Influencing Factors of Mobile Shortvideo APP Users' Willingness to Continue Using

Shengliang Wu

11261@sias.edu.cn

School of Business, Sias University in Zhengzhou, Xinzheng, 451150, China

Abstract: Based on the technology acceptance model (TAM) and the Information System Continuous Use Model (ECM-IT), the influencing factors model of mobile short video APP users' willingnes to continue to use was constructed, and the model was empirically analyzed by questionnaire survey and structural equation model. The results showed that: first, the perceived usefulness has positive effects on satisfaction and will continue to use behavior, satisfaction was influenced by perception of entertaining, but will not affect the continuous use for users, perception of interactive impact on satisfaction and continued use will not, and perception of entertaining the biggest impact on user satisfaction degree; Secondly, satisfaction plays a mediating role between perceived usefulness and willingness to continue using.

Key words: short video; APP; user behavior; influencing factors

1 Introduction

With rapid advances of 5G and popularity of the mobile internet, mobile short video APP is one of the most popular network applications. This application has a low entry threshold, fast transmission speed and strong social interactions. According to the 48th Statistical Report of China's Internet Development, by the end of June 2021, the number of internet short video users in China reached 888 million, accounting for 87.8% of total internet users[1]. Due to the large user scale, internet giants such as Twitter and YouTube among others have delved in the short video field and launched various short videos APPs, however the APP of Meipai and Watermelon has received less attention. Therefore, the continuous use of APPS is more important than initial acceptance, and the cost of winning a new customer is five times that of maintaining an old customer[2]. Cultivation of appropriate user habits, improving user loyalty, and ensuring continuous use after first use is particularly important in the short video field[3].

Mobile short video refers to short videos released through various new media platforms and can be played in a few seconds to a few minutes, covering life, entertainment, hot topics, skills and so on. Studies on user behaviors of short videos have focused on user behaviors[4], user preferences[5], user motivation[6-7] and sharing behaviors[8-9], as well as creation motivation of short video content creators[10] and its relationship with short video platforms[11]. Influencing factors for the intention of continuous use of short videos have been elucidated, but not conclusively[12-16]. As new forms of network cultures, short videos play an increasingly important role in social interactions. However, the influence of perceived interactions on users' behavioral intentions to continue using short videos has not been conclusively determined.

ICBBEM 2023, May 19-21, Hangzhou, People's Republic of China

DOI 10.4108/eai.19-5-2023.2334341

Therefore, based on the technology acceptance model (TAM) and Information System Continuous Use Model (ECM-IT), we constructed an influencing factor model of mobile short video users' continuous use behavior to solve the following questions:

RQ1: What are the factors that affect users' willingness to continue using mobile short videos?

RQ2: How do these factors affect users' willingness to continue using mobile short videos?

We aimed at determining the most significant factors and paths that affect willingness of short video users to continue using them, and to provide guidance for enterprises to improve service levels and user stickiness of short video platforms. Our findings will inform governance mechanisms of short video platforms to realize sustainable development of short video platforms, and to provide suggestions for healthy development of other platform enterprises.

2 Literature Review

2.1 Studies on willingness to continue using short videos

In terms of continuous willingness to use information systems, based on technology acceptance models, social cognition theory, innovation diffusion theory and expectation confirmation model, Ifinedo P build a continuous willingness model that shows college students' use of blogs for learning. Empirical analysis revealed that perceived usefulness and perceived compatibility have a positive impact on students' attitudes towards using blogs, and use satisfaction has an impact on intention to continuously use blogs [17]. From a mobile service quality perspective, Wang et al. studied users' willingness to continue using mobile communication applications, integrated mobile service quality framework, inertia and user satisfaction, and established an interpretation model. A survey of 238 users proved that the key factors determining intention of continuous use include interaction quality, environmental quality, inertia and user satisfaction [18]. Taking into account users' emotional states, Gogan et al. integrated the satisfaction theory and stimulus-organic-response theory to conduct an empirical analysis on Chinese microblog users, and concluded that social satisfaction is the most important factor affecting users' satisfaction and emotional commitments [19].

2.2 User behaviors of short videos

In short video research, Zhang Min et al. constructed a theoretical model that is based on two dimensions of mimicry relationship and platform content, combined with information system success model and emotional attachment theory, and verified the positive impact of mimicry relationship commitment and platform emotional attachment on users' willingness to continue using short videos [12]. Based on the expectation confirmation model, Zhang Dawei et al. constructed a theoretical model for influencing factors of users' intention to use short videos. Analysis of the structural equation model showed that factors affecting users' intentions to use short videos include satisfaction, habit and perceived usefulness [13]. Zhang et al. relied on the grounded theory to analyze the influence and mechanisms of different factors on continuous use of short videos by users. The factors affecting the willingness of users to continue using short videos include information user factors, information factors, information technology factors, and information environment factors among others [14]. Xie et al. evaluated the impacts of CCCV on psychological ownership, customer-based brand equity and WOM of short video

platforms, and revealed the potential mechanisms of the short video platform industry's transformation from CCCV to E-WOM [15]. Based on improved technology acceptance model (TAM), Zhao et al. studied users' acceptance of health-related short video advertisements. They found that perceived usefulness, attitude and purchase intentions were significantly affected by four antecedents and perceived ease of use. Perceived usefulness plays an effective mediating role in attitude and purchase intentions [16].

