

Research on value-added services of Chinese online music platforms

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[Abstract]

The purpose of this study is to define the concept of value-added services on online music platforms, put forward a model of users' willingness to use value-added services on online music platforms, and explore the way its influencing factors affect users' willingness to use. This study is based on the stimulus-response model, combined with the characteristics of online music service platforms, using information value, social value, and entertainment value as independent variables, using flow experience as a mediating variable, and self-awareness as a moderator variable, and then researches on the use of users. influence of will. Empirical analysis was carried out in this study using SPSS and AMOS statistical analysis tools. It is verified that the value-added services of online music platforms have a positive and positive impact on consumers' flow experience and usage intention. This research can fill in the theoretical defects of online music platform service, which has positive and important significance for music platform operators to improve their service capabilities and improve their income.

▶ **Key words:** online music platform, value-added service, flow experience, perceived value

[요 약]

이 연구의 목적은 온라인 음악 플랫폼에서 부가가치서비스의 개념을 정의하고 온라인 음악 플랫폼에서 부가가치서비스를 사용하려는 사용자의 의향 모델을 제시하고 영향요인이 사용자의 의지에 미치는 영향을 탐색하는 것이다. 본 연구는 정보가치, 사회적 가치, 오락가치를 독립변수로, 플로우경험을 매개변수로, 자기인식을 매개변수로 하여 온라인 음악 서비스 플랫폼의 특성과 결합된 자극-반응 모델을 기반으로 하였다. 종속변수는 소비자의 사용의향으로 사용하였다. 본 연구에서는 SPSS와 AMOS 통계분석 도구를 이용하여 실증분석을 수행하였다. 결과는 온라인 음악 플랫폼의 부가가치서비스가 소비자의 플로우경험과 소비자의 사용의향에 긍정적인 영향을 미친다는 것을 보였다. 본 연구는 온라인 음악 플랫폼 서비스의 이론적 결합을 채울 수 있으며, 이는 음악 플랫폼 사업자의 서비스 역량 향상 및 소득 향상에 긍정적이고 중요한 의미를 갖는다.

▶ **주제어:** 온라인 음악 플랫폼, 부가가치서비스, 플로우경험, 지각된 가치

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I. Introduction

According to the report released by IFPI, as of 2019, the revenue of the global music market has reached 20.2 billion US dollars, an increase of 8% over the previous year, which is the fifth consecutive year of growth and the highest increase. From this data, it can be seen that the future development will remain high. Especially after the epidemic, home isolation and home office, the consumption of music is expected to have higher consumption potential. It is expected that in the future, digital music dominated by self-media will become an important pillar of the music industry, inspiring the music industry to rejuvenate [1]. As the carrier of music, online music platforms are responsible for the development of the music industry, such as dissemination and realization, but There is a big difference between music platform marketing and traditional music marketing, among which value-added services are an important feature that distinguishes traditional music industry marketing. With the increasingly fierce competition among major online music platforms, the high operating costs of the platforms, the rise in the price of music copyrights, and the decline in platform users' willingness to use have seriously plagued the development of various platforms. Therefore, how to maintain old users and develop new users has become a problem that various online music platforms continue to solve. In solving this problem, there is no doubt that the value-added services of music platforms play a crucial role in increasing platform profitability.

From the perspective of economics, the music industry chain consists of three parts: the core layer, the association layer, and the expansion layer. The most important link in the entire industry chain is the provision of high-quality music products, the key factor of which is creativity, copyright and other intangible assets [2]. Online music platforms are an important carrier for the conversion of music segments into

economic value in the music industry. Currently, the world's major music platforms include Apple Music, Spotify, Amazon Prime Music, etc., and China's online music platforms include NetEase Cloud Music, Tencent Music, Alibaba Music, etc. In recent years, under the trend of copyright protection in China, the proportion of paying users for music content has reached 82.5% [3]. At the same time, the proportion of content payment is constantly increasing. From the future trend, we can see that China's music industry is developing rapidly, and the gradual increase of paying users shows that the relationship between value-added services in music platforms and users' willingness to use is more important. When users use the platform's technical services, the value-added services will provide users with diversified services such as music community, online live broadcast, and live broadcast dating, so that users can receive an unprecedented new experience, thereby improving users' willingness to use and increasing user stickiness. So based on this, the research related to the value-added services of online music platforms is more necessary.

