Research on the Factors Influencing Users' Intention to Continue Using -- Data from TikTok Short Video APP College Student Users

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Information of Article	ABSTRACT
	As the development of short video APP enters the golden period, users' choices continue to increase, and various short video platforms emerge, while problems such as uneven short video content and serious homogenization arise. In this context, it becomes especially important for the Jitterbug short video platform to continue to maintain the strength of the first echelon, improve user loyalty, provide high-quality content, and enhance the core competitiveness of the Jitterbug short video platform. Based on the above realistic background, this study will explore the factors influencing the willingness of college student user groups to consistently use the Jitterbug short video platform. After reviewing previous literature and research results, this paper uses the technology acceptance model and the information system sustained use model as the theoretical basis, perceived usefulness, and perceived ease of use as independent variables, and user satisfaction as mediating variables to construct an influence model of the college student group's user's intention to sustain use. This paper uses questionnaire survey method to collect data for empirical analysis, and carries out reliability validity test, structural equation model fitting, hypothesis testing and mediating effect analysis on the questionnaire data through SPSS and AMOS software. The research results found that: perceived usefulness, perceived ease of use, and user satisfaction all have positive effects on the intention of continued use; user satisfaction has a direct mediating effect on perceived usefulness, perceived ease of use, and intention of continued use. Based on this, this study proposes four suggestions for the continued usage intention of Shake Yin college student user group from four dimensions: stimulating the creative enthusiasm of college student user group and maintaining abundant quality content sources; building vertical content and optimizing personalized pushing; enhancing social attributes and strengthening publicity; simplifying operation procedures and optimizing system quality.

1. Introduction

1.1 Research Background

In recent years, short video app has ushered in a golden development period, and according to the data of short video market research report, as of June 2022, the user scale of short video in China has grown the most significantly, reaching 962 million, up 28.05 million from December 2021, accounting for 91.5% of the overall Internet users. in March 2022, Jitterbug, and its overseas version TikTok, with over 63 million downloads, reigned as the global top mobile app (non-game) download chart, up 9.1% from March 2021. Among them, Jiyin accounted for 11.2% of downloads and TikTok's U.S. market share was 10.7%, which shows that the short video market has a promising future. According to the 50th China Internet Development Statistics Report released by China Internet Information Centre (CNNIC) in Beijing, 99.6% of Internet users use cell phones to access the Internet; 33.3%, 32.6%, 26.7% and 27.6% use desktop computers, laptops, TV, and tablet PCs to access the Internet respectively. This indicates that Chinese Internet users have completed the transfer from PC to mobile terminal devices (Qiu, 2020). With the development of social applications, mainstream social software such as WeChat, QQ, and Weibo can no longer meet people's needs, and the emergence of APP such as games, live streaming, and short videos has gained people's love, among which short video APP are rapidly gaining popularity because of their diverse content forms, low production

threshold, and strong participation. It quickly stands out among all kinds of mobile social applications (Yin, 2019), becoming a new social tool, and is loved by the market in the fast-paced life and work environment.

1.2 Scope of study

This research focuses on the influencing factors of short video APP users' willingness to use continuously. According to the short video industry user data released by Quest Mobile, the number of users and monthly active users of TikTok short video APP are the first. College students aged 18-23 have fully enjoyed the dividend of the times brought by material growth, education level improvement and urbanization, and have grown up on the Internet and social media environment since childhood, it is the true "Internet Indigenous People". Therefore, this research will conduct an empirical study on the college students of TikTok Short Video APP by issuing questionnaires on the online platform.

1.3 Research Limitations

Due to the limitations of my research ability, energy, time and conditions, there are still two limitations. On the one hand, with the continuous development of 5G, not only the short video APP will be positively affected and continue to develop, but also the live broadcast platform, shopping APP and logistics industry will be positively affected and develop. This study focuses only on the short video APP, without considering others. Future scholars can carry out relevant research to fill the academic gap; On the other hand, the limitations of studying potential variables. In this study, perceived ease of use, perceived usefulness, satisfaction, and willingness to continue to use are selected as the main variables. There are also other potential variables, which can be supplemented by future scholars if they are able to do so.

