Empirical Analysis on Market Prospect of Video Platform's PVOD

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ABSTRACT

Premature Video-on-Demand (PVOD) is a value-added service provided by video platform, it allows to unlock TV drama in advance by payment on the basis of membership. In recent years, video platform has gradually adopted PVOD pattern as an important profit-earning channel as the paid online video pattern popularizes. However, there is plenty of controversy about the pattern. In order to further comprehend its prospect and development direction, we carried out the empirical analysis on the basis of the KANO model and the theory of consumer behavior, as well as 612 questionnaires collected in Kaifeng City. The results showed that the copyright consciousness of consumers was positively correlated to their purchase intention. The potential consumers were more willing to pay for those works presented in the form of film. High-income female potential consumers were more willing to consume. In the result of KANO pattern, the function of free of advertisement was the one-dimensional quality. 4K was the attractive quality. Based on the results aforesaid, we made suggestions from multiple perspectives such as personalized service, copyright protection, focus on content building etc.

Keywords: KANO model, theory of consumer's behavior, binary Logistic regression model, empirical analysis

1. INTRODUCTION

By June 2019, there were 759 million online video users in China, accounting for 88.8% of the whole netizen. [1]. However, in recent years, online video platform, even though owns huge flow, is not optimistic for the profitability, could not realize its cash ability, and is still facing loss, a difficult problem in the industry. Currently, online video platform earns profit from advertising, copyright distribution and user's payment; it also exploits the profit channels by the value-added service etc. According to the current situation, online video platform is in the condition of "burning money" [2]. From the perspective of scholars, the premature video-on-demand (PVOD), as a new strategy of relieving operating cost stress and making up huge loss, is useful exploitation of the new marketing pattern of the video platform in China[3]. However, according to other perspectives, the practice of online video platform, namely boosting the secondary charging program for a paid membership, creates new unfairness[4] . What can be affirmed is that consumers' attitude and attention focus to PVOD is decisive to the impact on the development of PVOD. In this work, an empirical analysis was conducted on the pattern from the perspective of consumers.

2. MODEL SELECTION AND DATA SOURCE

2.1. Theoretical Analysis

In this work, we analyzed the attitude and attention focus of consumers to PVOD pattern from the perspective of the theory of consumer behavior and adopted the KANO pattern to analyze the functional demands of consumer on PVOD pattern.

Currently, the study on consumer behavior is becoming very mature in the academic circle, and there are multiple behavior patterns to describe various factors affecting the decision of consumer and the logic conduction chain thereof. Among which, the Howard-Sheth model was blended with multiple consumer purchase behavior patterns, so it is strong logic and can convey the impact of different factors generated in the decision-making process of consumer from multiple dimensions. According to the model, potential consumers, being stimulated by stimulants, are aroused the demands to generate the buying motive, and thereby the emotional response and attitude change; he/she may weigh the personal relative capacity of meeting motive based on suppression factors, then generate the open purchasing behavior and finally turn into the realistic consumers. Therefore, the factors affecting consumer purchase behavior include externality,

stimulation, internality and response [5]. We created the theoretical model as prescribed in Part 1 according to the Howard—Sheth Model.

The Kano model is an effective implement proposed by Noriaki Kano for classifying and ranking user demands on the basis of analyzing the impact of user demand on user satisfaction[6]. It describes the relations between demand realization degree and user satisfaction and divides the user demand into five types, i.e.: must-be quality, one-dimensional quality, attractive quality, indifferent quality and reverse quality. Part 2 of the work is the empirical analysis on the basis of KANO pattern.