II. Theoretical research

2.1 Online music platform and value-added services

Online music products are virtual music products and services transactions in the Internet world [4]. Online music dissemination is a kind of music dissemination. The dissemination of online music has opened up a new channel for the development of music, and provided a new way to expand the way of music playing, so that more people can enjoy music [5]. Music platforms can be developed into three stages: free music stage, copyright construction stage, and industry integration stage. Since the music product distribution channel itself has been digitized, it has greatly promoted the development of the online

music operation model. Through the preferences of a wider range of music platforms, including free and paid business models, the development of music platforms has been promoted in disguise [6].

The emergence of value-added services has increased growth opportunities for mobile operators [7]. Likewise, value-added services have provided huge profitability for online music platforms. Value-added service is a new mode of charging for value-added music services based on the original service, which emphasizes the dynamic process from free to paid [8].

2.2 Perceived value

Zeithaml believes that consumers will measure the perceived gains and losses, and judge the comprehensive evaluation of the product or service to decide. Perceived value theory is mainly based on the consumer's pursuit of utility maximization after comparing the perceived stakes, in order to study the consumer's willingness [9]. Woodstein believes that perceived value is a bond formed by customers based on the experience of services and products, and then with merchants [10]. Sirdeshmukh believes that users' perceived value comes from the experience brought to users by products and services. Thereby improving the user experience and improving customer satisfaction [11]. Scholars such as Kim pointed out in their research on the impact of perceived value on mobile Internet consumers' acceptance willingness that consumers will try to obtain the greatest utility or satisfaction. Perceived value is obtained by comparing gain and sacrifice, and perceived value can be used as an indicator of consumer acceptance willingness [12]. According to the characteristics of online music platforms, the dimension of perceived value is divided into three parts: information value, entertainment value and social value.

2.3 Flow experience

The flow experience has a positive impact on people's consumption intentions of virtual gifts in

real-time media [13]. The flow experience is an important research field of positive psychology, which mainly refers to the individual's immersion in a certain state, forgetting time, forgetting Self, a subjective state of highly focused attention on current activities, which is generally accompanied by positive emotional experiences [14].

This study is defined as the flow experience obtained during the use of online music platform value-added services, a psychological perception characterized by focus and a sense of appointment acquired by users in the process of using music platform value-added services. Combined with the characteristics of online music platforms, the flow experience in this study is divided into two dimensions: focus and pleasure.

2.4 Self-awareness

Smith argues that self-awareness is thinking about the self, and that self-awareness is a form of consciousness. Rochat's research argues that human self-awareness is understood here as not only for oneself, but also to perceive and be aware of oneself through the evaluation of others. The tendency of self-awareness [15]. Self-awareness can be divided into two aspects, the first is some dietary secret part of the self, which is defined as the 'private self', and the second is some open and transparent department of the self, this part is closely related to them and is defined as 'public self'. Based on the characteristics of online music platforms, this study divides self-consciousness into private self-consciousness and public self-consciousness.

2.5 Willingness to use

Weijters pointed out consumers' willingness to consume and use a wider range of music platform attributes, including free and paid business models [16]. Luan believes that websites that provide copyrighted songs need to understand how customers evaluate their services and whether customers are willing to buy copyrighted songs, so

as to improve customer service efficiency and increase users' willingness to use [17].

