Factors influencing intentions to use library social media marketing accounts: taking the example of WeChat

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Abstract

Purpose – This study aims to explore the factors influencing intentions to use library social media marketing accounts from users' perspectives to help libraries use social media to provide targeted information services to users to meet their information needs.

Design/methodology/approach – This study is based on the technology acceptance model and theory of planned behaviour and uses WeChat as an example to build the model of factors influencing intentions to use library social media marketing accounts. It takes college students as the research object, performing empirical research through questionnaire surveys and structural equation modeling.

Findings – The results show that attitude, subjective norm and perceived behaviour control have a significant positive impact on library social media marketing – attitude exerts the most significant effect while the impact of perceived usefulness is nonsignificant. Notably, attitude completely mediates perceived usefulness and use intention, while perceived usefulness partially mediates perceived ease of use and attitude. However, birthplace plays a negative moderating role between attitudes and use intention.

Originality/value – This study integrates the theory of planned behaviour and technology acceptance model, discusses the factors influencing intentions to use library social media marketing accounts from the users' perspectives and proposes strategies and methods for the optimization of library social media marketing. The study helps enhance the effects of library social media marketing by improving the comprehension of current circumstances and influencing factors relevant to this issue.

Keywords Social media, Marketing, WeChat, College students, Academic libraries, Influencing factors

Paper type Research paper

1. Introduction

Social media marketing refers to the activities of marketing communication through Web 2.0 interactive platforms, such as social networking sites (SNS; e.g. Facebook, Twitter and

Instagram), Weibo, WeChat and short video platforms (e.g. YouTube, DouYin and Tiktok) (Han *et al.*, 2014; Li *et al.*, 2016). Since the beginning of the 21st century, social media has fundamentally reshaped the marketing environment and channels in all walks of life in just over a decade. According to the *U.S. Public Library Marketing Research Report* released by Online Computer Library Center (OCLC) in 2018, 96% of libraries in the USA use social media for marketing (Fan, 2021; OCLC, 2018). Various types of libraries in China are also widely using social media, such as Weibo, WeChat and DouYin, to promote library resources and services. Simultaneously, scholars at home and abroad have conducted a large number of relevant studies on library social media marketing.

Early studies at home and abroad focused on a survey of social media marketing, but in recent years, the focus has shifted to related theoretical explorations. Yet, there are a relatively small number of studies on the factors influencing library social media marketing, and some deep-seated and potential factors must be explored. Against the background of accelerating digital technology development and the widespread penetration of social media, the effectiveness of library social media marketing is considered unsatisfactory. Many users become bored and indifferent to social media, and social media use is frequently discontinued (Liu *et al.*, 2017). This study takes the example of China's largest social platform, WeChat. Based on the technology acceptance model (TAM) and theory of planned behaviour (TPB), this study adopts the users' perspectives to explore the factors influencing intentions to use library social media marketing accounts and then proposes innovative strategies and methods for library social media marketing.

2. Literature review
The widespread application of social media in library marketing has aroused the interest of scholars. After summarizing relevant literature at home and abroad, it is found that scholars' studies mainly focus on the five following aspects.

The first aspect is the investigation of the existing situation and problem analysis of library social media marketing. Research on this topic investigates the application of specific social media in the library. The social media platforms libraries use for marketing mainly include Facebook, Twitter, YouTube, Instagram, blog, LinkedIn and Pinterest (Abdullah *et al.*, 2015; Howard *et al.*, 2018; Jones and Harvey, 2019), while various types of library social media marketing platforms in China typically include Sina Weibo (Tang *et al.*, 2013; Wang, 2010), WeChat (Chen, 2013; Wang and Deng, 2013; Zhang *et al.*, 2014) and DouYin (Zeng and Zhang, 2020; Zhang and Liu, 2019). Additionally, numerous surveys reveal that libraries in various countries further strengthened the use of social media marketing and services during the COVID-19 pandemic (Koulouris *et al.*, 2021; Public Library Association [PLA], 2020).

On case analysis and experience sharing of library social media marketing, Feng and Mo (2020) and Si (2011) analysed the event of "not refusing beggars and scavengers to read in Hangzhou Library" and "message left by migrant workers in Dongguan Library", respectively. These events were triggered by social media, which became a sensation in China's library circles and aroused significant repercussions in society. Shi and Zhai (2014) and Zhang (2017) shared successful case experiences of social media marketing in Nanjing University Library and Hunan Public Library, respectively, providing valuable practical experience for other libraries.

