Study on the Influential Factors of the Social Platforms Users Loyalty: The Flow Theory Perspective——Take Mobile Short Video Software as an Example

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Abstract. In the rapidly developing self-media era, mobile short video social applications have become a brand-new form of social entertainment, which have aroused widespread concern. In order to promote these applications and increase user usage, this paper, on the basis of flow theory, took users of it as the research object, and constructed a model of influencing factors on user loyalty. Based on a comprehensive analysis of 196 valid samples, this paper explored the relationship between eight factors and user loyalty in three dimensions: conditional factors, experiential factors and resultant factors. Finally, the hypothesis will be validated through data analysis, and this paper puts forward effective marketing suggestions for the development of short video social application in the future according to the three most obvious factors. These conclusions will provide reference for the operation and development of other similar industries and promote the sustainable development of the short video industry.

Introduction

With the continuous development of mobile Internet, a single form of pictures and texts has been unable to meet the needs of contemporary people to pursue individuality. More and more people are looking for a new, simple form to express their feelings. Short video software came into being. The first to launch the mobile short video social platform was Viddy of the United States. The development of domestic short video began in August 2013 with the built-in “Miaopai” short video sharing function launched by Micro-blog [1]. A lot of short video software began to appear since 2016. They meet the needs of people in the "countdown era" for accessing information with the characteristics of strong visualization, fragmentation, and high interactivity [2]. And it has opened up a new form of entertainment and social networking. According to the relevant data, in the mobile short video industry in August 2017, the number of active monthly mobile devices was 310 million, and the frequency of use and the length of use were also growing. The market size of the entire industry reached 5.73 billion, an increase of 183.9% year-on-year [3].

On the premise of fully understanding and meeting the needs of consumers, enterprises are more conducive to the development of their service marketing activities. For mobile video social media merchants, researching users' flow experiences will help business effectively improve the service quality, increase user's viscosity, and expand the number of users, and it has great commercial value.

Theoretical Overview and Related Research

The flow theory was first proposed by the American psychologist Csikszentmihalyi (1975), who pointed out that when people participate in an activity, they can enter into a subjective state of temporary immersion if they are fully committed to the activity [4]. In the following research, Novak, Hoffman (2000) and others thought that the flow experience would affect the willingness and attitude of virtual users’ user behavior [5]. Wang Na (2014) constructed a theoretical model of user loyalty in the network community and proved that there is a significant positive relationship between the flow theory factors and the user's intention to use it continuously [6]. Feng Chongjun

(2014) combined behavioral motivation theory with flow theory to investigate college student user groups, studied the factors influencing Micro-blog's flow experience, and established related models [7]. Fu Hui (2017) believed that mobile short video social software provides users with a recreational platform, which has social attributes [8]. Li Na (2015) believed that there are two factors of user self-exposure and self-propagation in the marketing of Meipai [9]. Lu Jun (2017) conducted a survey of 1000 students from Inner Mongolia University and put forward suggestions on Micro-blog to attract and retain users [10].

In summary, it can be seen that the emergence of mobile short video social platforms is relatively late and the research on it is relatively missing at home and abroad. The focus of rare literature research is on the development of short video, content production and communication marketing. There are few direct research literatures on the influencing factors of user loyalty, and most of the research is focused on the embedded video of the integrated platform, which leaves a certain research space for this paper.

Theoretical Model and Research Hypothesis

This paper uses the flow theory in psychological research as the theoretical support. In 1996, Jackson and Marsh [11], on the basis of Csikszentmihalyi research, put forward nine elements of flow theory [12]. So far, the flow theory has formed a complete field in the research of work, sports, education and leisure, and network [7].

The theoretical model of this study takes into account the actual characteristics of short video software and draws on the model of the factors influencing the loyalty of Wang Na (2014) [6]. It is considered that the influencing factors of user loyalty of short video software should focus on psychological aspects, and the measurement model of this paper is obtained, as shown in Figure 1.

