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Study on the Influencing Factors of Consumer's Demand on Cyber Games Commodities

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Abstract: Cyber games commodities are directly driven by consumers. Its resource, factors and operations carry on dynamic combination according to the changing demand. This study takes one of cyber games for case, uses questionnaire survey to typical consumers groups and then concludes the main factors of consumers' demand on cyber games product by techniques of factor analysis and structure equation model. Based on these results, this study applies it on cyber games commodities and constitutes marketing strategies of creative commodities.

Key words: Cyber games commodities, consumers' demand, factor analysis, structural equation model

INTRODUCTION

Cyber games commodity is determined by the consumer, the demand for cyber games goods guide producers to produce the corresponding products and added value. The change from product-oriented to consumer-oriented reflect development mode of "consumer is king" on cyber games commodity. Its significance lies in stimulating consumer buying potential by the product's creation and forms new consumer markets and improves the quality of society. Cyber games industry has been developing rapidly into the 2l century. The market of cyber games in China reached 32.74 billion R and B in 2010 and has become an important force driving of regional economy. This article selects the Legend of Sword and Fairy series of cyber games as a typical example and surveys and interviews its target consumer group and uses software AMOS17.0 and SPSS17.0 to analyze statistically on survey and gets the influencing factors of consumer demand on cyber games products and thus extends to the whole cyber games.

LITERATURE REVIEW

The growth of consumer demand for cyber games goods has become an important engine in creative economy. Edna (2008) thought that there were several factors behind to pushing demand, including the improving of countries income and the decreasing of real price. The deeper reason is that changing consumption patterns promote the creative and cultural economy. This is the new results of communications technologies to promote the transformation. Wu *et al*. (2010) based on consumer cognitive responses, explored the process and methods of cognitive responses of consumers by analyzing the FBS model to describe the design path of cyber games product. Liu (2010) thought cyber games industry exerted their influence through upgrading in product service, attracting in advertising creative and inducting consumer concepts in the sectors of production, exchange and consumption and changed in the content and dimension of consumer elasticity demand and then changed the corporate product supply.

Every cyber games exists some uncertainties for the consumer demand, such as the fashion trends, individual hobbies, speculation spread, timing, social environment, cultural differences, geographical features and so on, thus It will greatly increase the difficulty of cyber games marketing. The marketing of cyber games product is a psychological experience of the process. The sale of creative product differs from sales of general products. It must be consumers in the purchase decision process and product transfer process of psychological experience as a marketing core. In the cyber games product specific marketing strategy, Yang and Wu (2005) pointed out that the majority of gaming commodity were experiencing products, so that consumers didn't confirm the value of cyber games good they purchased before they were not actually enjoyed or unable to appreciate the product, so consumers took others purchasing as decision. The marketing of gaming industry were the downstream of value chain in creative industries, including the terminal part of the entire industry which was realizing the value.

DATA COLLECTION

Measurement items identified: This article selects the conclusions of Nicholas' (2002) as a basis for interviews,

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cites the possible impacting factors on consumer purchasing cyber games goods, including the using of multimedia to do advertising, demo events, with a discount of merchandise, difficulty of the game and the matching of players capabilities, sound design, creative game, the reasonable of revised price, PC easy to understand and other relevant test items. In order to explore the impacting factors of consumer demand, the study conducted in-depth interviews based on consumer demand theory in the age span of 20-30 year old for the 15 respondents and used the methods of direct inquiry law and statement filling to to investigate consumer demand. This article confirmed finally 17 items measured by five scales.

Questionnaire design: The empirical study mainly used questionnaire method. The main purpose of questionnaire was to measure the impacting factors of consuming legend of sword and fairy series, namely, "Why did you want to use legend of sword and fairy series?" Or "which need did you meet when you played legend of sword and fairy?". Research project was roughly divided into two parts. The first part was the main part of the questionnaire with the stem of "I was playing legend of sword and fairy series because they are..." and then listed the 17 test items. These topics were designed by multiple depth interviews based on related research at home and abroad. The consumer demand was repeatedly mentioned by respondents. The second part was the basic information of respondents, including gender, age, educational level, the monthly income in average, the time of ongoing support and buy legend of sword and fairy, the time spending on cyber games one day, main cyber games.

