students at a private university, who are its visitors, in their behavioral intentions towards the library. According to H2, perceived ease of use is another factor that affects perceived usefulness. The standardized path coefficient is 0.191, with a t-value of 3.588. According to Qin et al. (2019), learners' perceptions of an online learning system's effectiveness impact how clear and user-friendly they find it. Female students' ideas about the effectiveness of m-library on the application platform significantly impact their assessment of the usefulness of m-library, which in turn affects the behavioral intention of m-library.

Additionally, a t-value of 2.552 (H4) and a standardized path coefficient of 0.137 shows that the perceived ease of use affects the attitude toward the m-library application. As Shih and Fang (2004), Agarwal and Prasad (1999), Venkatesh (2000), and Bashir and Madhavaiah (2014) consistently stated, female university students' opinions regarding m-library usage are greatly impacted by their perceptions of how easy it is to use. The perceived ease of consumption indirectly affects the desire to behave. Think about it from a different angle. In educational contexts, the term "perceived ease of use" describes how private university students judge the simplicity or complexity of a given system's design.

The study revealed that information technology is the second most significant combination of factors, as behavioral intention indicates. In hypothesis H8, the standardized path coefficient of information technology on behavioral intention is 0.216, with a t-value of 4.303. System quality impacts perceived usefulness, which is a critical criterion.

Perceived usefulness and social influence, which have a minimal effect, are additional components in the conceptual framework structure that directly affect behavioral intention. Social influence has a standardized path coefficient of 0.187 and a t-value of 3.679, indicating a somewhat higher impact on behavioral intention. The path coefficient of perceived usefulness on behavioral intention is 0.126 with a t-value of 2.200, indicating that perceived usefulness has the least substantial impact on behavioral intention.

5. Conclusion and Recommendation

5.1 Conclusion

This study will comprehensively analyze the main elements influencing the adoption of a mobile library platform's behavioral intention among female college students at private institutions in Chengdu, Sichuan, China. The survey included female students with more than one year of m-library experience, from sophomores to seniors at three private universities in Chengdu, China. The researcher's conceptual framework included nine hypotheses to investigate the aspects that affect respondents' behavioral intentions toward the m-library. Once the questionnaire was created and its reliability was verified, the researcher uploaded the final version of the two questionnaires to Questionnaire Star. Subsequently, the questionnaires were distributed to female undergraduate students at three distinct private universities in the Chengdu region through an online platform. The students were chosen based on their one-year experience using m-library for studying and preparing.

Subsequently, the researchers used the gathered data to evaluate the accuracy and consistency of the study's conceptual model via the CFA approach. The SEM technique analyzed the factors affecting the behavioral intention to use m-library in higher education. The researchers proposed nine hypotheses, all validated and aligned with the research's goals. The study's findings may be summarized as follows:

Use attitude is a more dependable predictor of behavioral intention than perceived usefulness, information technology, and social influence. Davis (1989) states that the attitude towards use is the key factor in behavioral intention, as it significantly impacts the system's operation and directly

affects users' behavior in terms of actual use. Rotchanakitumnuai and Speece (2009) found that attitude toward use was the main predictor of behavioral intention in their investigation.

5.2 Recommendation

The study identified the key characteristics that impact the behavioral intention (BI) to use mobile library platforms at three private colleges in Chengdu, Sichuan. The elements consist of system quality (SQ), perceived interaction (PI), information technology (IT), social impact (SI), perceived utility (PU), perceived ease of use (PEU), and user attitude (UA).

Prior to promoting the usage and adoption of the mobile library platform among female students at private colleges, it is crucial to enhance and optimize the key influencing elements mentioned above. It is crucial to focus on the attitudes of female undergraduate students towards the m-library during the promotion process. Specifically, the emphasis should be on how female undergraduates at private universities assess the mobile library application and its impact on their performance (Chauhan, 2015). This research presents the notion of using attitude as an individual's contentment when selecting a mobile library application (Ajzen, 1991). Consequently, evaluating and examining happiness among female university students is crucial for developers.

This research examines the factors that impact the behavioral intentions of female students at private colleges in Chengdu to use mobile library platforms. This study is valuable for mobile library platform developers, senior administrators in higher education institutions, and university professors. The information technology is also beneficial for students to understand and implement in developing, implementing, and advocating the adoption of m-library by female students for learning and reading.

5.3 Limitation and Further Study

It is necessary to acknowledge the constraints of the current investigation. This study has limitations in two important areas.

First, three private institutions in the Chengdu region of China are the only ones included in this research. Because of this, the research will not include several important Chinese institutions. Consequently, certain restrictions concerning the intended audience and the amount of data collected exist. Further limitations include a small sample size (students were the only participants) and a narrow focus of the investigation.

The subsequent ones are potential domains that could be suggested for further inquiry. Data for this study was collected from three private colleges and institutions in Chengdu that were selected with care. A comprehensive examination of these establishments would be possible if they improved the university-owned mobile reading platforms or digital resource libraries. On the contrary, organizations that manage mobile library platforms might find this research valuable in advancing their goals. Furthermore, conducting user-specific research on online reading libraries tailored for corporate organizations, Chaoxing Learning platforms, and MOOCs would be beneficial in investigating behavioral intentions.

Conversely, the study sample exclusively comprised female students. Female lecturers' participation in future studies might provide insight into their perspectives regarding the use of the m-library. To mitigate the impact of extraneous variables that obscure causality, forthcoming investigations may employ methodologies like artificial intelligence to leverage big data or for more precise data extraction.

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