2. Literature Review

Based on the short video APP platform, this chapter explores the relationship between perceived ease of use, perceived usefulness, user satisfaction and Continuous use intention based on the technology acceptance model and expectation confirmation model. Through the definition of the concept of short video APP, the overview of the development process of the short video industry, and the collation of relevant literature reviews, based on the technology acceptance model and the information system continuous use model, the research hypothesis in this study is proposed and an empirical model is established, to obtain the influencing factors of users' continuous use intention. With the continuous development of the short video industry, the content of short video also presents a diversified feature. From the initial vertical video with the length of seconds to the current short video with the horizontal and vertical screens ranging from a few minutes to more than ten minutes, the definition of the concept of short video APP becomes particularly important. Qiao et al (2016) defined short video as a form of video that is suitable for users to use fragmented time to watch in a leisure state, with high-frequency push features, and can be played on various new media platforms within seconds to minutes (Qiao et al, 2016). Chen (2018) believes that short video APP is a video social application developed by relying on mobile intelligent terminals such as smart phones and tablets. Users can use this kind of application anytime and anywhere to shoot or watch videos with a length of about 1 minute, and can like, comment on, or share to social network platforms (Chen, 2018). Yin (2019) believed that the mobile short video APP is a new mobile social media based on mobile intelligent terminals, which has the functions of shooting, editing, and quickly beautifying short videos, with high user participation and real-time sharing (Yin, 2019). Yang (2020) believes that short video APP is an application that allows users to shoot short videos on mobile terminals and upload edited short videos to major social network platforms for real-time sharing (Yang, 2020). Xie (2020) defined short video as playing in vertical screen with a duration of less than 15 minutes and diversified content (Xie, 2020). Zhao (2021) believes that short video is short video, which is a kind of Internet content transmission mode. Generally, it is a video with a duration of less than 5 minutes spread on new Internet media (Zhao, 2021). To sum up, the author defines short video APP as a

n application with a duration of less than 10 minutes, suitable for users to watch in fragmented time and leisure time, mobile, high-frequency push, and other features, and capable of real-time sharing and communication.

3. Methodology

According to the data of the short video market research report, as of January 2023, China's Jitterbug short video user scale of 809 million people, and college students are an important user group of Jitterbug short video APP, of which Jitterbug college student users have reached 26 million, so this study will issue questionnaires in Jitterbug short video APP and other platforms to investigate the college student group users. According to the simple random sampling method, 456 questionnaires were issued. In the item design of the questionnaire variables, this study adopted the combination of mature scale and short video APP features to revise the items to make them more consistent with the theme of this study. Among them, perceived ease of use refers to the scale proposed by Davie (1989) and has been modified according to the theme of this study. A total of 4 items are proposed; Perceived usefulness refers to the scale proposed by Davie (1989) and Bhattacharjee (2001) and is modified according to the research theme. A total of 4 items are proposed; Satisfaction refers to the scale proposed by Oliver (1980) and Bhattacharjee (2001) and is modified according to the research theme. Three items are proposed; The intention of continuous use refers to the scale proposed by Davie (1989) and Bhattacharjee (2001) and has been modified according to the research theme. A total of 3 items have been proposed. Perceived ease of use refers to the degree of difficulty users feel when using short video APP. This study refers to Davie (1989)'s definition of perceived ease of use in the technology acceptance model and the measurement scale, and combines the actual situation of short video APP to design the following measurement questions:

4. Data Analysis and Results

4.1 Descriptive statistical analysis

In this study, 508 questionnaires were collected through the questionnaire platform, and 456 valid questionnaires were collected after eliminating 52 invalid questionnaires, with a recovery rate of 89%. The analysis of demographic information of the participating samples includes gender, grade, length of use, frequency of use, longest time of single use and type of short video preference, as shown in Table 4-1:

Table 1 Analysis of demographic information of the sample

Items	Categories	N	Percent (%)
Gender	Male	201	44.08
	Female	255	55.92
Experience of College	Freshman	109	23.9
	Sophomore	112	24.56
	Junior	105	23.03
	Senior	130	28.51
TikTok APP usage duration	Within three months	63	13.82
	Three months to six months	46	10.09
	Half a year to one year	32	7.02
	More than one year	315	69.08