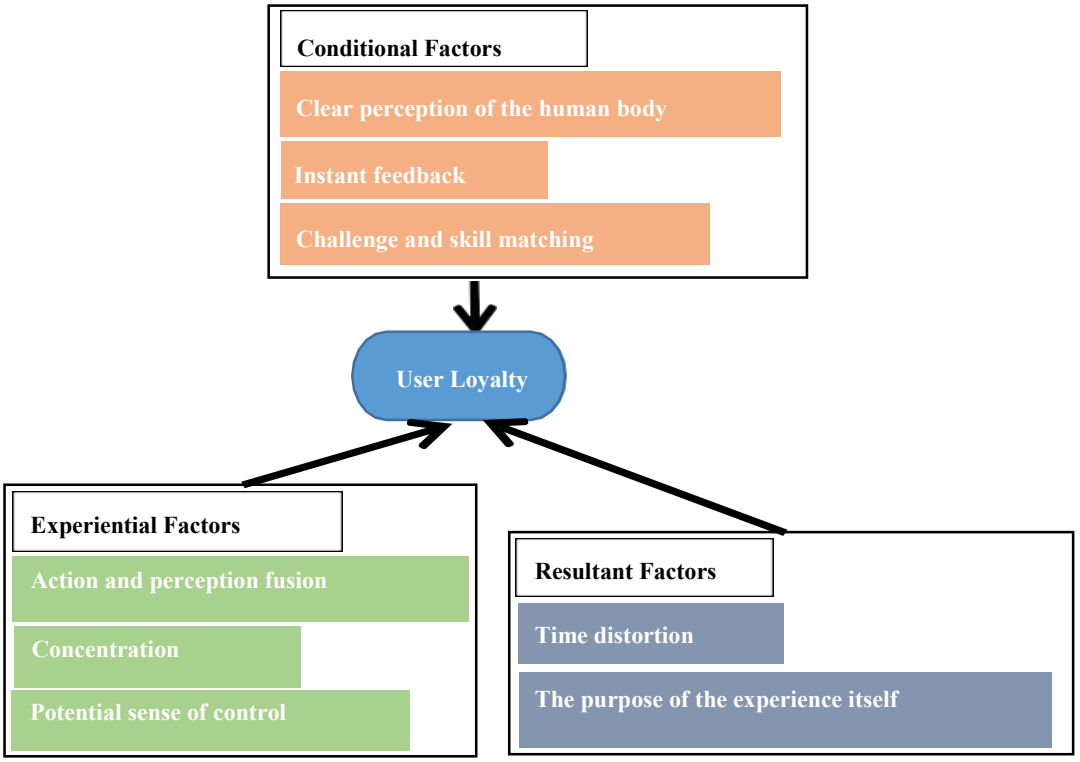

Fig.1, Research model of user loyalty influencing factors of mobile short video social applications

Conditional Factors

The three influencing factors of clear perception of the human body, immediate feedback, challenge and skill matching are reduced to conditional factors, namely, the factors that the activity

itself should have before entering a flow state. The relationship between conditional factors and user loyalty can be hypothesized as follows:

H1: There is a positive correlation between the clear perception of the human body and user loyalty;

H2: There is a positive correlation between instant feedback and user loyalty;

H3: There is a positive correlation between challenge and skill matching and user loyalty;

Experiential Factors

The experiential factors include three sub-elements: action and perceptual fusion, concentration and potential sense of control, which are summarized as the characteristics that individuals can perceive after entering the flow phase. The relationship between experiential factors and user loyalty can be hypothesized as follows:

H4: There is a positive correlation between the action and perceptual fusion and user loyalty;

H5: There is a positive correlation between concentration and user loyalty;

H6: There is a positive correlation between potential sense of control and user loyalty;

Resultant Factors

Time distortion and the purpose of the experience itself can be summed up as resultant factors, which is reflected in the experience and influence that the individual can acquire from this process after being flowed. The relationship between resultant factors and user loyalty can be hypothesized as follows:

H7: There is a positive correlation between time distortion and user loyalty;

H8: There is a positive correlation between the purpose of the experience itself and user loyalty.

Questionnaire Design and Data Analysis

Questionnaire Design

This questionnaire was designed on the basis of literature reading and reference to previous research results. The whole questionnaire mainly includes three parts, which are basic information, understanding of the short video software and feelings of use. The questionnaire is in the form of a five-point Likert scale.

Data Analysis

The survey is for users who have used the type of software. The questionnaire was mainly distributed online, and finally 279 questionnaires were collected, of which 196 were valid, and the recovery rate was 70.25%, which was in line with the quantitative requirements of the demonstration.

Descriptive Statistical Analysis

The study uses SPSS 17.0 statistical software for analysis:

(1) Descriptive statistics of individual information, as shown in Table 1:

The survey showed that the use of short video software was mostly female, accounting for 67.86%. In terms of age distribution, it can be seen that the group is mainly aged between 21 and 25. To the extent of education, 81.12% of the population had a bachelor's degree, indicating that these people have a strong ability to accept new things. More than half of the users' occupational distribution is students, while the number of administrators is the fewest, accounting for 7.14%.