With regards to previous findings, preliminary research ideas and frameworks have been formed for studies on user intentions to continue using short videos. However, studies on user behaviors of short videos are not conclusive, especially with regards to the factors influencing user intentions to continue using. Therefore, from the cognitive perspective, based on the technology acceptance model and information system model to build the model, the continuous use will be perceived usefulness, perceived interactivity and recreational awareness as exogenous latent variables, user satisfaction as the intervening variable research willingness to continue to use with platform and content creators have very strong realistic guiding significance.

3 Theoretical Basis

3.1 Technology Acceptance Model (TAM)

To analyze individuals' acceptance of information systems, Davis proposed a technology acceptance model that is based on rational behavior and planned behavior theories [20]. Davis believed that perceived usefulness and perceived ease of use have an impact on attitudes, and these two variables are affected by other external variables. Due to TAM's good openness and operability, scholars can expand TAM according to different application backgrounds. Therefore, TAM is widely recognized, accepted and adopted in the filed of information systems. Moon et al. believed that ease of use and usefulness cannot fully explain the acceptance behaviors of emerging technologies, thus, they introduced perceived entertainment as a new variable into the model and conducted empirical analysis [21]. In their TAM analysis framework, Brangier et al. extended TAM, believing that human-technology interactions are key factors for user adoption, and took perceived control, human-computer interactions and perceived utility as important factors affecting user adoption [22]. TAM is suitable for studying user acceptance behaviors and can also explain continuous use behaviors [23].

3.2 Continuous Use Model of Information System (ECM-IT)

Successful implementation of an information system includes two stages: initial acceptance and continuous use. The first acceptance does not represent the success of the information system. The first step of the "trial" can let users accept with long-term continuous use being the real success. Bhattacherjee [24] proposed the Information System Continuous Use Model (ECM-IT), which is based on expectation confirmation theory and technology acceptance model. He documented that continuous use behaviors of users in the information system domain is similar to repurchase behaviors in the consumer domain. In this model, users' continuous use of information systems is positively affected by satisfaction and perceived usefulness, while perceived usefulness and expectation confirmation positively affect user satisfaction. Bhattacherjee validated the model by analyzing the behaviors of online banking users. Since ECM-IT was proposed, many scholars have studied and expanded the model by combining

research object characteristics and integrating other theories. Effectiveness of ECM-IT research on users' continuous use intentions has been verified in the fields of shared bikes [25] and mobile news APP [26] among others.

4. Relevant assumptions and model construction

4.1 Hypothesis on influencing factors for continuous use of mobile short video APPs by users

Studies on intentions for continuous use of short videos can follow the current mainstream social media research strategy, because short video services conform to social media characteristics that "users produce content, establish contact, share information, interact with other users and consume the content produced by themselves"[27]. Relevant research assumptions are:

(I) Perceived usefulness and related assumptions

In the technology acceptance model, Davis defined perceived usefulness as users' subjective feelings that using the system can improve work performance before adoption[20]. Perceived usefulness is one of the most commonly used variables for studying users' willingness to continue using short videos. In the expectation confirmation model, Bhattacherjee regards perceived usefulness as the expectation after adoption and believes that it plays a decisive role on user's willingness to continue using the technology, which can directly affect user willingness to continue using the technology and user satisfaction [24]. In terms of research on continuous social media use, it has been reported that perceived usefulness has a positive impact on intentions for continuous use[28-34]. Based on the above studies, the following hypotheses are proposed:

H1: Perceived usefulness of short video APPs has a positive impact on user satisfaction with short video platforms.

H2: Perceived usefulness of short video APPs positively affects use willingness to use short video platforms.

(2) Perception interactions and related assumptions

Interactivity is a multidimensional concept that can be explained from multiple perspectives. From an e-commerce perspective, interactivity is manifested by the availability and effectiveness of customer support tools on the website and the degree of promoting two-way communication with customers [35]. Interactions are divided into interpersonal interactions and human-computer interactions [36], consistent with interactions between users of short video platforms. Perceptual interaction refers to the degree by which users perceive the existence of others in interpersonal communication [32]. Srinivasana et al. analyzed customer loyalty in a B2C environment and found that perceived interactions has a significant impact on customer loyalty [35]. Thorson et al. studied the influence of e-word-of-mouth on peoples’ attitudes towards websites, political candidates and voting intentions. They found that interactivity in the form of blogs significantly affects people's attitudes towards websites, but has no significant effects on candidates' attitudes or voting intentions. However, perceived interactivity affects all three dependent variables, implying that interactivity and perceived interactivity are two independent constructs [37]. Based on S-O-R model, Zhao Chengling et al. divided perceived

interactions into four dimensions; perceived control, perceived responsiveness, perceived individuality and perceived mutual assistance, and verified that perceived control, perceived responsiveness and perceived mutual assistance indirectly affects online learners' continuous learning intentions [38]. From an interactive perspective, Hou Wang studied the factors influencing the public's willingness to continue using government weibo and proved the influence of perceived interactions [39]. Based on users' browsing habits, mobile short video APPs can recommend content, and users can interact with each other through comments, likes, favorites and forwarding when browsing short videos. Therefore, based on the above research, the following hypotheses are proposed:

H3: Perceived interactivity of short video APPs has a positive impact on user satisfaction with short video platforms.

H4: Perceived interactivity of short video APPs positively affects user willingness to use short video platforms.