Use frequency of TikTok APP	Use every day	316	69.3
	Occasional use every week	69	15.13
	Occasionally used every month	7	1.54
	Almost no use	64	14.04
Single use duration of TikTok APP	Within half an hour	118	25.88
	Half an hour to one hour	118	25.88
	One to two hours	103	22.59
	More than two hours	117	25.66
Follow the content category of TikTok APP (humorous)	No	101	22.15
	Yes	355	77.85
Follow the content category of TikTok APP (film and television variety editing)	No	194	42.54
	Yes	262	57.46
Follow the content category of TikTok APP (web blogger live broadcast)	No	358	78.51
	Yes	98	21.49
Follow the content category of TikTok APP (online celebrity or star gossip)	No	283	62.06
	Yes	173	37.94
Follow the content category of TikTok APP (animal pets)	No	268	58.77
	Yes	188	41.23
Follow the content category of TikTok APP (tourism scenery)	No	292	64.04
	Yes	164	35.96
Follow the content category of TikTok APP (life event record)	No	273	59.87
	Yes	183	40.13
Follow TikTok APP content category (news)	No	365	80.04
	Yes	91	19.96
Pay attention to the content category of TikTok APP (knowledge learning)	No	303	66.45
	Yes	153	33.55
Follow TikTok APP content category (others)	No	381	83.55
	Yes	75	16.45
Total		456	100

From the table, we can see that the survey sample users, 44.08% of men and 55.92% of women, indicating that the survey sample gender distribution is more balanced, with slightly more women than women. In terms of grade, 23.9% of the survey users are in the first year of college, 24.56% are in the second year of college, 23.03% are in the third year of college, and 28.51% are in the fourth year of college, indicating that the distribution of the survey sample is more balanced in terms of grade, with the fourth year of college accounting for the most. In terms of the length of use of Jitterbug short video APP, the proportion of users who have used it for more than one year is as high as 69.08%; in terms of the frequency of recent use, the proportion of users who use it every day is as high as 69.3%; and the proportion of users who use Jitterbug APP for more than one hour is nearly 50%. The above analysis results show that users use Jitterbug short video APP for a long total time and use it more frequently, which reflects the

users' willingness to use Jitterbug short video APP continuously and is more suitable as the investigation object of this study.In terms of the survey respondents' preferences of short video types, 77.85% of them are humorous, 57.46% are film and TV variety clips, 21.49% are live bloggers, 37.94% are netizens or celebrity gossips, 41.23% are animals and pets, 35.96% are travel scenery, 40.13% are life event records, 19.96% are news and information, and 33.55% are knowledge learning. The types of short videos more preferred by college students are humorous and funny and film and variety clips.

4.2 Reliability test

Reliability, or reliability, reflects the degree to which the measurement results are consistent, i.e., whether the measurement instrument can consistently measure the matter it is intended to measure. Before starting data analysis on the collected questionnaires, reliability analysis is required. Several approximate measures of reliability that have been proposed include retest reliability, replicate reliability, fold-half reliability, and internal consistency reliability (Li, Chan, 2008). In general, if the Cronbach's α coefficient value of the total scale is above 0.8, the reliability of the total scale is high. 's α coefficient is below 0.7, then the scale needs to be revised or questions added or deleted. If the Cronbach's alpha coefficient of a subscale is 0.7 or higher, the reliability of the subscale is acceptable; if the Cronbach's alpha coefficient is between 0.6 and 0.7, the reliability of the subscale is acceptable; if the Cronbach's alpha coefficient of the subscale is below 0.6, the reliability of the subscale is unacceptable. If the Cronbach's α coefficient is below 0.6, it is unacceptable (Qiu, 2020). The reliability of the measurement items for each variable in this study is shown in Table 4-3.