On content analysis of library social media marketing, early researchers mainly used qualitative methods to analyse the content and category of library social media marketing. For example, Stuart (2010) found that the content on the Twitter account of libraries mainly included library-related news and information, as well as recommendations of library

resources. Aharony (2012) found that the content on the Facebook account of public libraries mainly included library activities and services, while that of university libraries had library literature resources and services. It seemed that these two types of libraries used Facebook as a way to deliver information to users but not as a place for communication and discussion with users. Recently, researchers have used more quantitative methods to analyse the degree of participation and interaction of library social media users and, on this basis, evaluated the marketing effect of social media. For example, Joo *et al*.'s (2018, 2020) research found that posts involving community news, awards, emotional incentives, summer reading projects or pictures on libraries' Facebook accounts were likely to attract more users to participate.

On exploring the influencing factors of library social media marketing and establishing and testing corresponding theoretical models, Jones and Harvey (2019), for example, adopted a mixed research method. By investigating the Twitter accounts of librarians and users of libraries, they found that the main factors affecting library social media marketing are the time, skills and knowledge of librarians; their understanding of marketing; the social media policy of parent institutions; and users' participation in and perception of libraries. Joo *et al*. (2019) found that variables such as perceived usefulness (PU), perceived ease of use (PEOU), attitude (ATT), subjective norms (SN) and behaviour control exert a significant impact on the willingness of libraries to use social media, of which the effect of perceived behavioural control on the willingness to use social media was the most significant. Ihejirika *et al*. (2021) investigated user engagement in library social media based on the elaboration likelihood model. Their results disclosed the significant impact of both central and peripheral path factors on user participation.

On the effect of social media marketing in libraries, Huang and Zhang (2015) analysed the influence of public libraries on the propagation of libraries based on the WeChat communication index to discern the effects of social media marketing in libraries. They found that public libraries wielded greater influence than university libraries, yet the official WeChat accounts of members of the library industry were generally weak. Wang (2018) used Python to crawl the official WeChat accounts of libraries and discovered four characteristics of high-impact posts: their content is valuable, interesting, emotional and related to topics of considerable popularity. Li and Zhou (2019) identified service-related content offered by the official WeChat accounts of a university library as attractive, low charm, high expectation, potential or unrelated based on the Kano model. Users can avail of basic library services through WeChat besides reading posts. For example, Li (2016) found that the four functions or services most used on official WeChat accounts comprise personal borrowing records, mobile library, book search and the binding of the borrowing cards of users. The principal problems of the social media marketing of libraries were also noted, namely, that the WeChat public platform discharges only a transmission function, lacks user interaction and does not reflect the functional characteristics of the WeChat public platform (Gu, 2019).

3. Theoretical basis and research hypothesis

3.1 Theoretical basis

3.1.1 Technology acceptance model. The (TAM) is a fundamental theory that explains and predicts people's acceptance of information technology. Davis (1989) first proposed it in his doctoral dissertation. TAM advocates believe that system use is determined by behavioural intention, and behavioral intention is jointly determined by ATT and PU. ATT is jointly determined by PU and PEOU, and PU is mutually ascertained by PEOU and external variables, which involve system, user, task, organizational and management characteristics.

The TAM has been fully verified since it was proposed and is widely used in many research fields, such as information systems, information science, library science and business management. The model has also been playing a vital role from the earliest research on computer systems to the latest virtual reality equipment and from initial research within business organizations to current research on different consumer groups. It is one of the most influential, robust, concise and straightforward theoretical models in information technology acceptance research. Subsequent studies have continuously verified and expanded TAM, forming a complete and practical model range, such as TAM2, UTAUT and TAM3.

3.1.2 Theory of planned behaviour. Ajzen (1991) proposed the TPB based on the theory of reasoned action. Its core ideas are as follows: the behavioural intention is the direct factor determining the individual's actual behaviour; additionally, behavioural attitude, SN and perceived behaviour control (PBC) are the three main variables demonstrating a user's behavioural intention. It is believed in TPB that the more positive the user's attitude, the greater the support from significant others, and the stronger the PBC, the greater the behavioural intention.

As an essential theory for predicting and explaining human behaviour, TPB is widely used in many fields, such as management, education, psychology, information science and economics. Especially in information systems, TPB is often used to predict and explain the willingness and behaviour of users related to information systems, technology and services. Subsequent studies on the expansion and integration of the classic TPB model are mainly reflected in two aspects: first, incorporating new variables into the model, especially moderator variables, such as personality characteristics, age and gender, to explore the differences in the behaviour of individuals; second, integrating TPB with other commonly used technical acceptance theoretical models to give full play to the advantages of each model.