(3) Perceived entertainment and related hypotheses

Davis added a variable of perceived entertainment into the TAM model and found that perceived entertainment significantly affects users' behavioral intentions [14]. Perceived entertainment refers to personal pleasure, psychological motivation and interest that users feel when using products or services [40]. Users' initial trust in products or services is affected by hedonic motivation, and the degree of trust affects users' willingness to continue using [40]. Studies on influencing factors of mobile myopic APP users' willingness to continue using have introduced perceived entertainment into the model as one of the important factors [41-43]. When Wang Xiwei [44] studied the influencing factors of user behaviors of the webcast APP, he believed that perceived entertainment is part of users' perceived value, which significantly affects users' willingness to continue using. We postulated that as a hedonic information system, if users feel pleasure and relaxation during their use of mobile short video APPs, they will be more willing to use it. Therefore, the following hypotheses are proposed:

H5: Perceived entertainment from short video APPs has a positive impact on user satisfaction with short video platforms.

H6: Perceived entertainment from short video APPs has a positive impact on user willingness to use short video platforms.

(4) Satisfaction and related assumptions

Satisfaction refers to the emotional or psychological state of users after using mobile short video APPs. It reflects whether users like the service or not. Delone et al. [45] reported that user satisfaction is one of the important indicators for measuring the success of information systems. Based on the expectation confirmation theory, Bhattacherjee build his model, and through empirical analysis of online banking users, found that user satisfaction with information systems determines their willingness to continue using it [24]. User satisfaction with contents and services provided by knowledge payment apps is the most important factor affecting whether they continue to use them [46]. When watching a live video, users will be satisfied with the live video service if they can empathize with the host and get a good feeling, thereby enhancing their willingness to continue using it [47]. If users can learn some life tips, find like-minded partners and spend leisure time in relaxation and pleasure during the use of mobile short videos, user

satisfaction with the APP will be improved and their willingness to continue using the APP enhanced. Therefore, the following hypothesis is proposed:

H7: Short video APP users' satisfaction has a positive impact on their willingness to use short video platforms.

4.2 Influencing factor model for mobile short video APP users' willingness to use

Based on above assumptions and analyses, we analyzed user satisfaction of mobile short video APPs on the basis of technological acceptance model and continuous use model of information systems. Moreover, we assessed continuous use intentions by users. With perceived ease of use, perceived interactivity, perceived usefulness and perceived entertainment as external potential variables, satisfaction as the intermediary variable, and willingness to continue using as the internal potential variable, a conceptual model of mobile short video APP users' willingness to continue using was constructed (Figure 1).

4.3 Questionnaire design

(1) Questionnaire design

With reference to relevant studies, the author designed a questionnaire for influencing factors of mobile short video APP users' willingness to continue using. The scale design was as shown in Table 1. The questionnaire consists of two parts. The first part assesses the basic characteristics of mobile short video APP users, including gender, age, and education background among others. To ensure data authenticity and reliability, screening questions are set in this part. Only those who have used short video APPs can complete follow-up questions. The second part denotes the dimension of influencing factors of mobile short video APP users' intention to continue using. There are 5 dimensions and 5 questions are set for each dimension, with a total of 25 questions. Question items are in the form of 5-level Likert scale, which can be divided into "strongly disagree", "disagree", "general", "agree" and "strongly agree". The full questionnaire can be accessed at:

https://www.wjx.cn/wjx/design/previewq.aspx?activity=137347597&s=1.

Before the questionnaire was officially distributed, 10 users of mobile short video APPs were invited to fill in the questionnaire to correct unreasonable expressions or unclear descriptions. Based on user suggestions, some items were revised while questionnaire items were finally determined to enter the data collection stage.

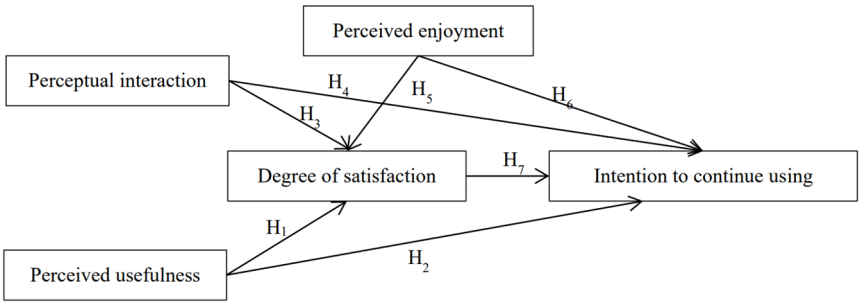

Figure 1: Influencing factor model of mobile short video APP users' willingness to continue using.

(2) Data collection

Questionnaires were issued through the star questionnaire. The distribution period was from January 3, 2022 to January 31, 2022. A total of 308 questionnaires were collected. After eliminating regular and inconsistent questionnaires, 258 valid questionnaires were obtained, with an effective rate of 83.7%.