Table 2 Reliability analysis of variables

	Items	Corrected Item-Total Correlation (CITC)	Cronbach Alpha if Item Deleted	Cronbach α	Cronbach α
Perceived usefulness	A1	0.767	0.845	0.884	0.928
	A2	0.724	0.861		
	A3	0.76	0.847		
	A4	0.742	0.854		
Perceived ease of use	B1	0.735	0.816	0.863	
	B2	0.686	0.836		
	B3	0.715	0.824		
	B4	0.709	0.827		
User satisfaction	C1	0.684	0.768	0.83	
	C2	0.697	0.755		

	C3	0.682	0.77	
Willingne ss to continue using	D1	0.728	0.754	0.84
	D2	0. 692	0. 789	
	D3	0. 692	0. 789	

As can be seen from the above table, the Cronbach Alpha coefficients of the variables perceived usefulness, perceived ease of use, user satisfaction, and intention to continue using all exceeded 0.8, indicating that the variables all have a high degree of confidence. In addition, the Cronbach's Alpha coefficients for each of these variables were smaller than the overall Cronbach's Alpha coefficients after the deletion of a question item, and the correlation between the corrected items and the total of the variable measures was greater than 0.5. Therefore, each measure in this study should be retained for the subsequent analysis. In summary, the four variables and the 14 measures in the questionnaire should be retained.

4.3 Structural Equation Modelling

This study used structural equation modelling to empirically test the relationship between variables and research hypotheses. The specific role of four factors, namely perceived usefulness, perceived ease of use, user satisfaction and intention to continue using, on the intention of the college group users to continue using the Jitterbug short video app, and the structural equation model of the factors influencing users' intention to continue using were determined, as shown in Figure 4-2 below.
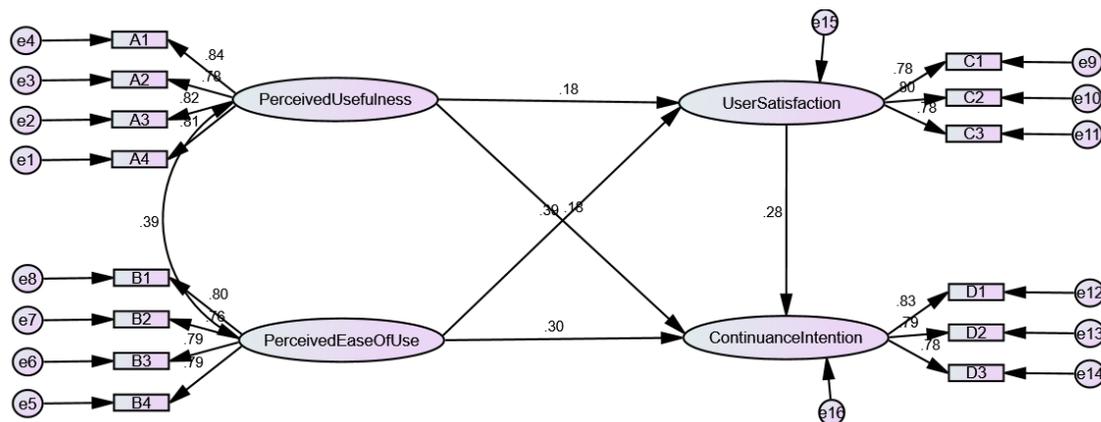

Figure 1 Structural equation model

In the path analysis of the structural equation model, the critical value (C.R.) and P-value are often used to test the significance of the correlation between the variables, and the test criteria are: when the critical value (C.R.) is greater than 1.96 and the P-value is less than 0.05, the path coefficient of the path is considered significant, and the opposite is not significant. The path significance of the model Table 4-8 shows that all 14 paths meet the evaluation criteria, and the absolute values of the standardized loadings system are greater than 0.6 and show significance, implying a good measurement relationship. In this paper, the sample data of 456 valid questionnaires were imported into the initial structural equation model, and the commonly used fitting indices ($\chi2/df$, CFI, TLI, NFI, GFI, RMESA) were used to analyse the fit of the initial model. When the value of RMESA is less than 0.08, it indicates that the fitting value is acceptable, and if it is less than 0.05, it indicates that the fit of the model is When the value of $\chi2/df$ is less than 3, it indicates that the fitted value is acceptable, and if it is less than 2, it indicates that the model fits better; when the value of TLI, CFI, GFI and NFI is more than 0.8, it indicates that the fitted value is acceptable, and if it is

more than 0.9, it indicates that the model fits better, and the closer to 1, the better the model fits. The model was fitted to obtain the fit test table of the initial model, and as shown in Tables 4-9, all six indicators of the model in this study reached a better level. This indicates that the scale of factors influencing users' intention to continue using basically meets the requirements, and the model fits well.