3.2 Research model and hypotheses
3.2.1 Research model. As TAM merely considers the influence of internal psychological factors, such as the cognition and attitude of behavioural subjects, TPB considers external social factors, such as social normal and interpersonal influence. This study integrates the research of TAM and TPB in terms of both internal and external factors. Based on the characteristics of library social media marketing, six variables (i.e. PEOU, PU, ATT, SN, PBC and use intention [UI]) are introduced to construct a model of the factors influencing intentions to use library social media marketing accounts, as shown in Figure 1.
3.2.2 Research hypotheses. PEOU refers to the degree to which a person believes that using a particular system would be free of effort; in this study, however, it refers to users' feelings about the ease of use of library social media. Most previous studies based on TAM have confirmed that PEOU directly impacts PU and ATT. For example, Joo *et al.* (2019) revealed that PEOU exerted a significant impact on the PU and ATT of librarians a propos library marketing. Choi and Chung (2013) also reported the significant effect of PEOU on the PU of users *vis-à-vis* SNS. When users think that library social media is easy to use and does not require much time to learn, other factors being equal, they are more likely to use it.

PU refers to the degree to which a person believes that using a particular system would enhance their job performance. In this study, it refers to the degree to which library social media can help users in terms of their learning and research. If users think library social media is useful, then this variable will affect users' ATT and UI. PU's positive impact on ATT and UI has been confirmed by many previous empirical studies. For example, Dumpit and Fernandez (2017) demonstrated that PU, PEOU, SN and perceived playfulness
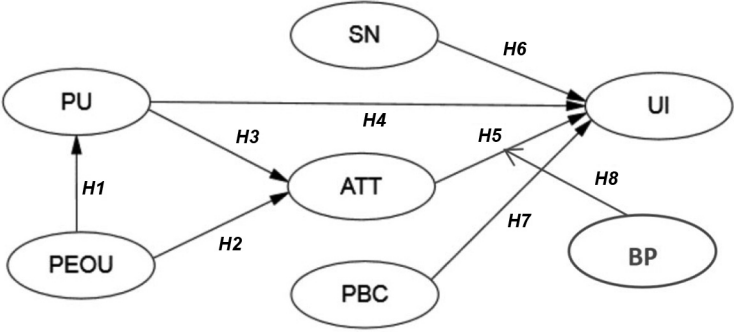
Notes: PU = perceived usefulness; PEOU = perceived ease of use;
SN = subjective norms; ATT = attitude; PBC = perceived behaviour
control; UI = use intention; BP = birthplace

(happiness) are robust predictors of the students' usage behaviour. Therefore, the following hypotheses are proposed:

H1. The perceived ease of use positively influences the perceived usefulness of library social media.

H2. The perceived ease of use positively influences attitudes towards library social media.

H3. Perceived usefulness positively influences attitudes towards library social media.

H4. Perceived usefulness positively influences intentions to use library social media.

ATT describes the degree to which a person has a favourable or unfavourable valuation or appraisal of the behaviour in question; in this study, it refers to the positive or negative evaluation or feeling of users towards library social media, which is users' overall evaluation of library social media. UI refers to the intensity of an individual's willingness to engage in a certain behaviour, which is the impetus to use library social media. The relationship between ATT and UI has been strongly supported in many previous TPB empirical studies. For example, Mäntymäki *et al.* (2014) demonstrated that ATT, SN and PBC directly and significantly influence continued user engagement in virtual worlds. Further, Zhang *et al.* (2019) found that ATT, self-efficacy and SN significantly affected the mobile health service behavioural intentions of individuals.

SN refers to the perceived social pressure to perform or not perform a given behaviour (Ajzen, 1991). In this study, it is used to allude to the pressure of the external environment when users decide to use library social media. Individuals are susceptible to the influence of their circle and tend to execute the behaviour encouraged and accepted by their circle – the positive effect of ATT on UI has been confirmed by many empirical studies based on TPB. For example, Heirman *et al.*'s (2016) study has shown that SN, PBC and ATT significantly impact the willingness of young people to accept strangers as friends on social networks. Dhir *et al.* (2020) also observed the significant effects of social influence on the continued intentions of people to use the MIM app.

