



Analysis of College students' consumption behavior based on Virtual variable regression

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Abstract: Reviewing consumer purchasing behavior of the reference from the aspects of psychology, in this article, in order to find out the factors that affect consumer's buying behavior, according to the actual situation, with 64 college students as subjects, the questionnaire on the questionnaire star. Using virtual variable regression model to analyze the data, it is concluded that the factors influencing college students' purchasing behavior have consumer income, preference, advertising and other factors, on this basis, give it an appropriate suggestion.

Key words: Regression analysis of virtual variables, College students' consumption behavior, Influencing factor, suggestion.

The consumer is an important part of the market, and the consumer's purchase behavior is all the behavior activities of the consumer to buy the goods in order to meet some demand, and it is the behavior performance of the consumer's psychology. Consumer behavior was introduced from the West in the mid-1980s, After decades of development, Practice has proved that in the process of developing the socialist market economy in our country, with the improvement of people's living water and the diversification of consumer products, people's consumption level is also constantly improving, It is of great importance to study the psychology and behavior of consumers: 1. It can strengthen and improve the level of economic decision-making, promote the coordinated development of the national economy and play an important role in stimulating the growth of the national economy; 2. It is helpful for merchants to formulate more suitable marketing strategy, according to the change of consumer's demand, to make sales strategy, attract more consumers and enhance market competition ability; 3. It also helps consumers to improve their own quality, scientific personal consumption strategy, improve consumer behavior, achieve civilized consumption.

Consumers' purchasing behavior is affected by many factors, from the perspective of psychology, the difference of internal factors is reflected in the process of consumers' purchase behavior, consumers in limited disposable income, Spending according to one's own personal preferences, people who like food are more likely to buy food, people who care about appearance are more likely to spend money on clothing, and people who pursue quality of life spend more on household goods. At the same time, among the external factors, herd buying behavior is also an important characteristic of consumer buying behavior, affected by the consumer behavior of the people around them, personal consumption will find common ground, comparison and other psychology, thus promoting consumption. With the growth of income, under the influence of diversified sales environment, mass consumption is also increasing gradually.

Therefore, an appropriate multivariate regression model is established to study the factors that affect consumers' purchasing behavior.

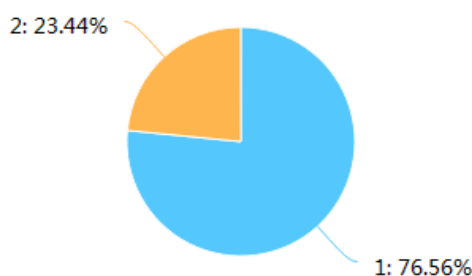
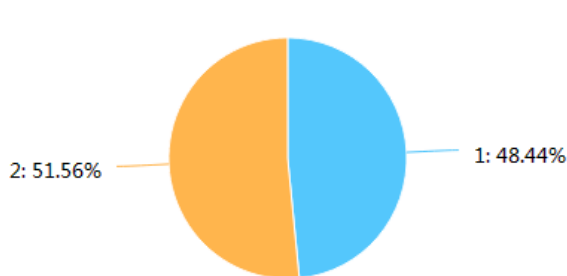
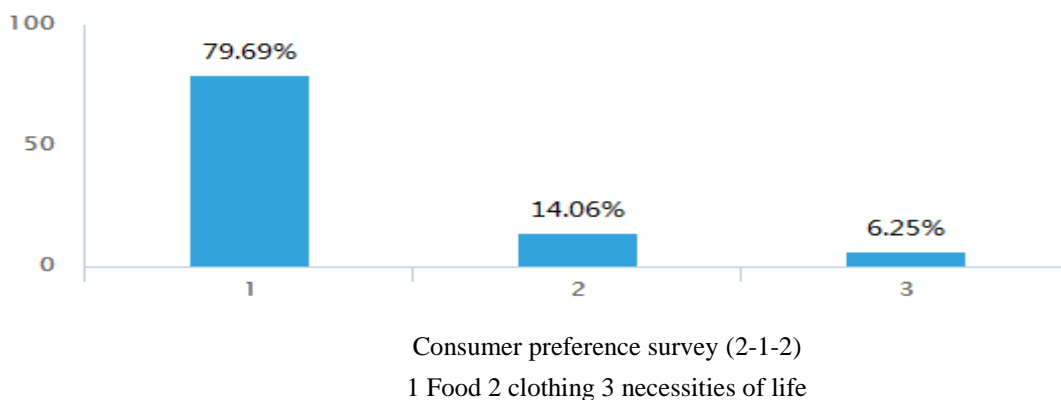
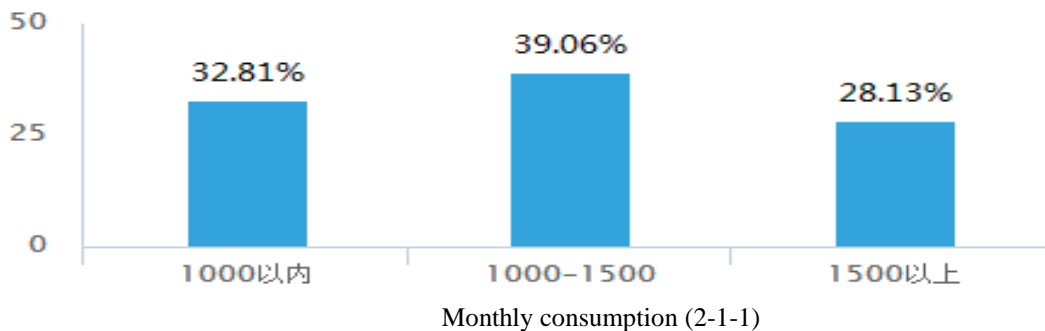