Table 3 Fit coefficients of the structural equation model

Index	χ^2	*df*	*TLI*	χ^2/df	GFI	RMSEA	IFI	CFI	NFI	RFI
Judgment criteria	-	-	>0.9	<3	>0.9	<0.10	>0.9	>0.9	>0.9	>0.9
Value	97.145	71	0.989	1.368	0.971	0.028	0.992	0.992	0.97	0.962

Table 4 Direct effect path analysis detection

Paths			Estimate	S.E.	C.R.	P	SDT
User satisfaction	<---	Perceived usefulness	0.163	0.051	3.204	0.001	0.179
User satisfaction	<---	Perceived ease of use	0.374	0.057	6.538	***	0.389
Willingness to continue using	<---	User satisfaction	0.327	0.068	4.82	***	0.283
Willingness to continue using	<---	Perceived usefulness	0.188	0.056	3.36	***	0.178
Willingness to continue using	<---	Perceived ease of use	0.334	0.066	5.064	***	0.301

According to the direct effect path analysis in Table 4-10, it can be seen that: each critical value (C.R.) is greater than 1.96 and the P value is less than 0.05, so the path coefficients of the above five paths are considered significant, i.e., the research hypotheses H1-H5 are valid.

Table 5 Indirect effect path detection

Paths		Estimate	Lower	Upper	P	Effectiveness Ratio
Indirect effects	Perceived usefulness → User satisfaction → Willingness to continue using	0.054	0.017	0.11	0.005	22.20%
	Perceived ease of	0.122	0.062	0.2	0	26.80%

	use→ User satisfaction → Willingness to continue using				16	.001
Direct effect	Perceived usefulness → Willingness to continue using	0.188	0.061	0.335	0.005	
	Perceived ease of use → Willingness to continue using	0.334	0.187	0.479	0.001	
Total effect	Perceived usefulness → Willingness to continue using	0.241	0.105	0.393	0.001	
	Perceived ease of use →Willingness to continue using	0.457	0.318	0.601	0.001	

From Table 4-11 above, the 95% confidence interval of perceived usefulness → user satisfaction → intention to continue using and perceived ease of use → user satisfaction → intention to continue using do not contain 0, and the mediation effect holds, and the 95% confidence interval of the direct effect does not contain 0, and the partial mediation holds. That is, the research hypotheses H6 and H7 are valid.

5. Conclusion

This study carried out a detailed research by conducting reliability validity test, validation factor analysis and structural equation modelling on the questionnaire data to analyse and verify the factors influencing the intention of continuous use of Jitterbug short video APP college student group users, and the verification results led to the following conclusions: First, according to the direct path effect test in this study, it is known that research hypotheses H1-H5 are all valid, that is, perceived usefulness, perceived ease of use, and user satisfaction have significant positive effects on continued use intention, and perceived usefulness and perceived ease of use have significant positive effects on user satisfaction, respectively. Second, according to the analysis of indirect path effects in this study, it is known that the research hypotheses H5 and H6 are valid, that is, there is a mediating relationship between user satisfaction in perceived usefulness and willingness to continue using; and there is a mediating relationship between user satisfaction in perceived ease of use and willingness to continue using. Thirdly, among the factors influencing the intention to continue to use, according to the structural equation model, the correlation with the intention to continue to use, from strong to weak, is perceived ease of use, user satisfaction, and perceived usefulness, with correlation coefficients of 0.429, 0.402, and 0.344, respectively. In the process of using TikTok short video app, the degree of inner satisfaction users gets in the process of using TikTok short video app, whether they can get the expected information and satisfy the expected desires, such as the number of likes, comments, favourites and views of the created video after the creator created it. Whether the inner satisfaction can be obtained and the social satisfaction in the process of using the short video, hoping to get some fragmented knowledge or information in time and quickly through the short video, to understand the useful information. Combined with the characteristics of short video, short video APP allows users to obtain information, entertainment, and social satisfaction at a lower cost, which fits the psychological needs of users, thus enhancing user satisfaction and thus increasing the willingness of college students to continue to use TikTok short video APP.

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