PBC refers to the perceived ease or difficulty of performing a given behaviour (Ajzen, 1991); in this study, it refers to users' ability to control the experience and skills needed to use library social media. If users do not have sufficient control over the use of social media,

then it is very likely that they will not use library social media. Many previous studies have found that PBC is an essential factor affecting UI. For example, PBC and ATT were identified as important predictors of intentions to search for health information (Austvoll-Dahlgren *et al.*, 2012), and PBC, SN, ATT, perceived enjoyment and flow experience were found to influence actual online game playing (Alzahrani *et al.*, 2017). Therefore, the following hypotheses are proposed:

H5. User attitudes towards library social media positively influence use intentions.

H6. The subjective norms positively influence intentions to use library social media.

H7. Perceived behaviour control positively influences intentions to use library social media.

Finally, the hypothesis of moderating effect is postulated for this study. China's household registration system (*hukou*, namely, birthplace, or BP) has exerted a profound impact on the development of Chinese society. It created a dual economic structure, dividing urban and rural areas; it also divided people into townspeople and rural residents, with obvious gaps in public services, such as education, medical treatment and employment between the two demographics, especially in the western part of China. Studies from different fields, such as management, demography and pedagogy, have evidenced that the BP applies a significant moderating effect on perceived human resource management and perceived organizational justice (Shen and Leggett, 2014), migrant workers and job satisfaction (Wu and Guo, 2017), higher vocational students and social media use durations (Yao, 2018), population mobility and trust structures (Han, 2021), pay raises and voluntary turnovers (Lin *et al.*, 2021). Therefore, the following hypothesis is proposed:

H8. Birthplace moderates the relationships between attitudes and use intentions.

4. Research methods
4.1 Questionnaire design
This study used questionnaires to collect relevant data. Referring to relevant mature scales, the corresponding measurement items in the questionnaire were also appropriately modified combined with the current situation of library social media marketing. Before formally distributing the questionnaire, researchers also consulted relevant experts and users on the questionnaire's design, options and wording, conducting a small sample data collection exercise pre-investigation among users. Finally, six variables of the model of influencing factors of library social media marketing were obtained, each variable comprising three to four items. Using the Likert five-point scale, the content and reference sources of the measurement items are shown in Table 1.

4.2 Sample statistics
The survey object of this study was college students, and the form of a paper questionnaire was used to collect questionnaire data with the help of the Student Librarian Association of the Library of Yunnan Normal University. The formal survey started in early March 2021 and lasted for one month. A total of 370 questionnaires were collected, and 324 valid questionnaires were finally obtained after excluding invalid questionnaires, such as filling in apparent contradictions and consecutively selecting the same number, with an effective response rate of 87.57%.

Variable	Abbreviation of variables	Measurement items	Reference sources of items
Perceived usefulness (PU)	PU1	I can obtain helpful information from the library's WeChat official account	Davis (1989), Thong et al. (2002)
	PU2	The library's WeChat official account is helpful to my study	
	PU3	The library's WeChat official account is helpful to my life	
Perceived ease of use (PEOU)	PEOU1	For me, the library's WeChat public account is easy to use	Davis (1989), Thong et al. (2002); Joo et al. (2019)
	PEOU2	I can easily get information from the library's WeChat public account	
	PEOU3	The library's WeChat public account saves my time to go to the library	
Attitude (ATT)	ATT1	The library's WeChat official account is valuable to me	Ajzen (1991); Joo et al. (2019)
	ATT2	I am satisfied with the overall feeling of the library's WeChat official account	
	ATT3	I am optimistic about the prospects of the library's WeChat official account	
Subjective norms (SN)	SN1	The library's WeChat public account is commonly used among students	Ajzen (1991); Heirman et al. (2016)
	SN2	Library information, services and activities are provided through the WeChat public account	
	SN3	The library proactively promotes the use of WeChat public accounts to students	
Perceived behaviour control (PBC)	PBC1	I have the knowledge and skills to use the library's WeChat public account	Ajzen (1991); Taylor and Todd (1995a)
	PBC2	I have experience in using the library's WeChat official account	
	PBC3	I am familiar with the use of the library's WeChat official account	
Use intention (UI)	UI1	I will follow the library's WeChat public account	Ajzen (1991), Xu et al. (2013)
	UI2	I will actively use the library's WeChat public account	
	UI3	I will recommend to students to use the library's WeChat public account	

Note: A public WeChat account is equivalent to an official WeChat account

Table 1.
Measurement items of influencing factors of library social media marketing

5. Data analysis

5.1 Reliability analysis

This study used SPSS 26.0 and AMOS 26.0 software for data analysis. When Cronbach's coefficient (Cronbach's α) and the combined reliability (CR) value are greater than 0.7 (Hair et al., 2006), it indicates that the reliability of the scale is good. In this study, Cronbach's α coefficient of each latent variable of the factor was between 0.752 and 0.856, and the CR value was between 0.752 and 0.873, which are all above the value of 0.7 recommended by scholars, indicating good internal consistency of the scale.