2.2. Research Design

The research herein is carried out on the basis of the questionnaire. Part 1 of the questionnaire is the variable input part. Through the early interview and the literature research, we decided to set the form of works as the measurable variable in the product-stimulating factor, the channel as the measurable variable in the sign-stimulating factor, the piracy attitude and motive-watching habit as the measurable variable in the society-stimulating factor. Part 2 of the questionnaire is the external variable part, in which consumer groups are partially the demographic variable information of investigators. The demographic characteristics include age, sex, family structure, nationality, revenue, educational level and geographic position, all of which must be capable of reflecting the related information structure of the population. In the questionnaire, we set four measurable variables such as sex, age, educational level, and income level. Part 3 of the questionnaire is the demand analysis part, it is the question form required by the KANO pattern, namely we set the questions in the two opposite directions, namely the positive direction and the opposite direction for every demand point, and set the option as five levels such as "satisfied", "should be like this", "not to matter", "reluctantly accept" and "unsatisfied", and finally we processed the questionnaire results by KANO demand classification table.

The respondents were the citizens of Kaifeng City. The research herein was carried out in Kaifeng City in May 2020 and 700 questionnaires were issued; after getting rid of ineffective questionnaires, there were 612 questionnaires and the effectiveness rate was 87.43%. In the reliability test analysis result, namely in the Cronbach α value analysis result, the coefficient of internal consistency of dimensionality was almost 0.821; in the validity test, namely in the Bartlett spherical test, the KMO value was almost 0.779, signifying the factor analysis was as appropriate as possible.

3. REGRESSION MODEL RESULT AND ANALYSIS

3.1. Quantitative Processing of Data

In order to quantify the impact of various variables on consumer's purchase intentions, we synthesized investigation data, empowered different indicators, and adopted the one whether consumer is willing to or has intention to buy potential demand as the dependent variable to construct the Logistic regression to explore the impact of different factors on the potential demand of PVOD service. In order to explore more clearly and intuitionally the degree of impact of every item contained by two groups of variables aforesaid on the potential demand(see Table 1), we constructed two binary Logistic regression models respectively.

There are two resultant empowerments for consumer's purchase intentions: having willingness to buy (Y=1) or having no willingness to buy (Y=0). We adopted the binary Logistic regression analysis function of SPSS17.0 to conduct regression. Since there are less number of independent variables in the regression model, the direct access method is adopted to incorporate total independent variables in the regression model to obtain the results. Logistic regression equation model:

$$\ln\left(\frac{P}{1-P}\right) = \sum_{i=1}^{k} \beta_i X_i + \varepsilon \qquad (1)$$

Table 1 Coding of regression model variables

Input variable	Code	External variable	Code
Channel factors		Characteristic factors	
Advertisement by stars	X1	Gender	Y1
Recommendation of friend	X2	Age	Y2
Initiative search	X3	Monthly income	Y3
Rating on Douban.com	X4	Educational level	Y4
Other channels	X5		
Social factors		Market factors	
Understanding PVOD service or not	X6	Tencent video	Y5
Attitude to piracy	X7	Youku	Y6
Time of watching video everyday	X8	IQIYI	Y7
Form of works		Mango TV	Y8
Variety show	X9	Bilibili	Y9
TV series	X10	Other platforms	Y10
Film	X11		
Animated film	X12		
Other forms	X13		

$$P = P(Y)_, \quad \begin{cases} Y=1, Willing \\ Y=0, Non-voluntary \end{cases} \quad (2)$$

Where: P is the probability of potential consumer for buying PVOD service; k is the number of Explained variable; β_i is the regression coefficient of influence factor; k is the number of question; X_i is the factor affecting the purchase intentions of potential consumer; ε is the constant.

3.2. Model Test

According to the results (see Table 2) of the Hosme-Lemeshow test to be conducted on the quantified data by SPSS software, the significance of two models was all more than 0.05, so the data fitting can be achieved better.

3.3. Analysis of Input Variable Results

Among the input variables(see Table 3), namely 13 independent variables, the test value of Douban.com (x4), attitude to piracy (x7) and film (x11) were 0.05, all of them were the variables affecting the potential demands; the rest variables had no significant impact on the purchase intentions of PVOD service. The coefficient corresponded by the independent variables X4, X7 and X11 were positive, signifying the informants were highly willing to pay the film and television works to be known by the rating on Douban.com, and were willing to pay the works presented in the form of film. Consumers with strong copyright awareness are more willing to pay. Video platform can advertise the paid film and television source by Douban.com and other channels, intensify the copyright protection and introduce more film resources to attract more potential consumers.