III. Research models and assumptions

Based on the stimulus-body-response model in the theory of perceived value, this study constructs a stimulus-response model for the value-added services of online music platforms. Firstly, the user-perceived value theory is proposed, which divides the value-added service value into three parts: information value, entertainment value and social value. In addition, the new flow experience is used as a mediating variable, and self-awareness is introduced as a moderating variable. The research model of this study is constructed by taking consumers' willingness to use as a dependent variable. As shown in Figure 1:

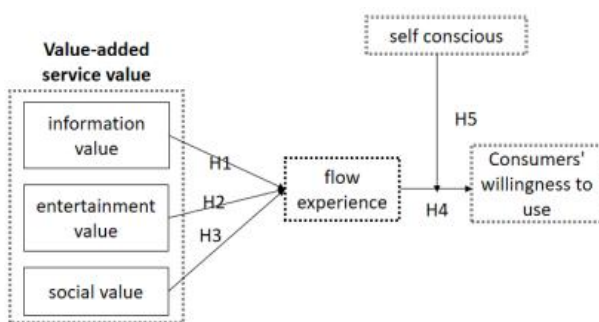


Fig. 1. Research Mode

H1: Information value in perceived value is statistically significant for flow experience.

H2: Recreational value in perceived value is statistically significant for flow experience.

H3: Social value in perceived value is statistically significant for flow experience.

H4: The flow experience has a statistically significant effect on consumers' willingness to use.

H5: Self-awareness has a moderating effect on flow experience and consumers' willingness to use.

H6: Flow experience has a mediating effect on value-added service value and consumers' willingness to use.

IV. Empirical Analysis

In order to carry out scientific research, the researchers implemented the form of questionnaire survey. The measurement of the questionnaire was in the form of Likert 5-level scale. Different options were selected according to the degree of agreement with the question items, and the subsequent data analysis was processed according to different scores. Since the questionnaire survey needs to be revised, we first conducted a preparatory survey, and improved the unclear and incomplete questions in the questionnaire. From May 1st to May 31st, 2022, an online survey was conducted through the Questionnaire Star survey platform, and a total of 520 questionnaires were recovered. In general, the sample size has met the statistical research standards and can provide data support for this study.

4.1 Descriptive Statistical Analysis

Through descriptive statistical analysis of the sample, we can draw the following conclusions:

In terms of gender, men accounted for 53%, women accounted for 48%, and the proportion of men and women was equal. From the perspective of age group classification, people under the age of 30 account for 87.3%. It can be seen that most of the people who provide value-added services on music platforms belong to young people. In terms of education level, the highest proportion of undergraduates and junior colleges is 49%, the proportion of high school and below is 27%, and the proportion of master's degree and above is 24%. From the perspective of personal income, the proportion between RMB 2000-5000 is the largest, reaching 38%, followed by the proportion of 5000-10000 at 36%. From the perspective of favorite platform value-added services, platform live broadcast accounts for the largest proportion, reaching 27%, followed by platform community, accounting for 22%. From the perspective of platform usage time, 62% of them have used the platform for more than one year, the highest

proportion, followed by 20% between 6 months and one year.

4.2 trust level analysis

In this paper, Cronbach's Alpha coefficient commonly used in the research field is used to judge the reliability. When the coefficient of α is between 0.60 and 0.65, the reliability is not good; when the coefficient of α is between 0.65 and 0.70, it is the minimum acceptable value; when the coefficient of α is between 0.65 and 0.70 Between 0.70 and 0.80, it means that the reliability is good; when the alpha coefficient value is between 0.80 and 0.90, it means that the reliability is very good. For the data results of this study, the reliability of each variable (information value, social value, entertainment value, flow experience, self-awareness, and willingness to use) are 0.911, 0.865, 0.897, 0.874, 0.886, and 0.918, respectively. The reliability of each variable is above 0.7, which indicates that the questionnaire has good reliability.