5.2 Validity analysis

Validity includes content and construct validity. The questionnaire items in this study were based on relevant, valuable literature or adapted from the mature scale; accordingly, the content validity was good. Construct validity is divided into convergent and discriminant validity. Convergent validity generally requires that the average variance extracted (AVE) value of the variable and the factor loading be greater than 0.5 (Chin, 1998). As shown in Table 2, the AVE value in this model was between 0.504 and 0.696, and the factor loading was between 0.668 and 0.883, both of which are greater than the standard value, indicating good convergence validity. Discriminant validity requires that the square root of the AVE value of each variable must be greater than the correlation coefficient between variables (Fornell and Larcker, 1981). As shown in Table 3, the square root of the AVE of all variables in the model was greater than its correlation coefficient, indicating high discriminant validity.

5.3 Structural equation model

After the above reliability and validity analysis, AMOS software was used for structural equation modeling. The standardized path coefficient after collating the data is shown in Figure 2, and the fitting coefficient of the model is shown in Table 4.

Latent variable	Observed variables	Factor loading	Cronbach's α	CR	AVE
Perceived usefulness (PU)	PU1	0.775	0.804	0.808	0.585
	PU2	0.812			
	PU3	0.704			
Perceived ease of use (PEOU)	PEOU1	0.668	0.783	0.796	0.568
	PEOU2	0.836			
	PEOU3	0.747			
Attitude (ATT)	ATT1	0.866	0.856	0.858	0.670
	ATT2	0.857			
	ATT3	0.725			
Subjective norms (SN)	SN1	0.688	0.752	0.752	0.504
	SN2	0.768			
	SN3	0.669			
Perceived behavior control (PBC)	PBC1	0.849	0.871	0.873	0.696
	PBC2	0.840			
	PBC3	0.813			
Use intention (UI)	UI1	0.727	0.826	0.834	0.627
	UI2	0.883			
	UI3	0.757			

Table 2.
Analysis of
reliability and
convergence validity

	PU	PEOU	ATT	SN	PBC	UI
PU	0.765					
PEOU	0.610	0.754				
ATT	0.645	0.724	0.819			
SN	0.524	0.579	0.616	0.710		
PBC	0.519	0.585	0.555	0.613	0.834	
UI	0.513	0.552	0.661	0.560	0.594	0.792

Table 3.
Discriminant validity
analysis

Figure 2.
Hypothesis test
results
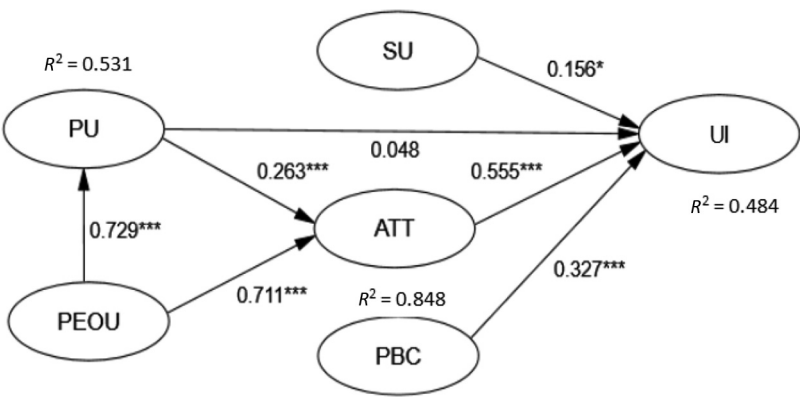
Notes: *** indicates $p < 0.001$; ** indicates $p < 0.01$; * indicates $p < 0.05$

Fitting coefficient	Statistic	Optimal standard value	Fitting
Chi-square	306.481	–	
Freedom	125	–	
Chi-square/freedom	2.452	<3	Excellent
RMSEA	0.059	<0.05	Good
CFI	0.947	>0.9	Excellent
TLI	0.927	>0.9	Excellent
IFI	0.948	>0.9	Excellent
PNFI	0.669	>0.5	Excellent

Table 4.
Overall fitting
coefficient of the
model

The results reveal that, except for the fitting of the root mean square error of approximation index, which was good, the remaining fitting coefficients reached the standard of excellence. This indicates that the preset model matches the research data, and the model fitting is good.