Table 1: Item description and source

Variable	The index code	Measurement items	source
Perceived usefulness	PU1	Using short video apps allows me to get a lot of information	Davis[20], Moon[21], Gu[40]
	PU2	Using short video APP enables me to learn some knowledge and skills	
	PU3	Use a short video APP to block time	
	PU4	The short video APP allows me to get the content and information I'm interested in	
	PU5	Using short video APP can relieve my pressure in study/work	
Perceptual interaction	PI1	I will comment on short videos that interest me and express my opinions	Srinivasana[35], Mcmillan[36],
	PI2	I can interact with the people I am interested in through the short video APP	
	PI3	Communicating with people in short video apps gives me a sense of respect and recognition	
	PI4	I will share funny short videos with my friends	
	PI5	Short video apps often recommend updates from people I know and are interested in	
perceived enjoyment	PE1	When I use short video apps, TIME flies	Davis[20] YIN[42] WANG[44]
	PE2	I feel happy when I use short video apps	
	PE3	I enjoy the process of using short video apps	
	PE4	When using short video apps, my concentration is high and I sometimes ignore what is happening around me	
	PE5	All in all, I think using short video APP is very interesting	
Variable	The index code	Measurement items	source
satisfaction	SD1	I was very pleased with the short video APP	YIN[42] DeLone&McL

	SD2	I think using short video APP is a wise decision	ean[45] Bhattacher jee[24]
	SD3	I think short video apps meet some of my needs	
	SD4	The interface and interaction design of short video apps are friendly and comfortable to use	
	SD5	The recommended content on the home page of the short video APP meets my viewing needs	
Intention to continue use	CU1	I will continue to use the short video APP	MA[33] Bhattacher jee[24], Moon[21]
	CU2	I would like to recommend short video apps to people around me	
	CU3	If I had a choice, I'd still use the short video APP	
	CU4	I will use short videos as a form of entertainment in the future	
	CU5	I think using short video apps is a popular trend	

5 Data analysis and discussion

5.1 Sample Selection

Based on relevant statistics, among all age groups, internet users aged 20-29 have the highest usage rate of online video services, reaching 97%[1]. Therefore, study participants were mainly young people. Table 2 shows that the proportion of respondents aged between 18 and 25 reached 95.3% of the total sample, indicating that the sample is representative to a certain extent and suitable for empirical analysis.

Table 2: Demographic characteristics of valid samples

(statistical intervals are open on the left and closed on the right)

statistical magnitude		frequency	proportion
gender	male	67	26%
	female	191	74%
age	Under the age of 18	10	3.9%
	18 to 25 years old	246	95.30%
	36 to 45 years old	2	0.8%
Time spent using short video apps	Within 3 months	19	7.4%
	Three months. - Six months	7	2.7%
	Six months. - A year	11	4.3%
	More than one year	211	85.7%
Frequency of short video APP	indeterminacy	38	14.7%

use	1 times a week	6	2.3
	2-3 times a week	14	5.4%
	4 to 6 times a week	23	8.9%
	almost everyday	177	68.6%
Time spent using the short video APP each time	Within 10 minutes	9	3.5%
	10 to 30 minutes	50	19.4%
	31 to 60 minutes	72	27.9%
	More than 60 minutes	127	49.2%

5.2 Reliability and validity test

The SPSS22.0 software was used to test the reliability and validity of the questionnaire data. Bartlett sphericity test statistics and corresponding probability significance (Sig) are shown in Table 3, indicating strong correlations among variables that are suitable for factor analysis. Cronbach'α consistency coefficient was determined to analyze internal consistency reliability for each variable. Cronbach' α for each dimension are shown in Table 4, and were all above 0.7, indicating that each variable had a good internal consistency.

Table 3: KMO and Bartlett test

test rating	statistics
Kaiser-meyer-olkin measurement of sampling appropriateness	.921
Chi-square approximation of Barlet's sphericity test	3289.50
df	120
significance	.000

Confirmatory factor analysis was performed by AMOS 22.0 and SPSS 22.0. Based on the principle that loading of observed and potential variables should not be too low and residual independence, the observed variables were modified, and 20 items were retained (Table 4 and Table 5). Table 4 shows constituent reliability (CR) of perceived ease of use, perceived usefulness, perceived interactions, satisfaction, willingness to continue using and perceived entertainment were 0.863, 0.855, 0.886, 0.883, 0.933 and 0.899, respectively. The AVE values were 0.612, 0.597, 0.686, 0.715, 0.823, and 0.748, respectively. Fornell & Larcker[54] reported that CR values should be above 0.6, while standard value of variance extraction (AVE) should be greater than 0.5, indicating that all our factors have good convergence validities. Table 5 shows that squares for all AVE values are greater than their correlation coefficients with other latent variables, and the scale has a high discriminant validity.

Table 4: Reliability and convergence validity analysis (N =258)

Dimensionality	Item number	Cronbach'α	CR	AVE
Perceived usefulness	4	.846	0.854	0.596
Perceived interactivity	3	.866	0.868	0.686
Perception entertainment	3	.896	0.899	0.748

Satisfaction	3	.887	0.883	0.715
Intention to continue use	3	.930	0.933	0.823

Table 5: Discriminant validity analysis

variable	PU	PI	PA	SD	CU
Perceived usefulness	**0.775**				
Perceptual interaction	0.597	**0.831**			
Perceived enjoyment	0.642	0.566	**0.866**		
Satisfaction	0.643	0.557	0.768	**0.845**	
Intention to continue use	0.611	0.515	0.62	0.672	**0.904**

5.3 Model fitting and hypothesis testing

Based on the above research hypothesis, AMOS was used to establish the structural equation model to be verified. Data were input and run to get the structural equation model (Figure 2). Fit index of the model is shown in Table 6.