1. Object and method of investigation

In order to cooperate with the actual research, this paper uses the questionnaire method to distribute the electronic questionnaire in the questionnaire star, lets the online 64 university students fill in on the net, uses the statistical software to roughly analyze the influence consumer behavior factor situation. The virtual variable regression model is established, and the data analysis is further studied by EViews.

2. Analysis of survey data

2.1 The results of the survey are as follows:



The impact of advertising (2-1-3)

The situation affected by the people around you (2-1-4)

(blue: affected, yellow: affected)



2.2 The results of the cross-analysis are as follows:

Independent variable: monthly consumption

Dependent variable: consumer preferences

X/Y	1	2	3	小计
1000 以内	16 (76.19%)	5 (23.81%)	0 (0.00%)	21
1000-1500	24 (96.00%)	1 (4.00%)	0 (0.00%)	25
1500 以上	11 (61.11%)	3 (16.67%)	4 (22.22%)	18

(2-2-1)

1 Food 2 clothing 3 necessities of life

Independent variable: monthly consumption

Dependent variable: whether or not it is affected by advertising

X/Y	1	2	小计
1000 以内	10 (47.62%)	11 (52.38%)	21
1000-1500	12 (48.00%)	13 (52.00%)	25
1500 以上	9 (50.00%)	9 (50.00%)	18

(2-2-2)

1 affected 2 not affected

Independent variable: monthly consumption

Dependent variables: whether or not it is influenced by the people

X/Y	1	2	小计
1000 以内	16 (76.19%)	5 (23.81%)	21
1000-1500	18 (72.00%)	7 (28.00%)	25
1500 以上	15 (83.33%)	3 (16.67%)	18

(2-2-3)

1 affected 2 not affected

According to the above data and empirical analysis, the monthly income of college students is an important factor influencing consumption decision, the lower the income, the more food you consume, the less your daily necessities. This is also in line with the pattern of changes in the structure of consumption by the German statistician Engel: The smaller the household income, the larger the share of the total household spending on food, and as the household income increases, the share of the total household spending on the purchase of services falls. The same is true for consumer individuals. From figure 2-2-3, we can see that consumers are easily influenced by people around them, and this kind of comparison consumption is mainly due to the mutual influence of collective life. Figure 2-2-2 shows that the probability affected by advertising factors is basically the same as that of unaffected factors, indicating that advertising has a greater impact on consumer behavior.