The structural equation modeling software AMOS26 was used to test the hypothetical relationship, and Figure 2 presents the data analysis results. Of them, SN ($\beta = 0.156$, $p < 0.05$), ATT ($\beta = 0.555$, $p < 0.001$) and PBC ($\beta = 0.327$, $p < 0.001$) significantly and positively influence UI, verifying *H5*, *H6* and *H7*; PU has no significant impact on UI but has a significant positive effect on ATT ($\beta = 0.263$, $p < 0.01$), verifying *H3* while indicating that *H4* is invalid; PEOU significantly and positively affects PU ($\beta = 0.729$, $p < 0.001$) and ATT ($\beta = 0.711$, $p < 0.001$), verifying *H1* and *H2*; moreover, the variance interpretation rate of SN, ATT and PBC for controlling the UI of social media was 48.4%; PEOU explains 53.1% of the change in PU (variance); and PU and PEOU together interpret 84.8% of the change in ATT (variance), both reaching moderate or above explanatory power.

5.4 Test of mediating effect
According to the structural equation model, ATT mediates between PU and UI (Model 1), while PU mediates between PEOU and ATT (Model 2). The SPSS 26 software

PROCESSv4.0 plug-in was used for testing. After adding the control variables of PEOU, SN and PBC, Model 4 was used to perform the test, and the test results are shown in Table 5.

In Model 1, the mediating effect of ATT on PU and UI, PU has no significant direct impact on UI (the upper and lower limits of bootstrap 95% confidence interval contain 0). After adding the mediator variable attitude, PU significantly influences UI (the upper and lower limits of bootstrap 95% confidence interval do not contain 0), indicating that ATT plays a complete mediating role between PU and UI.

In Model 2, PU's mediating effect on PEOU and ATT, PEOU directly affects ATT (the upper and lower limits of bootstrap 95% confidence interval do not contain 0). After adding the mediator variable PU, PEOU's effect on UI is still significant (the upper and lower limits of bootstrap 95% confidence interval do not contain 0), indicating that PU plays a partial mediating role between PEOU and ATT.

5.5 Test of moderating effect

In this study, the PROCESSv4.0 plug-in of SPSS 26 software was used to test the moderating effect of variables, and Model 1 was used to perform the test. ATT is set as the independent variable in Model 1, with UI as the dependent variable and BP as the moderator variable. After controlling other variables, the results (Table 6) revealed BP's significant moderating effect on the social media ATT and UI of students (= −0.392, $p < 0.001$). Therefore, *H8* is supported.

The interaction effect diagram (Figure 3) for different BPs (rural = 1, urban = 2) was plotted in this study to further test the moderating effect. The slope of the straight line in Figure 3 reflects the ATT to the UI. The simple effects test revealed a significant upward trend ($\beta = 0.508$, $p < 0.001$) in rural students' UI for social media with an increase in ATT preference. Conversely, ATT preference could not significantly predict social media UI ($\beta = 0.115$, $p > 0.05$) for urban students. Therefore, the study results divulged that the relationship between social media ATT and UI was moderated by the BP.

	Effect	SE	t	p	LLCI	ULCI
Model 1						
Total effect	0.151	0.055	2.737	0.007	0.042	0.259
Direct effect	0.054	0.054	1.001	0.318	−0.052	0.160
Indirect effect	0.097	0.026	−	−	0.053	0.159
Model 2						
Total effect	0.488	0.038	12.802	0.000	0.413	0.563
Direct effect	0.428	0.039	10.860	0.000	0.351	0.506
Indirect effect	0.060	0.020	−	−	0.027	0.104

Table 5.
Data table of the test of mediating effect

Model	Coeff.	SE	t	p	LLCI	ULCI
Constant	2.695	0.360	37.866	0.000	1.987	3.403
ATT	0.431	0.070	6.186	0.000	0.294	0.568
BP	0.084	0.077	1.088	0.277	−0.086	0.234
ATT*BP	−0.392	0.101	−3.879	0.000	−0.591	−0.193

Note: BP refers to birthplace, indicating whether the birthplace of respondents is in a rural or urban area