4.3 Confirmatory factor analysis

Validity test (confirmative factor analysis) was carried out in this study using AMOS software, as can be seen from the main indicators, $2/df = 1.951$, $RMSEA = 0.033$, $GFI = 0.954$, $AGIF = 0.934$, $NFI = 0.947$, $CFI = 0.968$, $TLI = 0.984$, $IFI = 0.979$, the model fitting indicators have reached the ideal value, so it shows that the confirmatory factor analysis model fits well.

It can be seen from Table 1 that the factor loading values of the variables proposed in this study are all greater than 0.5, the CR values are all greater than 0.7, and the mean AVE value is above 0.5. Therefore, it can be seen that this questionnaire has good convergent validity. At the same time, according to the test method proposed by Fornell-Larcker, whether the square root of AVE is higher than the correlation coefficient between two variables is used to determine whether there is interval validity. 0.846 and 0.827, both of which are larger than their corresponding

correlation coefficients, indicating that the questionnaire has good discriminant validity.

Table 1. Confirmatory factor analysis

variable	item	factor loadings	S.E.	t	p	CR	AVE
IV	1	0.855				0.916	0.782
	2	0.846	0.038	23.346	***		
	3	0.945	0.036	26.710	***		
SV	1	0.828				0.899	0.699
	2	0.815	0.066	19.718	***		
	3	0.821	0.053	19.434	***		
EV	1	0.784				0.898	0.694
	2	0.833	0.055	19.425	***		
	3	0.780	0.051	17.560	***		
	4	0.915	0.055	21.788	***		
NE	1	0.885				0.896	0.781
	2	0.838	0.066	21.783	***		
	3	0.853	0.053	23.852	***		
SC	1	0.829				0.919	0.726
	2	0.882	0.064	24.655	***		
	3	0.832	0.048	21.753	***		
	4	0.838	0.048	22.752	***		
WU	1	0.840				0.917	0.674
	2	0.864	0.062	20.778	***		
	3	0.787	0.044	19.662	***		

4.4 related analysis

The tests for correlation in general research are all tested with the Pearson correlation coefficient. Generally speaking, when the correlation coefficient is greater than 0, and the significance level is $p < 0.05$, it can indicate that there is a correlation between variables. This study also adopted this customary method. According to Table-2, it can be seen that the correlation coefficients between each variable are positively correlated and significantly.

Table 2. related analysis

	IV	SV	EV	NE	SC	WU
IV	1					
SV	.294**	1				
EV	.283**	.312**	1			
NE	.431**	.411**	.452**	1		
SC	.291**	.321**	.210**	.302**	1	
WU	.361**	.401**	.422**	.510**	.392**	1

4.5 path check

In this paper, the method of AOMS construction equation model analysis is used to test the proposed hypothesis. Through the detection of 2/df, RMSEA, GFI, AGFI, NFI, CFI, TLI, IFI and other indicators, it can be concluded that the fitting degree of the structural model is relatively good. OK, so a path analysis is performed. The coefficient values of each path can be seen in Table-3, so the assumptions can be verified: (1) The three assumptions H1~H3 that information value, social value, and entertainment value have a positive impact on the flow experience are all established. (2) The hypothesis H4 that flow experience has a positive impact on consumers' willingness to use is also valid.

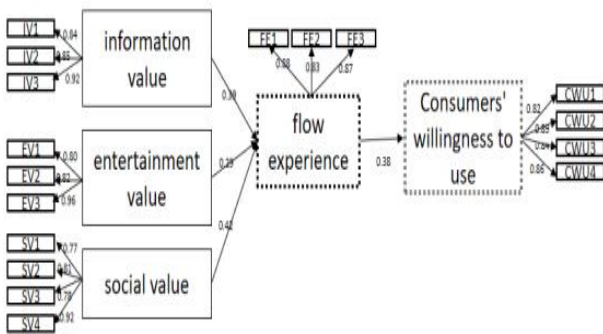


Fig. 2. Construction Equation Model Check

4.6 Moderating effect analysis

Hierarchical regression analysis was used in this study to test the moderating effect of self-awareness. As can be seen from Table 4, when model 3 was compared with model 2, the R2 of the model was significantly improved after the interaction term. There is a significant positive effect on use intention, so it can be explained that self-awareness plays a moderating role between flow experience and consumer use intention, assuming H5 is established.