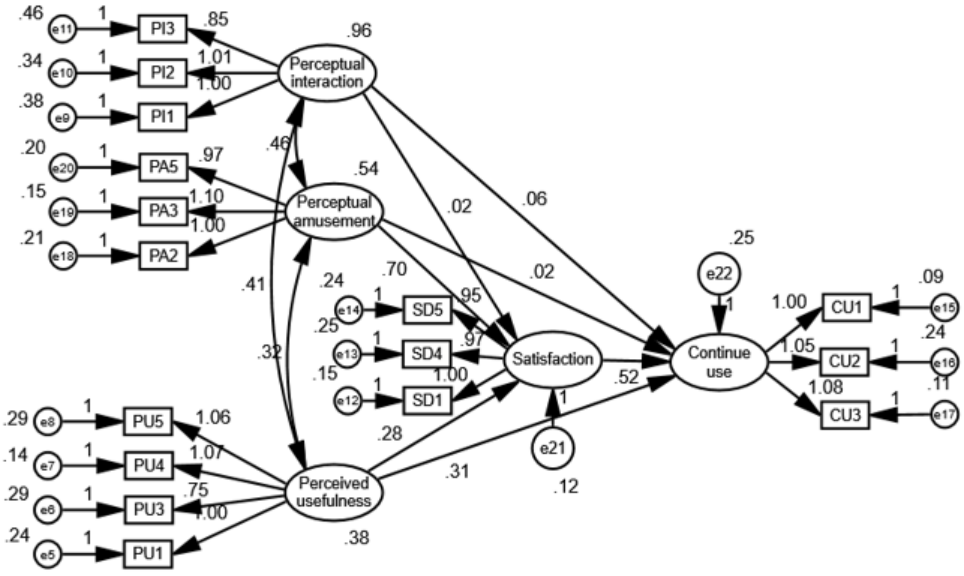

Figure 2: Mobile video APP users' willingness to use model and standardization coefficient

Table 6: Compatibility test of structural equation

Model fitting coefficient	actual value	recommended value	references	Fitting situation
Chi-square	276.582	-		
Degrees of freedom	94	-		

CHI/DF	2.942	<3	WU[48]	excellent
RMSEA	0.087	<0.08	WU[48]	receivability
GFI	0.879	>0.8	Bagozzi[49]	excellent
AGFI	0.825	>0.8	Bagozzi[49]	excellent
IFI	0.944	>0.9	WU[48]	excellent
TLI	0.928	>0.9	WU[48]	excellent
NFI	0.918	>0.9	WU[48]	excellent

Fitness test data in Table 6 shows that all fitness indicators of the structural equation theoretical model meet the standard, and the model has good fitness. Figure 2 and Table 7 show that regression coefficient of standardized paths between perceived usefulness and satisfaction was 0.231 (p =0.003), thus, H1 hypothesis is valid, that is, perceived usefulness positively affects mobile short video users' satisfaction. Normalized path regression coefficient of perceived usefulness to intention to continue using was 0.235 (p =0.009), thus, H2 hypothesis is valid, that is, perceived usefulness positively affects user intention to continue using mobile short videos. Normalized path regression coefficient of perceived interaction to satisfaction was 0.033 (p =0.624), therefore, the H3 hypothesis was not valid. Normalized path regression coefficient of perceived interaction on intention to continue using was 0.071 (p =0.346), thus, the H4 hypothesis is not valid. Regression coefficient of standardized path between perceived entertainment and satisfaction was 0.682 (p<0.001), thus, the H5 hypothesis is valid, that is, perceived entertainment positively affects mobile short video users' satisfaction; Normalized path regression coefficient of perceived entertainment on intention to continue using was 0.022 (p =0.864), thus, H6 hypothesis was not valid. Regression coefficient of standardized path between satisfaction and intention to continue using was 0.502 (p<0.001), so H7 hypothesis is valid, that is, satisfaction has a positive impact on mobile short video users' willingness to continue using.

Table 7: Model verification

path	Standardized load	Nonstandardized load	S.E.	C.R.	P	result
Satisfaction <-- perceived interactivity	0.031	0.024	0.051	0.472	0.637	false
Satisfaction <-- perceived entertainment	0.683	0.699	0.077	9.099	***	establish
Satisfaction <-- perceived usefulness	0.234	0.284	0.091	3.121	0.002	establish
Willingness to continue using <-- perceive interactivity	0.071	0.056	0.06	0.944	0.345	false
Willingness to continue using <-- perceived entertainment	0.018	0.019	0.134	0.143	0.886	false

Willingness to continue using <-- perceived usefulness	0.245	0.309	0.114	2.708	0.007	establish
Willingness to continue using <-- satisfaction	0.498	0.517	0.14	3.682	***	establish

5.4 Discussion and conclusions

Apart from H4, H5 and H7, all the hypotheses are supported, and they are valid.

(1) Perceived usefulness positively impacts satisfaction and willingness to continue using

Standardized estimate of perceived usefulness for mobile short video APP user satisfaction was 0.234 (p=0.002) while the standardized estimate of perceived usefulness for mobile short video APP users' willingness to continue using was 0.245 (p=0.007). Assuming that H1 and H2 are verified, that is, perceived usefulness positively affects satisfaction and willingness to continue using. Content creators through the short video APP platform including skill sharing, humorous, social hot topics such as content, can meet the demand of user study, entertainment, keep track of current events and so on, this is largely improved customer satisfaction, increase the user stickness, as users are willing to stay in the main reason for the short video platform. This conclusion is consistent with those of Bhattacherjee[24] and Xue Yunjian et al.[46]. The short video APP platform is a typical two-sided market. Users on both sides are content consumers and content producers, respectively. Users on both sides depend on each other. Content consumers stay on the platform because they can browse content they find useful, and professional content producers stay on the platform because they can reap traffic revenue from carefully produced content, thereby contributing to cross-edge network positive feedback effect. The mobile short video APP platform has absolute control and distribution right of content consumers' attention and traffic resources. Therefore, through incentive mechanisms, the platform can promote content creators to produce more high-quality content to improve user satisfaction and willingness to continue using.