Table 6.
Data table of the test of moderating effect
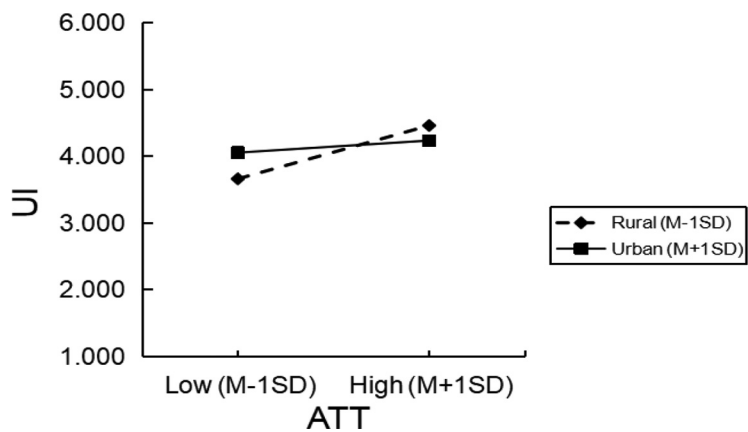
6. Discussion

It can be seen from the results of the hypothesis test that most hypotheses regarding the factors influencing intentions to use library social media marketing accounts were supported by empirical analyses. Based on the hypothesis test results, the discussion is as follows.

6.1 Attitude is the main factor affecting the effectiveness of library social media marketing

It can be seen from the empirical analysis in the previous section that ATT, SN and PBC have a significant positive impact on UI, consistent with the research conclusions of Joo *et al.* (2019), of which ATT's impact is the most significant. This shows that the "post-00s" (those born after 2000), college students in China are "a generation with attitude". Compared with the post-80s and post-90s, this generation of college students has a stronger self-concept and a more distinctive personality, and their acceptance of things mainly depends on their own attitude (such as like or dislike, a positive or negative evaluation). Therefore, the priority of library social media marketing is to consider how to influence or change college students' attitudes towards library social media, such as integrating more fashion, fun and practical elements that fit their taste so that they will have a sense of identity with library social media and then produce a positive evaluation. In addition, SN and PBC significantly and positively affect UI, indicating that college students are susceptible to the influence of the people around them and their own knowledge and skills. Therefore, in social media marketing, on the one hand, libraries must strengthen direct publicity for college students with the use of library social media and, on the other hand, they must increase library social media marketing efforts among teachers and graduate students as these groups significantly influence college students. Simultaneously, libraries should strengthen the cultivation of college students' "social media literacy" and improve their skills in using library social media.

Surprisingly, in this study, PU's effect on UI is not significant. In most previous studies, the considerable impact of PU on UI has been supported by empirical studies. A possible explanation is that the content of library social media marketing does not meet the needs of college students; that is, college students think that library social media is not conducive to their own study or life. At present, most of the information and services provided by library social media are based on the perspective of the library itself and lack an in-depth

understanding of the study and life of college students. Therefore, college students often feel that the content of library social media lacks practicality. Wang's (2018) investigation disclosed that library WeChat accounts often publish information about database training and lectures, but their user reading rates and praise rates are not high. However, these accounts rarely deliver information on topics of user interest, such as new document resources, novel document acquisition channels or updated research tools and methods. This research finding reminds library social media generators to proceed from the perspective of college students when publishing information or providing social media services to provide practical help for college students' studies and life.

6.2 Impact of perceived ease of use and perceived usefulness on attitude

It can be seen from the empirical analysis in the previous section that PEOU and PU significantly and positively affect ATT, verifying the initial hypotheses *H2* and *H3*, which are consistent with the research results of Dai and Liu (2012). When college students use social media to obtain information and services related to the library, if they think that the information and services are helpful and have a tangible impact on them, they will form a positive attitude towards library social media, thereby promoting the use of library social media among college students. Simultaneously, PEOU significantly and positively affects PU, consistent with the initial hypothesis *H1*, indicating that PEOU is a prerequisite for college students to continue using library social media. For example, some libraries convert their WeChat subscription model into a service model, and the messages published by the library can be displayed on the user's message list in real-time. Basic library services, such as books, inquiries, reservations and renewal, are integrated into the official WeChat accounts of libraries to facilitate user access to their services via WeChat.

In the questionnaire, three items are set to measure the ease of use of library social media for college students, namely, "For me, the library WeChat public account is easy to use", "I can easily get information from the library WeChat public account" and "The library WeChat public account saves my time to go to the library". Suppose that the social platform of libraries is simple in process, smooth in operation and convenient to use. If that is the case, then students will not need to spend too much time and energy on learning and using, which in turn will significantly improve the PEOU of libraries' social media for college students. However, supposing that the library's social media platform is complex in operation, unstable and difficult for college students to obtain information; in that case, its PEOU would reduce significantly, even if social media provides rich information and diverse services. Therefore, library social media must further simplify the operation process and interface settings, especially for standard services. Moreover, maintaining the platform's stability is necessary to reduce various kinds of obstacles for college students when using library social media.