Table 1, Descriptive statistics of individual information

	Sample Size	Percentage		Sample Size	Percentage
Age			**Career**		
Age 20 and below	16	8.16%	Student	108	55.1%
21-25 years	148	75.51%	Administration staff	14	7.14%
26-30 years	17	8.67%	Company employee	28	14.29%
31-35 years	11	5.61%	Teacher	15	7.65%
Age 36 and above	4	2.04%	Other	31	15.82%
Gender			**Education level**		
Male	63	32.14%	Senior secondary and below	11	5.61%
Female	133	67.86%	Junior college	26	13.27%
			Undergraduate	106	54.08%
			Postgraduate and above	53	27.04%

(2) Descriptive statistics of sample characteristics, as shown in Table 2:

In Table 2, we can see that 54.59% of people have been using short video software continuously for less than half a year, and 10.2% have been using it for 2-3 years. This shows that although this type of software is a new social platform, it has gained people's favor and has a high level of user loyalty. In the daily usage statistics, most people will keep the time within 2 hours. The first three software most commonly used by people are Douyin, Kuaishou, and Meipai. In terms of the factors that attract users, the first is “rich video content”, followed by "friend recommendation". Therefore, as a video application, users are most concerned about the content, while the mutual recommendation of friends also fully reflects the social attributes of the application.

Table 2, Descriptive statistics of sample characteristics

Content	Option	Sample Size	Percentage	Content	Option	Sample Size	Percentage
Continuous service time	Less than half a year	107	54.59%	Attraction	Friend's recommendation	107	54.59%
	Half a year to one year	4	2.04%		Video is rich in content	137	69.9%
	1-2years	52	26.53%		Unique features	63	32.14%
	2-3years	20	10.20%		Meet the needs of creation	55	28.06%
	More than 3 years	13	6.63%		Other	26	13.27%
Commonly used software	Douyin	135	68.88%	Daily service hours	Within 1 hour	117	59.69%
	Kuaishou	66	33.67%		1-2hour	49	25%
	Xiaokaxiu	26	13.27%		2-3hour	19	9.69%
	Meipai	70	35.71%		More than 3 hours	11	5.61%
	Miaopai	38	19.39%				
	Other	104	53.06%				

(3) Analyze variable descriptive statistics.

As shown in Table 3, except for the mean value of one item is 2.95, the others fluctuate around 3.7, indicating that the respondents had a higher sense of identification with each variable. From the standard deviation, except for a few items, all other items are less than 1, which indicates that the respondents have the same attitude towards the problem. According to the whole descriptive statistical analysis table, the overall effect of the questionnaire is good.

Table 3, Analyse variable descriptive statistics

Items	Min	Max	Mean	Standard deviation	Items	Min	Max	Mean	Standard deviation
10-1	1	5	3.70	.925	14-3	1	5	3.18	1.026
10-2	1	5	3.67	.893	15-1	1	5	3.46	.978
11-1	1	5	3.78	.864	15-2	1	5	3.41	.921
11-2	1	5	3.73	.896	16-1	1	5	3.68	.984
12-1	1	5	3.68	.919	16-2	1	5	3.36	1.040
12-2	1	5	3.55	.946	17-1	1	5	3.45	.907
12-3	1	5	3.68	.935	17-2	1	5	3.78	.836
13-1	1	5	3.83	.785	18-1	1	5	3.67	.893
13-2	1	5	3.78	.893	18-2	1	5	3.42	.949
14-1	1	5	3.33	1.011	18-3	1	5	3.43	.966
14-2	1	5	2.95	1.034					

Reliability and Validity Analysis

(1) Reliability Analysis.

According to the reliability of the analysis variables in the questionnaire, the Cronbach's Alpha value reached 0.939, based on the standardized Cronbach's Alpha value reached 0.940. Therefore, the design of the questionnaire is stable and reliable.

(2) Validity Analysis.

The validity of the questionnaire is shown in Table 4: The KMO value is 0.895, which is close to 1 and has good validity. The Sig value of Bartlett sphere test is 0.000, which is suitable for factor analysis. Factor analysis was performed on all independent variables, a fixed quantity (8) factor was extracted, and rotation of the maximum variance method was performed. Finally, the cumulative variance of explanatory variables reached 83.908%. From the rotation component matrix table (Table 5), it can be seen that the extracted 8 factors are consistent with the original assumptions, and the items correspond to each other, which proves that the eight independent variables in the questionnaire are designed reasonably.

Table 4, Testing by KMO and Bartlett

Sample a sufficient Kaiser-Meyer-Olkin metric.		.895
Bartlett's sphericity test	Approximate Chi-square	2209.097
	df	153
	Sig.	.000

Table 5, The rotation component matrix table[a]