(2) Perceived entertainment has a positive effect on satisfaction, but has no effect on willingness to continue using

Standardized estimate value of perceived entertainment on user satisfaction of mobile short video APP was 0.683 (p< 0.001). However, standardized estimate value of perceived entertainment on continuous use intention of mobile short video APP by users was 0.018 (p=0.886). Thus, hypothesis H5 was verified while hypothesis H6 was invalid. That is, perceived entertainment has a positive effect on satisfaction, but has no effects on willingness to continue using. Short videos enrich people's entertainment methods. In the fast-paced living environment, short videos meet people's entertainment needs. Besides, the video content is short, ranging from a few seconds to a few min. Therefore, perceived entertainment from mobile short video platforms enhances user satisfaction. This conclusion is consistent with that of Yin Jiajia[42]. Due to its vertical, entertainment and fragmentation characteristics, mobile short videos attract people's attention and may lead to addiction [50-51]. With mobile short video users increasing rational investment of time on the service, perceived entertainment can improve customer satisfaction, but does not affect continuous use.

(3) Perceived interaction has no effects on satisfaction and willingness to continue using

Standardized estimates of perceived interactivity for user satisfaction and willingness to continue using mobile short video APP were 0.031 (p=0.637) and 0.071 (p=0.345), respectively. Therefore, hypothesis H3 and hypothesis H4 are invalid. Mobile short video APP users mainly use the service for entertainment and consultation, and the social function is not the only requirement for the service. Therefore, the recommendation service based on address book of short video service platform is of little significance to users. The reason why hypotheses H4 and H5 are not tenable may be attributed to sample data: First, more than 95% of the users in the sample were young people aged 18-25. Although they are the main users of short video APP products, they have a wide range of channels to receive product and service information, and their social needs are mainly met by strong social platforms such as wechat, Xiaohongshu and B station. Furthermore, the sample of more than 70% of users often use the short video of the APP is Tiktok, the Tiktok platform is "content is king" business model, the platform based on weak relationship chain emphasizes content quality distribution model, which based on strong relationship with the chain of distribution model based on the social attention quickly short video APP contrasts. This conclusion provides a basis for follow-up studies. Whether perceptual interactions of different groups has an impact on their satisfaction and willingness to continue using is a question for further studies.

(4) Satisfaction has a positive impact on continuous use intentions

Standardized estimated value of satisfaction on intentions to continue using was 0.498 ($p< 0.001$). Assuming that H7 is true, that is, satisfaction has a positive impact on intentions to continue using, then, satisfaction is a significant mediator between perceived usefulness and willingness to continue using. This conclusion is consistent with that of Song Huiling[46] in their study on continuous use intentions of users in the knowledge Q&A community. Before using mobile short video APPs, users have certain psychological expectations. When user experience meets or exceeds expectations, user satisfaction is improved, thus improving customer loyalty, and end user's willingness to continue using is enhanced. In the face of strong market competition, mobile short video platforms should fully grasp user needs through big data analysis, comprehensively optimize customer experience through technology, policies and other means, and improve customer satisfaction. Short video content creators should subdivide customers on the basis of dividend utilization and operation rules, cultivate vertical fields, and produce interesting and useful content that users are interested in to improve user satisfaction.

6 Conclusions

Based on the technology acceptance model (TAM) and information systems continuous use model (ECM-IT), we established the influencing factors model for mobile short video users' willingness to continue using. Perceived interactivity, perceived usefulness and perceived entertainment were taken as potential variables of external factors, while satisfaction was taken as the mediating variable. Empirical analysis revealed that perceived usefulness has a positive impact on satisfaction and willingness to continue using. Perceived entertainment has a positive impact on satisfaction, and is the most important factor affecting satisfaction. Perceived interactivity has no effect on satisfaction and willingness to continue using. At the same time, as a mediator variable, satisfaction affects users' willingness to continue using. This paper

expands the research field based on TAM and ECM-IT and provides a new analysis model for mobile short video user behaviors.

This study has a strong practical significance, embodied in the following aspects: (1) Currently, mobile short videos are one of the most popular network applications, and have become a new height for layout and competition of internet giants. How to attract and retain users is a guarantee for final victory of short video APPs. Determining the factors affecting users' continuous use of mobile short video APPs has a certain guiding significance for major operators to design platforms, formulate operating rules and promote value co-creation. (2) Relevant research shows that the four key components of mobile short video business model are content, traffic, operation and actability. Through empirical analysis, the influencing factors that affect users' continuous use are found out, which points out the direction of content innovation for short video content creators and also provides ideas for realization of private domain traffic. (3) The research conclusion of this paper points out the direction for platform enterprises' business model innovation and analyzing the realization mechanisms of business model value creation under the network effect.

There are some limitations in this study. Most of the participants were young people and the group was relatively single. The study group should be expanded and comparative analyses conducted to improve the universality of the conclusion.