3.4. Analysis of External Variable Results

As for the external variables(see Table 4), the test value of gender (Y1), monthly income (Y3) and Youku video platform (Y6) among 10 independent variables were 0.05, they were the variables affecting the potential demand; the rest variables had no significant impact on the purchase intentions of PVOD service. The coefficient corresponded by the independent variable Y1, Y3 and Y6 were positive, indicating consumers of Youku video platform had higher purchase intention for PVOD service than other platforms, consumers with high monthly income and female consumers had higher purchase intention, such result can direct the relevant enterprises to lock potential consumer groups..

Table 2 Hosmer-Lemeshow test results

Variable equation	Chi-square	df	Sig.
Input variable	11.828	8	.159
External variable	8.466	8	.389

Table 3 Estimation results of input variable

Variable	B	S.E,	Wals	df	Sig.	Exp(B)
X1	.146	.099	2.176	1	.140	1.157
X2	-.123	.105	1.383	1	.240	.884
X3	.023	.097	.057	1	.811	1.023
X4	.256	.089	8.244	1	.004	1.292
X5	-.048	.091	.273	1	.602	.953
X6	-.137	.074	3.387	1	.066	.872
X7	.301	.088	11.63	1	.001	1.351
X8	.080	.077	1.079	1	.299	1.084
X9	.006	.077	.007	1	.934	1.006
X10	.140	.078	3.183	1	.074	1.150
X11	.204	.077	7.089	1	.008	1.227
X12	.078	.077	1.029	1	.310	1.081
X13	.038	.087	.193	1	.660	1.039
constant	-3.140	.664	22.34	1	.000	.043

Table 4 Estimation results of input variable

Variable	B	S.E,	Wals	df	Sig.	Exp(B)
Y1	.391	.187	4.360	1	.037	1.479
Y2	.288	.269	1.144	1	.285	1.334
Y3	.339	.110	9.459	1	.002	1.403
Y4	-.130	.184	.495	1	.482	.878
Y5	.077	.069	1.237	1	.266	1.080
Y6	.155	.075	4.303	1	.038	1.168
Y7	.081	.071	1.295	1	.255	1.084
Y8	.121	.075	2.626	1	.105	1.129
Y9	.107	.058	3.358	1	.067	1.112
Y10	.038	.064	.344	1	.558	1.038
constant	-2.633	.712	13.687	1	.000	.072

4. KANO MODEL RESULT ANALYSIS

According to the questionnaire, the Better-Worse index method proposed by Berger[7] was adopted to calculate the coefficient of two indicators such as degree of satisfaction and degree of dissatisfaction, used for measuring the degree of the impact of the quality element of PVOD on customer satisfaction or dissatisfaction. The computational formula is detailed as follows:

$$Better = \frac{(A+O)}{(A+O+M+I)}, \qquad (3)$$

$$Worse = \frac{-(M+O)}{(A+O+M+I)} \qquad (4)$$

Upon the user satisfaction coefficient, we can understand the user satisfaction after a certain element is added and the user dissatisfaction after a certain element is eliminated(see Table 5), both of them can be used as the reference for service improvement. We quantified them according to the KANO model application method and then analyzed the diagram therefrom to obtain the category of every demand factor(see Figure 1).

Table 5 Coding of KANO model

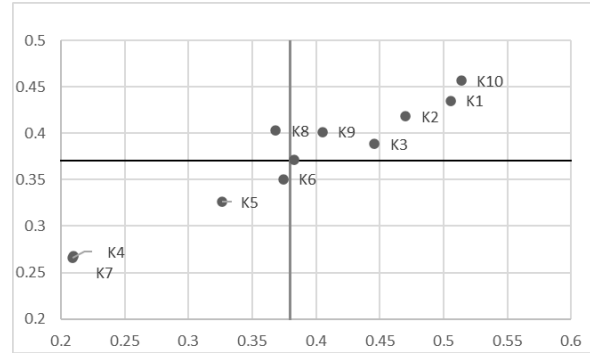| Indicator	Code	BETTER	WORSE
High-quality contents	K1	0.43	-0.51
Better movie-watching experience	K2	0.42	-0.47
After-sales service	K3	0.39	-0.45
Supporting VR	K4	0.27	-0.21
Low price	K5	0.33	-0.33
Refund service	K6	0.35	-0.37
Supporting 3D	K7	0.27	-0.21
Supporting 4K	K8	0.40	-0.37
High-Video FPS	K9	0.40	-0.41
Free of advertising	K10	0.46	-0.51