Sample collection: The distribution of questionnaire used the forms of internet questionnaire and paper questionnaire. The internet cyber games advertised through the cyber game forums, blog and other virtual communities. The questionnaire was participated by a total of 350 people, in which 334 were valid questionnaires. According to the need of research, we randomly selected 101 questionnaires to do exploratory factor analysis and the remaining 233 were used as the samples of confirmatory factor analysis.

In the 334 copies of questionnaires, gamer ages of 16-23 years old were accounted for 66.8% on participating in this research. Forty eight point two percent were male and 51.8% were female; 21.9% were undergraduate education for college and university; 11.7% were for graduate education; 91.3% players of monthly income were below 3,000 Yuan; 3001-6000 Yuan were accounting for 4.50; 69.8% of players access to cyber games were more than three years; 65.9% of cyber games spent less than three hours one day; 18.0% of players played the game every day for 4-5 h; 13.2% of players played 3 kinds of cyber network games; 33.2% of players played five models of cyber games; 88.9% of players played role-playing games; 4.2% of players played the strategy game in cyber games.

DATA AND ANALYSIS

Correlation analysis test: First, we examined whether collected variables exists a linear relationship or not and used the factor analysis to extract factors and used Bartlett (Bartlett's) sphericity test and KMO test methods for analysis and used principal component factor analysis method to extract and select eigenvalues greater than 1. We purified using the standard of extracting a value greater than 0.5 and the factor loading greater than 0.5 after rotating. We purified 17 items to 9 items and extracted three factors. The results showed that observed value of Bartlett sphericity was 361.297. Significance level of Bartlett sphericity test (Sig. = 0.00) was less than 0.050. Meanwhile, KMO value was 0.702. According to the Kaiser given metrics of KMO, it indicated that the scale of the data was encouraging for factor analysis.

Extracting factor: Cumulative degree of Variance on the top three factors was 74.1% (Table 1) as for factor explaining the total variance of original variable. It indicated that decimation factor explained test items in large scale. Eigenvalues were small after the first three factors. It is insignificant of contribution of original variables. Extracting three factors was appropriate. Table 1 showed the loading matrix of factor. It was the core content of factor analysis.

Factor optimization: This article used varimax method to rotate orthogonally factor loading. The results were shown in Table 2. F1, F2, F3, F4 on the first factor had a higher load. F7, F8, F9 in the second two factors had a higher load factor. F5, F6 in the third had a higher load factor.

Table 1: Factor loading matrix

	Component		
Factors	1	2	3
F1 using multimedia to do advertising	0.655	-0.404	-0.254
F2 promotional video provided adequate legend of sword and fairy messages	0.773	-0.235	-0.214
F3 promotional activities in game show	0.735	-0.265	-0.319
F4 demo activities	0.691	-0.180	-0.225
F5 story stimulating my imagination	0.437	-0.214	0.781
F6 storyline set	0.492	-0.189	0.752
F7 peripheral products with discounts	0.431	0.726	-0.042
F8 revised goods at affordable prices	0.482	0.769	0.027
F9 peripheral products at reasonable prices	0.320	0.840	0.049

Confirmatory analysis and evaluation model: Confirmatory factor analysis only involved exogenous variables. The number of variables was 9 in this study. The number of factors was 3. The number of samples was 233. The analysis results showed that AMOS estimated total of 21 parameters, including 9 loads, 3 factors' correlation coefficient, 9 path coefficients and 9 iterations converge. We used the chi-square value, df. and CFI, TLI, NFI, RMSEA, RMR index in the evaluation model. Table 3 and Table 4 showed path coefficient in variable and corresponding test values. Table 4 was the fitting goodness of index. Chi-square value was 55.518. Degrees of freedom was 24, CFI = 0.964, TLI = 0.947, NFI = 0.940, RMSEA = 0.075, RMR = 0.054. Visible model fit quite well.

Nomenclature and definitions of factors: Combined with the conclusion of exploratory factor analysis and confirmatory factor analysis, we can the final result of affecting consumption demand for cyber games. The empirical results showed that the conclusions of exploratory study are basically correct. By two steps of exploratory factor analysis and confirmatory factor analysis, you can extract three influencing factors for consumer demand of cyber games. Every factor is composed by different problem statements. Issue statement within factors is high correlation and different factors are significant differences. This study named three extracted factors based on consumer demand theory and every factor contents, which are, marketing (factor 1), derivative product (factor 2), consumer preferences (factor 3). Marketing is an operation mode of cyber games commodity. Its aim is to achieve creative products industrialization by making viable market analysis and well-designed products with competitive attraction. Marketing is the re-transfer of added value. Derivative products mean that the demands of cyber games have adhesion and form combination demand for commodities under the bonding effect of demand. Consumer preferences have product preferences and time preferences. Product preference is a subjective factor, also known as hobbies on behalf of numerous cultural and historical factors. Consumer preferences are the result of the combined effects from many factors. If consumers have certain preference for cyber game goods, even if prices remain unchanged, their needs will change.