References

[1] China Internet Network Information Center. The 48th Statistical Report on Internet Development in China [EB/OL]
http://www.cnnic.net.cn/hlwfzyj/hlwxzbg/hlwtjbg/202109/P020210915523670981527.pdf.

[2]Parthasarathy M, Bhattacherjee A. Understanding Post-Adoption Behavior in the Context of Online Services[J]. Information Systems Research, 1998, 9(4):362-379.

[3] Min Zhang, Bei-ni Long et al. Research on the influence factors of short video APP users' continuous use and its implications for public governance in this field [J]. Modern information, 2020,40 (03) : 65-73.]

[4] Xiao Kong. Research on users of "Douyin" short video APP based on network ethnographic survey [D]. Jinan: mountain East University, 2018.

[5]Yarosh S, Bonsignore E, Mc Roberts S, et al. Youth Tube:Youth Video Authorship on You Tube and Vine［C］ // Proceedings of the 19th ACM Conference on Computer－Supported Cooperative Work ＆Social Computing. ACM，2016: 1423－1437.

[6]Huang Y T，Su S F. Motives for Instagram Use and Topics of Inter-est Among Young Adults［J］. Future Internet，2018，10 (8) :77.

[7]Wang Y W. Humor and Camera View on Mobile Short－form Video Apps Influence User Experience and Technology－adoption Intent，an Example of Tik Tok (DouYin)［J］. Computers in Human Behavior, 2020, 110: 106373.

[8]Shah P, Loiacono E T, Ren H. Video Blogs: A Qualitative and Quantitative Inquiry of Recall and Willingness to Share［C］ // In-ternational Conference on Social Computing and Social Media. Springer, Cham, 2017: 234－243.

[9]Li J. Studies on Douyin App Communication in Social Platforms:Take Relevant Douyin Short Videos and Posts on Microblog as Exam-ples［C］ // 2018 International Conference on Arts, Linguistics, Literature and Humanities. UK，2018: 313－317.

[10] Chen wang. Research on the motivation of short video content providers [D]. Beijing: Beijing Foreign Studies University, 2017.
[11] Chen-fei Liu. Research on the cooperative relationship between short video platform and creators [D]. Nanjing: Nanjing University, 2018.
[12] Zhang Min, Long Beni et al. The formation mechanism and governance prospect of short video APP users' intention to continue using: based on the analysis perspective of mimicry companionship [J]. Journal of Modern Information, 2021, 41(07) : 49-59.]
[13] Da-wei Zhang, Yan-xin Chen, Wang Min. Expectation and validation: A preliminary study on the influencing factors of continuous use of short video platform based on SEM and fsQCA [J]. Modern communication (Journal of communication university of China), 2020,42 (08) : 133-140.
[14] Zhang M, Long B, Liu Y, et al. Analysis on the Influencing Factors of Short Video Users' Continuance Intention and its Enlightenment for Public Administration[J]. Journal of Modern Information, 2020.
[15]Xing-Zheng, Xie, Nian-Chung, et al. Does customer co-creation value lead to electronic word- of-mouth? An empirical study on the short-video platform industry - ScienceDirect[J]. The Social Science Journal, 2019, 56(3):401-416.
[16] Zhao J , Wang J. Health Advertising on Short-Video Social Media: A Study on User Attitudes Based on the Extended Technology Acceptance Model[J]. International Journal of Environmental Research and Public Health, 2020, 17(5):1501-.
[17]Ifinedo P. Determinants of students' continuance intention to use blogs to learn: an empirical investigation[J]. Behaviour & Information Technology, 2018, 37(4-6):381-392.
[18]Wang W T, Ou W M, Chen W Y. The impact of inertia and user satisfaction on the continuance intentions to use mobile communication applications: A mobile service quality perspective[J]. International Journal of Information Management, 2019, 44(FEB.):178-193.
[19]Gogan I, Zhang Z, Matemba E. Impacts of Gratifications on Consumers' Emotions and Continuance Use Intention: An Empirical Study of Weibo in China[J]. Sustainability, 2018, 10(9).
[20] F. D. Davis. Perceived Usefulness，Perceived Ease of Use，and User Acceptance of Information Technology. MIS Quarterly，1989，13(3): 319-340.
[21]Moon J W, Kim Y G. Extending the TAM for a World-Wide-Web context[J]. Information & Management, 2001, 38(4):217-230.
[22]Brangier E, Sonia Hammes-Adelé. Beyond the Technology Acceptance Model: Elements to Validate the Human-Technology Symbiosis Model[C]// Ergonomics & Health Aspects of Work with Computers-international Conference. Springer-Verlag, 2011:13-21.
[23]Hong S J, Thong J Y L， Tam K Y. Understanding continued information technology usage behavior: A comparison of three models in the context of mobile internet[J]. Decision Support Systems, 2007, 42(3):1819-1834.
[24]Bhattacherjee A. Understanding Information Systems Continuance: An Expectation-Confirmation Model[J]. Mis Quarterly, 2001, 25(3):351-370.
[25] Xiao-fang Yuan, Ying Fang, Zi-wei Jin. Research on The Influence factors of Continuous Use intention of Bike-sharing Users [J]. Industrial process and management, 2019,24 (06) : 149-156+172.
[26] Yi Liu, Ting-song Zhang. Research on the influencing factors of mobile news APP's intention of continuous use -- Expansion of expectation confirmation model based on continuous use of information system [J]. Journal of southwest university for nationalities (humanities and social sciences edition),2020,41(03):151-156.
[27]Katharina Berger, Julia Klier, et al. A Review of Information Systems Research on Online Social Networks[J]. Communications of the Association for Information Systems, 2014, 35:145-172.