	Element																
	1	2	3	4	5	6	7	8		1	2	3	4	5	6	7	8
10-1	.099	.193	.852	.216	.114	.022	.133	.161	**14-1**	.805	.100	.053	.077	.119	.199	.180	.239
10-2	.032	.176	.883	.123	.127	.050	.211	.075	**14-2**	.891	.053	.028	.050	.082	.159	-.009	.110
11-1	.036	.286	.328	.271	.119	.206	.690	.175	**14-3**	.776	.070	.091	.134	.301	.198	.071	.045
11-2	.218	.135	.224	.420	.165	.079	.709	.105	**15-1**	.266	.206	.131	.262	.761	.088	.115	.177
12-1	.082	.647	.206	-.022	.375	.102	.399	.187	**15-2**	.252	.319	.148	.138	.739	.161	.133	.144
12-2	.146	.696	.242	.179	.379	.102	.249	.102	**16-1**	.214	.013	.127	.182	.288	.812	.151	.149
12-3	.077	.794	.189	.381	.097	.104	.018	.160	**16-2**	.361	.191	-.043	.076	-.031	.827	.065	.077
13-1	.127	.219	.237	.754	.150	.153	.242	.189	**17-1**	.286	.236	.152	.103	.175	.047	.164	.816
13-2	.113	.240	.186	.690	.262	.148	.301	.138	**17-2**	.168	.106	.181	.377	.186	.372	.090	.662

Correlation Analysis

From Table 6, we can get that there are 7 variables out of 8 variables with large Person values and all positive, and the data is significantly correlated at the 0.01 level (bilateral); The Spearman non-parametric correlation analysis between the variable “instant feedback” and the dependent variable shows that the correlation is significant when the confidence (bilateral) is 0.05. Thus, all 8 variables have a significant positive correlation with the dependent variable "user loyalty", and the original hypothesis verification is established.

Table 6, Correlation analysis

		User loyalty			User loyalty
Clear perception of the human body	Pearson correlation	.279**	Potential sense of control	Pearson correlation	.267**
	Significant (bilateral)	.000		Significant (bilateral)	.000
Challenge and skill matching	Pearson correlation	.245**	Time distortion	Pearson correlation	.235**
	Significant (bilateral)	.001		Significant (bilateral)	.001
Action and perception fusion	Pearson correlation	.311**	The purpose of the experience itself	Pearson correlation	.361**
	Significant (bilateral)	.000		Significant (bilateral)	.000
Concentration	Pearson correlation	.298**	Instant feedback	Spearman correlation	.158*
	Significant (bilateral)	.000		Significant (bilateral)	.027.

**. Significant correlation at .01 level (bilateral); *. Significant correlation at .05 level (bilateral)

Summary and Prospects

Conclusions and Recommendations

The mobile video industry competition is fierce. How to attract and retain users in the entire industry is particularly important. This study uses the “flow theory” of the psychology category to analyze the influencing factors of user loyalty. Finally, it is concluded that there is a significant positive correlation between 8 dimensions and user loyalty, of which three are the most obvious. The research results provide a good empirical support for the development of short video social platforms.

There is a positive correlation between the action and perceptual fusion and user loyalty. When users use software, they can consciously integrate their behavior and feelings, completely immersed in it, to gain a sense of happiness, which will increase users' preference for software. Therefore, the short video platform should create a flow atmosphere for the users. On the one hand, we can add AR technology creating scene-based services for users to experience the immersive feeling and increase the user interaction and contact with the platform itself; On the other hand, companies need to add more personalized services, set up relay activities or continuously browse prize-winning activities to allow users to generate spontaneous and coherent behavior. At the same time, the social attribute is strengthened to make the interaction between users more active, thus increasing the user's viscosity.

There is a positive correlation between the purpose of the experience itself and user loyalty. When the user regards the browsing of the short video software as a spontaneous motivation, in order to continue to obtain the sense of pleasure, they will not easily use other software so as to be a loyal user. Therefore, in order to retain more users, the short video social platform needs to improve users' sense of immersion in many ways. According to the data analysis, the primary factor that attracts users is "rich video content". Short video software in the future, therefore, the optimization of the process will continue to do the production of content. Short video software needs to publish more video capture templates, and collect award-winning videos from all users, so that users have the possibility of realizing traffic, forming a "pull force" and deepening user loyalty. However, it is necessary to avoid the risk of continuous user retention caused by the convergence of video content. On the other hand, in order to obtain more users, short video software should be developed from

vertical operation to diversified development, so as to realize sinking operation, ensure long tail videos can get attention and improve user's personal engagement and experience.

There is a positive correlation between concentration and user loyalty. When users use the software, they will immerse themself in it if they can concentrate fully on the process of use, so they will continue to use the software. Therefore, the design of short video software should be able to capture the needs of the users and reduce the unrelated information so that the users can concentrate their attention. Each short video software has its own product positioning and characteristics. They should focus on their core products, improve the quality of video, increase filters and optimize the quality of content. In addition, it is necessary to set "time limit" and "risk reminder" to ensure that users have a reasonable intention to continue using.

Prospects

Drawing on the experience of outstanding scholars, this study compiles an immersion experience questionnaire. It adopts empirical research to achieve the expected theoretical assumption and practical significance. This paper provides a reference value for the further optimization design of mobile short video social platform. However, there are still some deficiencies, such as insufficient sample size, failure to take into account the existence of mediator variables, and lack of maturity in empirical research and analysis procedures. It is hoped that more supplements and improvements will be made in future research.

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