Table 2: Rotated matrix of factor loading

	Component		
Factors	1	2	3
F1 using multimedia to do advertising	0.798	-0.101	0.096
F2 promotional video provided adequate legend of sword and fairy messages	0.817	0.102	0.145
F3 promotional activities in game show	0.841	0.056	0.041
F4 demo activities	0.734	0.117	0.094
F5 story stimulating my imagination	0.108	0.000	0.914
F6 storyline set	0.157	0.044	0.903
F7 peripheral products with discounts	0.108	0.838	-0.012
F8 revised goods at affordable prices	0.104	0.900	0.062
F9 peripheral products at reasonable prices	-0.064	0.898	0.007

Test of reliability and validity: This study applied the internal consistency of Cronbach'sacoefficient to analyze the reliability of questionnaire sample data and tested

Table 3: Estimates of path coefficient and test value

Paths			Errors of estimate	Standard error	Critical value	P
Demo activities	<---	1	1.000			
Promotional activities in game show	<---	1	1.103	0.112	9.855	***
Promotional video provided adequate Legend of sword and fairy messages	<---	1	1.155	0.114	10.165	***
Using multimedia to do advertising	<---	1	1.042	0.110	9.479	***
Peripheral products at reasonable prices	<---	2	1.000			
Revised goods at affordable prices	<---	2	0.975	0.074	13.135	***
Peripheral products with discounts	<---	2	0.941	0.079	11.960	***
Story stimulating my imagination	<---	3	1.000			
Storyline set	<---	3	0.963	0.180	5.351	***

Table 4: Results of fit index

Statistics for model fit	Measurement model	Criteria	Scholars
CMIN	55.518	>0	Hair and Anderson (1998)
DF	24	>0	
CMIN/DF	2.313	less than 3 is better	
P	0.00	≤0.050	
CFI	0.964	CFI must be greater than 0.9	
TLI	0.947	≥0.9	
NFI	0.940	NFI must be greater than 0.9	
RMSEA	0.075	less than 0.05 is considered a good fit, from 0.05 to 0.080 is an acceptable fit	Browne and Cudeck (1993)
RMR	0.054	less than 0.050 is a good fit, from 0.050 to 0.080 is an acceptable fit	

Table 5: Reliability of scale

Name of variable	Factor name	No. of items	Cronbach's a coefficient
Marketing	Using multimedia to do advertising	4	0.818
	Promotional video provided adequate legend of sword and fairy messages		
	promotional activities in Game Show		
	Demo activities		
Derivative products	Peripheral products with discounts	3	0.854
	Revised goods at affordable prices		
	Peripheral products at reasonable prices		
Consumer preferences	Storyline set	2	0.80
	Story stimulating my imagination		

internal consistency of every factor. The reliability of derivative products was higher than others from the measurement results. Consistency coefficient of three scales had reached more than 0.8, indicating a good internal structure.

CONCLUSIONS

The following conclusions can be drawn in this study according to the foregoing discussion and analysis. The major impacting factors on consumer demand for cyber games goods include marketing, derivative products and consumer preferences. Marketing→consumer preferences, we can see marketing for cyber games products have a direct positive impact on consumer preferences (R = 0.35).

Publicity and promotion channels are the only way to create value. From four factors of marketing can be seen the promotion of cyber games product is highly dependent on media publicity. The value of cyber games goods needs the help and promotion of media. Marketers use marketing activities to promote the idea into market including websites, media, large posters and e-mail. The operation of media can help people discover the value of cyber games goods.

The factor of consumer preference can be seen that people's consumer preferences in spiritual and cultural products evolve into symbolic objects. Symbolic objects mean inherent consuming. Inherent consuming attaches culture, art, entertainment and other cultural value to the using value of product. Therefore, provision of a new "concept" can be seen as the primary means of exploring commodity markets.

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