3. Model setting and solution

3.1 Modeling

If there is consumption, there is expenditure, so this paper takes the amount of consumer consumption as the explanatory variable, and the set explanatory variable is the income of the consumer (because the subjects of this paper are college students, for the sake of investigation and research, we can assume that income is living expenses), D_{2i} is the consumer's personal preference, 0 means unaffected, 1 indicating that it is affected, D_{3i} is whether consumers are influenced by people around them, 0 means unaffected, 1 indicating that it is affected, D_{4i} is whether the consumer is affected by advertising, 0 means unaffected, 1 indicating that it is affected. Thus, the following models can be established:

$$Y = \beta_0 + \beta_1 X + \beta_2 D_{2i} + \beta_3 D_{3i} + \beta_4 D_{4i} + \mu$$

3.2 Regression analysis of the model using EViews

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	296.3398	88.20820	3.359549	0.0014
X	0.808330	0.037807	21.38032	0.0000
D2	-100.8334	45.11380	-2.235090	0.0292
D3	-91.64277	44.02271	-2.081716	0.0417
D4	-80.20780	26.73547	-3.000051	0.0039
R-squared	0.974413	Mean dependent var		1187.500
Adjusted R-squared	0.972678	S.D. dependent var		498.2318
S.E. of regression	82.35459	Akaike info criterion		11.73485
Sum squared resid	400154.4	Schwarz criterion		11.90351
Log likelihood	-370.5152	Hannan-Quinn criter.		11.80129
F-statistic	561.7082	Durbin-Watson stat		1.740390
Prob(F-statistic)	0.000000			

According to the above table, the following regression equations are obtained:

$$Y = 296.2298 + 0.808330X - 100.8334D_2 - 91.64277D_3 - 80.20780D_4$$

(88.20820) (0.037807) (45.11380) (44.02271) (26.73547) $R^2 = 0.974413$
 $t = (0.974413) (21.38032) (-2.235090) (-2.081716) (-3.000051)$
 $\overline{R^2} = 0.972678 \quad F = 561.7082 \quad n = 64$

3.3 Statistical testing

3.3.1 goodness of fit test

From the data in the above table, it can be obtained that the model's resolution coefficient is 0.984247, and the modified one is 0.983220, which shows that the model has high fitting degree to the sample.

3.3.2 F test

For $H_0: \beta_0 = \beta_1 = \beta_2 = \beta_3 = \beta_4 = 0$, given a significant level of $\alpha = 0.05$, the critical values of degrees of freedom of 4 and 45 are found to be less than 561.7082 in the F distribution table, which should reject the



original hypothesis and show that the regression equation is significant.

3.3.3 T test

At a given significant level of $\alpha 0.05$, the t distribution table shows that the absolute value of beta value of each dependent variable is greater than the critical value of 45 degrees of freedom, and in the case of other explanatory variables.

"Consumer income", "consumer's personal preference", "influenced by advertising" and "influenced by people's consumption" have significant effects on the explained variable "consumer consumption" respectively. Secondly, the P value of each explanatory variable is less than 0.05, which also shows that the consumer's income and advertising have a significant impact on the consumer's consumption. Consumer's personal preference and consumers' vulnerability to the influence of people also have a significant impact on consumer spending.

4. Conclusion

The conclusion of regression analysis is the same as that of data survey, and the following conclusions can be obtained by summing up the above data chart and fictitious variable regression analysis: College students' consumption has a remarkable characteristic of demonstration effect, herding effect and impulsiveness. 80.833% of college students' income is used for consumption, and consumer consumption is greatly affected by living income. As young people, college students pursue personality, they want to become special people, like products with unique style, so consumption is influenced by personal preference. College students have close contact with their classmates and friends every day, so they have a high degree of consistency.

They want and take the initiative to stay in line with the group, and with this consensus to group approval, from around the environment can also promote consumption. The impulsiveness of college students is also susceptible to advertising and other means of publicity.

5. Recommendations

Based on the investigation and research of this paper, the following suggestions are put forward. As a consumer, we should develop good consumption habits and rational consumption. As business operators, we should first understand the preferences of consumers at all levels, and then vigorously publicize them through advertising forms such as the Internet, television, propaganda manuals, etc. Reduce the price properly for promotion.

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