Figure 1 Four quadrant diagram of Better-Worse index

The characteristics of the first quadrant are the high Better index and high Worse index, indicating these elements must be paid high attention whichever it is the one improving user satisfaction or the one preventing user dissatisfaction. There are five quality elements of PVOD service in the first quadrant, see K1, K2, K3, K9, K10 in the table; all of these elements belong to the high value-added quality elements, enterprises must input more resources to meet the demands therein.

The characteristics of the second quadrant are the low Better index and high Worse index, indicating these elements can effectively prevent user dissatisfaction even though they can't improve customer satisfaction to a large extent. K8 is in the fourth quadrant, it is an important indicator that can help PVOD service provider to establish brand. Enterprises must meet consumers as much as possible and increase the user's stickiness of potential consumers.

The characteristics of the third quadrant are the low Better index and low Worse index, indicating all of these elements can't improve user satisfaction. Four quality elements K4, K5, K6, K7 are in the third quadrant.

5. COUNTERMEASURES AND SUGGESTIONS

1. Exploring the differential user demands and increasing the interaction with users.

Currently, marketing is being transitioned from "the one with the commodity as the tie" into "the one with the people as the tie", in which commodity seller turns into business user from the one of selling the commodity. Therefore video platform needs to re-position the relationship between itself and the user and turn from the content service provider into the "friend" of the user so as to enhance the interactions between user and platform and utilize user value rationally and sufficiently.

2. Focusing on building quality contents and improving industry chain

Video platform can increase the percentage of self-produced drama and self-produced variety shows and reduce the percentage of copyrighted drama and copyrighted variety shows, and then reduce the costs

thereof. Simultaneously, video platform can keep on expanding the marketing border by utilizing the diversified IP-authorized business pattern. Moreover, video platform must impose higher requirements on the self-produced drama, refuse the production in a rough way, and create good ecology with excellent content and word-of-mouth incubation content.

3. Reducing product price and finding the balance point of profit and user experience

Presently, video platform is facing the high PVOD service charge, excessive consumer-members and contracted visual field of marketing spread. When the new profit model is still being attempted, any practice anxious for success may result in excessive overdraft of member and fan values, and even neglect the psychology of consumers. Therefore video platforms should reduce the PVOD price and realize its promotional pattern by small profits and quick returns.

4. Enhancing copyright protection measures and combating piracy and infringement act

Inundated pirated film resource is a huge impact on the core value of paid VOD, it further prevents the right of paid members of video websites from exercise.

5. Paying attention to the construction of cultural atmosphere, building reputation and enhancing user viscosity

Video platform should consider the practical significance whilst developing the entertainment performance, if so, mainstream cultures can be attracted and enhanced, and the cultural atmosphere can be improved. Resultantly, video platform can better realize the benign interaction with the public, expand the audiences, and then show a more positive image. Certainly, the one continuing to provide high-quality service and excellent reputation can attract users and make enterprises get long-range benefits.

6. Learning and borrowing excellent platform and widening publicity channel

Chinese video platform can borrow the experience of American streaming media typhoon Netflix in the differentiation charge, work out the normative rules for the PVOD service, richen the paid service of the user, and then push business revenue, top-quality content, service and user experience to form forward and positive circulation. Simultaneously, the rating on Douban.com in community website has a larger influence on the purchase willingness of consumer, video website must enhance the promotion and publicity of film and TV drama by relying on Douban.com or via cooperation.

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