[28] Bao Dai, Ye-zheng Liu. Research on continuous use intention of wechat users based on Expectation confirmation Model, Social Presence and Flow experience [J]. Modern information,2015,35(03):19-23.
[29] Jian-jun Sun, Lei Pei, Hong Liu. Construction of continuous Usage Model for video Website based on Expectation Confirmation Model [J]. figure Book and Information Knowledge, 2013(05) : 82-88+45.
[30] Pei Zhou, Su-yun Fu, Yue-chu Zhao n. An empirical study on the determinants of continuous use of shopping APP users [J]. Journal of nanjing normal university (natural science), 2020,43 (02) : 140-148.
[31] Bao-guo Zhao, Yao Yao. Research on the influence factors of users' willingness to continue using knowledge payment APP [J]. Library Science Research, 2017(17) : 96-101.]
[32] Jia-qi Liu, Wan Ke, Chun Liu. Study on the Influencing factors of Continuous Use intention of Bike-sharing Users based on TAM ECM Model [J]. Journal of soft science, 2019,33 (07) : 116-121.
[33] Zhi-hao Ma, Jin-ping Ge, Xiang Zhou. Understanding Antecedents of Live Video Stream Continuance Use and Users′ Subjective Well-being via Expectation Confirmation Model and Parasocial Relationships [J]. Review of journalism and communication, 2020,73 (02) : 29-46.
[34] Zhou Yu. Research on the Influencing factors of Users' Continuous Use intention of online live broadcasting Platform [D]. Shanghai Jiaotong University,2017.
[35]Srinivasana S. S. Andersona R. Ponnavolub K. Customer loyalty in e-commerce: An exploration of its antecedents and consequences[J]. Journal of Retailing, 2002, 78(1):41-50.
[36]Mcmillan S J, Hwang J S. Measures of Perceived Interactivity: An Exploration of the Role of Direction of Communication, User Control, and Time in Shaping Perceptions of Interactivity[J]. Journal of Advertising, 2002, 31(3):29-42.
[37]Thorson K. S. Rodgers S. Relationships between blogs as EWOM and interactivity, perceived interactivity and parasocial interaction[J]. Journal of Interactive Advertising, 2006, 6(2):5-44.
[38] Cheng-ling Zhao, Xian Wang, Chen-xing Ma. The influence of perceived interaction on online Learners' intention to continue learning: an S-O-R perspective [J]. Modern Distance Education, 2018(03) : 12-20.
[39] The Queen. Research on the influencing factors of public willingness to continue using government weibo from the perspective of interaction [D]. Zhejiang University of Finance and Economics, 2019.
[40]Gu Z, Wei J, Xu F. An Empirical Study on Factors Influencing Consumers' Initial Trust in Wearable Commerce[J]. Journal of computer information systems, 2015, 56(1):79-85.
[41] surianoka. Research on the influencing factors of users' intention to continue using mobile short video APP [D]. Anhui University, 2018.
[42] Jia-jia Yin. Research on continuous Use intention of mobile short video APP users [D]. Shandong University, 2019.
[43] Jing-han Qiu. Research on the influencing factors of continuous use behavior of mobile short video APP users [D]. Southwest University, 2020.
[44] Xi-wei Wang, Wei-li Liu et al. Model and empirical study on influencing factors of webcast APP use behavior [J]. Library and information service, 2020,64 (05) : 22-31.
[45]Delone W H, Mclean E R. The DeLone and McLean Model of Information Systems Success: A Ten-Year Update[J]. Journal of Management Information Systems, 2003, 19(4):9-30.
[46] Yun-jian Xue, Yu Dong, Xu-jin Pu. Model construction and empirical research on continuous use intention of knowledge paying App users [J]. Economics and Management, 2021, 35(04): 17-23.
[47] Fan Xiaojun, JIANG Xinyu et al. [J]. Journal of systems management, 2020,29 (01) : 106.
[48] Ming-long Wu. Structural Equation Modeling: Operation and Application of AMOS (2nd edition) [M]. Chongqing: Chongqing University Press, 2010.

[49]Bagozzi R P, Yi Y. On the evaluation of structural equation models[J]. Journal of the Academy of Marketing Science, 1988, 16(1):74-94.
[50] Xia Li, Hao-xuan Qin et al. Relationship between short video addiction and personality in College Students [J]. Chinese Journal of Mental Health, 2021, 35(11) : 925-928.
[51] Jian-ya Wang et al. Research on the Influence factors of Mobile Phone Short Video Overuse among College Students [J]. Library Science Research, 2020(13) : 84-95.
[52] Feng-quan Wang, Ji-hai Jiang et al. How does Internet short video business model achieve value creation? -- A Case Study of Douyin and Kuaishou [J]. Foreign Economics and Management, 2021, 43(02) : 3-19.
[53] Hui-ling Song, Chuan-min Shuai et al. An empirical study on users' Willingness to continue using Knowledge answering Community [J]. Journal of information resources management, 2019,9 (04) : 68-81.
[54]Fornell C, Larcker D F. Structural Equation Models with Unobservable Variables and Measurement Error: Algebra and Statistics[J]. Journal of Marketing Research, 1981, 18(3):382-388.