Table 3. Path Check

path		standardized coefficient	S.E.	t-value	p
information value	→ New Streaming Experience	0.287	0.052	6.662	***
Social value	→ New Streaming Experience	0.298	0.044	5.685	***
entertainment value	→ New Streaming Experience	0.288	0.047	6.851	***
New Streaming Experience	→ Willingness to use	0.297	0.052	5.295	***

Table 4. Moderating effect analysis

variable	Model1		Model2		Model3	
	β	t	β	t	β	t
information value	0.131	3226**	0.116	2794**	0.118	2849**
Social value	0.211	5137**	0.175	4892**	0.203	5124**
entertainment value	0.253	7220**	0.278	7034**	0.282	7212**
New Streaming Experience	0.233	6123**	0.243	5510**	0.245	5558**
self conscious			0.146	3820**	0.142	3457**
New Streaming Experience*self conscious					0.110	2893**
R2	0.407		0.413		0.432	
adjR2	0.383		0.408		0.411	
ΔR2	0.399		0.016**		0.009**	
F	84.153**		72.579**		62.677**	

4.7 Mediation test

In this study, the bias-corrected nonparametric percentile bootstrap method was used to determine the mediation effect, with 5000 bootstrap times. As can be seen from Table 5, in the path results of (information value, social value, entertainment value) → flow experience → use intention, the confidence intervals are (0.044, 0.141) (0.047, 0.136) (0.043, 0.129), respectively. Does not contain 0, so it can be shown that the flow experience is significant in the three hypotheses of the mediation effect, the mediation effect is obvious, and the hypothesis H6 is established.

Table 5 Mediation test

path	standardized coefficient	p	95%CI	
			Lower	Upper
IV→NSE→WU	0.079	0.000	0.044	0.141
SV→NSE→WU	0.089	0.000	0.047	0.136
EV→NSE→WU	0.081	0.000	0.043	0.129

V. Conclusions

5.1 Research conclusions

This paper aims at the value-added services of online music platforms. Based on the stimulus-response model, after researching the theory of perceived value, the theory of flow experience, and the willingness of consumers to use it, hypotheses and models are put forward. A questionnaire method was used to collect the required data, and an empirical analysis was carried out to verify the proposed hypotheses respectively. Through the research on the influence of online music service platform on users' new flow experience, it can be found that information value, entertainment value, and social value all have a positive impact on the flow experience. And it can be seen that the influence of three variables on the user's new stream experience is from large to small: entertainment value, social value and information value. It shows that entertainment value is of great significance in the value-added services of online music platforms. The researchers also made an in-depth analysis of the moderating effect of self-consciousness, and found that self-consciousness and public-ego consciousness of self-consciousness have a moderating role in the new flow experience and willingness to use. Moreover, the adjustment effect of private self-consciousness is greater than that of public self-consciousness, so when using music platforms, users here are more willing to share the consultation content issued by the platform in exchange for better services. On the other hand, users who are more self-conscious are more

concerned about the opinions and evaluations of other users. From the results of the mediation effect of the flow experience, we can see that when users use the music platform, the stronger the perception of value, the stronger the user's sense of appointment, which will affect the user's willingness to use. That is to say, these perceived values will affect consumers' willingness to use through the flow experience.

5.2 Limited to Outlook

This study has certain limitations due to the single research method and insufficient sample data range. In view of this, in future research, we will start with more and more in-depth analysis methods to more comprehensively analyze the content existing in the data. In addition, more extensive research can be carried out from different countries and regions to increase the diversity of the survey population and obtain more rigorous and convincing research conclusions.

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