6.3 The mediating role of attitude and perceived usefulness

It can be seen from the data analysis results in the previous section that ATT plays a complete mediating role between PU and UI, further indicating ATT's significant impact on UI. Compared with PU, college students' attitudes directly determine the effectiveness of library social media marketing. Additionally, this study discerned PU's partial mediating role between PEOU and ATT. The path coefficient allows the observation that both PU and PEOU significantly and positively influence ATT and that these two elements together account for 84.8% of ATT's variance.

This study did not find a significant impact of PU on UI. However, PU can affect UI through ATT; hence, PU remains important. Library social media should offer more

interesting and practical information and services for college students. For example, the effect of the recommendation of literature resources in social media accounts of college libraries is better than that of lectures recommended by database vendors, while in public libraries, posts related to community activities, awards, photos and summer reading projects have higher user engagement (Joo *et al.*, 2020).

6.4 The moderating role of birthplace in the relationship between attitude and use intention
A previously conducted study reported the negative moderating effect of BP *vis-à-vis* ATT and UI. Thus, college students who are born in different regions exhibit different attitudes towards library social media. Specifically, compared with college students from rural areas, those from cities tend to give a more positive evaluation of library social media, making it easier to generate the UI of library social media.

The possible explanation for this phenomenon is that owing to the long-standing dual economic structure of urban and rural areas, the development in China's vast rural areas and its urban areas is unbalanced. The level of economic and cultural development in urban areas is high, while that in rural areas is low, and the phenomenon of the "digital divide" and "digital inequality" has been formed between different social groups and classes. One end of the "digital divide" has college students from cities with early and more frequent exposure to social media such that they are familiar with various social media functions. The other end has college students from rural areas who are not familiar with social media. They may have only used the communication, social and entertainment functions of social media while knowing little about its information function. In this context, they do not know how to use social media to help themselves in their education. Therefore, it is vital for both library social media marketing and student learning to improve the digital literacy of rural students, especially apropos social media.

7. Conclusion
The theoretical contribution of this study is to take library social media marketing as the research object, integrate TPB and TAM and adopt users' perspectives to postulate a model of the factors influencing intentions to use library social media marketing accounts based on TPB and TAM. This model recognizes and verifies the impact of PU, PEOU, ATT, SN and PBC on UI, incorporating BP as a moderating variable. Moreover, this study elucidates BP's moderating effect between the ATT and UI of social media among college students and examines the mediating effect of ATT and PU. Real and valid data were obtained through a questionnaire survey, and structural equation modeling was used to verify the feasibility of the model. This model can provide a new theoretical model and methodological support for research on the factors influencing intentions to use library social media marketing accounts.

The practical value of this study lies in its adoption of the standpoint of users to discuss the factors influencing intentions to use library social media marketing accounts and its postulation of strategies and methods for the optimization of library social media marketing, such as optimizing the function design and the quality of information push service of library social media and improving the PEOU and PU of college students for library social media, thereby improving their ATT toward library social media. Simultaneously, it is necessary to strengthen the publicity of library social media among teachers and graduate students who directly impact college students, forming a good word-of-mouth effect among college students. Finally, it is also necessary to strengthen the training of college students in "social media literacy", especially for those from rural areas, to meet their needs to obtain library

and information services through social media and provide information and academic support for college students during their university studies.

This study has certain limitations.

- The study subject includes only college students, and the source of sample data is relatively single. In future studies, a sample of graduate students can be added to compare with the sample of college students, enabling the research to be more comprehensive and rigorous.

- The selection of the influencing factors of library social media marketing is mainly based on the variables proposed by TAM and TPB. The number of variables in these theories and models is limited, and it is necessary to integrate more related models in future studies (such as the information system success model) to dig out more significant variables.

- Given the difference in samples and application scenarios, this study's conclusions are somewhat different from that of previous studies. For example, this study found that ATT has the most significant impact on UI, while Joo *et al*. (2018, 2019) indicated that the effects of PBC are the most significant, and Heirman *et al*. (2016) posited that the most crucial factor is the SN. Therefore, the generalization of this study's results may present specific limitations.

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